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In Memory of Dr. Ira Edward Aaron
(1919 – 2016)

For those of you who did not have an opportunity to meet Dr. Ira E. Aaron, you may be interested to learn that he founded the Department of Reading Education at The University of Georgia in the mid-1950s. Approximately five decades later, the former Department of Reading Education and Department of Language Education were merged to become what is now called the Language and Literacy Education Department.

Dr. Aaron began his career in education as a teacher-principal in a small school system in Georgia, but it was not until 1954 (after he had served his country in the armed services) that he earned his Ph.D. from the University of Minnesota. All told, he devoted more than 43 years of his life to the field of education, including serving as the elected president of the International Reading Association (now, the International Literacy Association). A founding member of the Reading Hall of Fame and the recipient of many awards during his long career, Dr. Aaron was especially proud of the William S. Gray Citation of Merit, which is still one of the highest honors the field can bestow on a professional in reading education.

Reading teachers and teacher educators across the United States knew Dr. Aaron as the co-author of many editions of the Scott, Foresman basal reading program. As his grandnephew Michael Covington recalled in a blog entry written in honor of his "Uncle Ed" (Ira Aaron's middle name was Edward), a whole generation of Americans grew up reading the *Fun with Dick and Jane* elementary book series. According to Covington, "Uncle Ed once boasted of being the co-author of one of the most notorious sentences in American literature, 'See Dick run!'" Perhaps lesser known is the fact Dr. Aaron also devoted time and scholarship to preparing numerous talks on the topic of children's literature and why it needs to be part of every reading teacher's repertoire.

Close to the time of Dr. Aaron's retirement from the Department of Reading Education in the mid-1980s, two people who knew him well—one a faculty colleague, Dr. Bob W. Jerrolds, and the other a doctoral student at the time, Deborah R. Dillon—published reports of their separate interviews with him. Their research aptly captured the compassion, humor, and collegiality that all who knew Dr. Aaron admired. For instance, when Deborah Dillon, now a full professor at the University of Minnesota, asked Dr. Aaron to whom he would attribute the reading field's increased interest in higher level comprehension skills, he replied without hesitation that Dr. Dolores Durkin "deserved as much credit as anyone [because] her articles are readable and they cause people to talk and think."

On his passing at 97 years of age, Ira E. Aaron leaves behind thousands of people whose lives he touched and changed. We in the Department of Language and Literacy Education find comfort in the fact his memory will live on in his work in reading instruction and children's literature, and through the many present-day literacy scholars on whose dissertation committees he served.

Respectfully submitted,

Donna E. Alvermann, PhD
The University of Georgia (12/4/16)

Photograph of Dr. Ira E. Aaron when he was Chair of the Department of Reading Education at The University of Georgia (probably late 1970s or early 1980s).
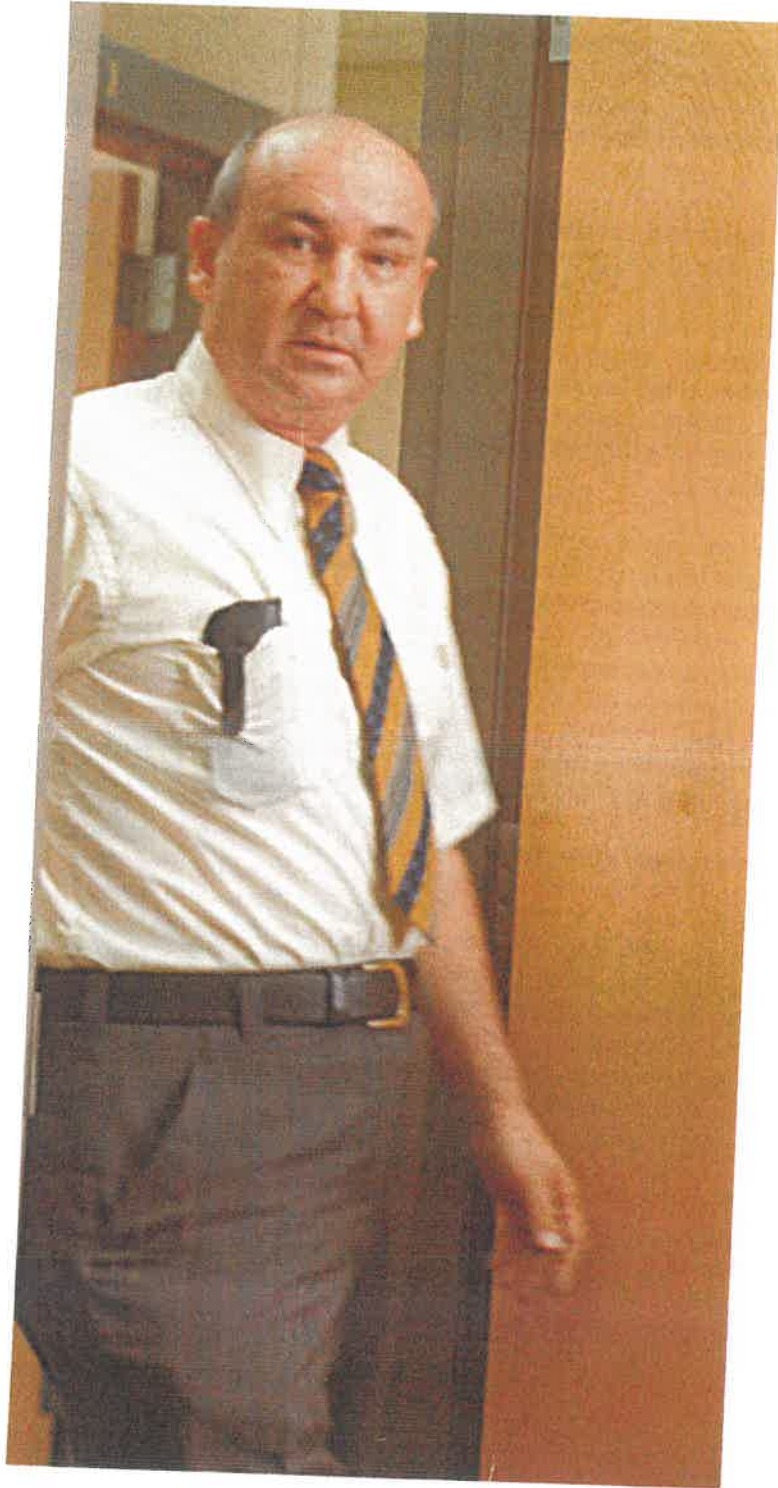
ASSESSMENT OF COMPREHENSION BY STANDARDIZED, NORM-REFERENCED TESTS

IRA E. AARON
E. SUTTON FLYNT
University of Georgia

Standardized, norm-referenced tests are prominent parts of most evaluation programs used to assess progress in reading. Though results are used along with other data about student progress, scores on standardized, norm-referenced tests are highlighted in discussions about reading progress. Some federal programs in the past have mandated that these tests be a major part of program evaluation. Reports of reading progress—or lack of progress—of states and school systems published in newspapers and periodicals usually are based upon results of these tests. Farr, Tuinman, and Rowls (1974) and Harnischfeger and Wiley (1976) concluded that reading achievement has either decreased gradually or leveled off. More recently, Farr, Fay, and Negley (1978) reported that students in one state were reading better in 1976 than students of comparable grades 30 years earlier when adjustments were made for age differences. Cooperman (1978), on the other hand, criticized the effectiveness of reading instruction. All of these—and many other studies—utilized data gathered from use of standardized, norm-referenced tests.

An implication that can be drawn from a closer look at data on reading achievement trends is that a more effective job likely is being done in teaching word recognition skills than in teaching comprehension (Aaron, 1978). A recent study by Durkin (1979) contends that very little teaching time is being devoted to reading comprehension. Although Durkin's findings may or may not be typical of teachers as a whole, comprehension is what reading is all about, and that is why the focus of this study is on comprehension.

Information about comprehension tests should be useful to evaluators, teachers, researchers, and administrators. Test users need to know what tests measure and how they measure it. Further, a comparison of tests will provide more insight into why results obtained from different publishers' tests differ. A study of test items will also help users compare skills assessed by tests with skills taught in basal materials used in their own schools or systems. This latter area of concern becomes more important in view of the current practice of using some standardized, norm-referenced tests as if they were criterion-referenced tests. Lastly, agreement on exactly what make up comprehension is hard to come by, but whatever it is, everybody believes in it.

Purposes of the Study

This study aimed toward learning more about how reading comprehension is assessed by five widely-used standardized, norm-referenced tests of reading comprehension. The five tests examined were the *California Achievement Test* (CAT), Levels 12-19 (1977); *Gates-MacGinitie Reading Tests* (G-M), Levels C-F (1978); *Iowa Test of Basic Skills* (ITBS), Levels 7-14 (1978); *Metropolitan Achievement Test* (MAT), Levels Primary II-Advanced II (1978); and the *Stanford Achievement Test* (Stan), Levels Primary II — Advanced (1973). Specific purposes were to analyze the passages and items on the comprehension subtests of the five selected tests in terms of the discourse form (narrative, expository, descriptive, and argumentation) of the passages on which the items were based, the comprehension level assessed (literal, inferential, and evaluative), the comprehension skills assessed, the estimated readability of each passage, and the length of the passages on which the items were based. In addition, the investigators made inter-test comparisons on each of the aforementioned points at the fourth and eighth grade levels.

The *Anchor Test Study* (1974) was carried out because it was recognized that widely used standardized, norm-referenced tests differed considerably in measuring units and in what they measured. This project established interchangeable norms among eight widely used tests so users could pretest with one test and posttest with another publisher's test. However, since 1974, all eight tests examined during the *Anchor Test Study* have been substantially revised.

In the present study, the focus is placed on the latest versions of the reading subtests that assess comprehension in five of the eight standardized, norm-referenced tests used in the *Anchor Test Study*. All of these tests also assess decoding skills and meaning vocabulary; however, no effort was made to examine any subtests other than those assessing comprehension. The researchers recognize the importance of the other subtests, but they were most interested in comprehension for reasons previously mentioned.

Procedures

Throughout the examination of the comprehension subtests of the five standardized, norm-referenced tests, the two researchers worked independently of each other in classifying each selection and/or item in terms of discourse form, comprehension level, comprehension skill being assessed and length of selection. Then meetings were held to compare findings and arbitrate differences where necessary.

Discourse Form

The selections were categorized initially into the two broad categories of poetry or prose. Then all selections were categorized into the four traditional forms of narration, exposition, description, and argumentation. The usual definition of discourse form were used as guides (Shaw, 1972; IRA, at press). Often, discourse is a mixture of several forms, but usually one form predominates. In this study the two researchers were able to agree on all passage classifications.

The five tests examined vary widely in amount of the four forms of discourse. Only three of the five tests use poetry and it accounts for a very small number of the passages and items. Four of the tests have few, if any, argumentation passages. Inter-test comparisons at a single level reveal considerable differences in amount of the forms of discourse. Generally, all of the tests, except the *California Achievement Test*, rely most heavily on narrative and expository passages for assessing reading comprehension. Refer to Table 1 for a

complete summary of the percentages of discourse forms found within each test. Poetry, which is presented in a separate column, also is included in the *Description* column.

Levels of Comprehension

All items were classified in terms of level of comprehension: literal, inferential, or evaluative. An uncomplicated, straightforward classification scheme was employed. If an item could be answered from information directly stated in the passage, it was considered to be literal. It was deemed unnecessary that the answer be stated in the exact words of the stem and appropriate completion, but it had to be answered clearly in the discourse without requiring use of inference. Inferential items were those in which answers were not explicitly stated in the passage and where evaluation was not involved. In inference, the basis for the answer, all facts needed to determine the correct answer, might be presented in the passage, but to reach the answer the reader must fill in gaps from experience or according to logic. An evaluation item was one in which the reader's judgment was involved.

The classification scheme used in this analysis is different somewhat from existing taxonomies such as the widely followed taxonomy of Barrett (1976). For example, Barrett's taxonomy has a fourth category labeled "appreciation." Further, Barrett's taxonomy includes recall of main ideas and sequence under literaly recognition as well as under inferential. As Pearson and Johnson (1978) point out, main ideas are seldom literal; they must be implied. Similarly, sequence must be inferred unless events or actions are prefaced by words indicating order of occurrences, as "first," "next," or "last."

The five tests utilized in the study vary considerably in how they categorize items, though all tests use the categories of literal and inferential. The *California Achievement Test* uses literal comprehension, interpretative comprehension, and critical comprehension; the *Gates-MacGinitie* includes only literal and inferential items; the three categories of the *Iowa Tests of Basic Skills* are literal meaning (facts), interpretative meaning (inferences), and evaluative meaning (generalizations); the six-way breakdown of the *Metropolitan Achievement Test* includes vocabulary, literal-specific, literal-global, inferential-specific, inferential-global, and evaluation; and the *Stanford Achievement Test* divides items into global meaning, explicit meaning, implicit meaning, meaning determined by context, and inferential meaning. The categories used in this study most closely match those of the *ITBS*, but the subcategories differ somewhat. For example, main idea and figurative language are listed as evaluative meaning rather than as inferential in the *ITBS*.

Within the levels of a given test, the percentages of literal, inferential, and evaluative items vary widely and appear to follow no particular pattern. Inter-test comparisons reveal considerable differences in percentages of literal and implied items, and only one test gave any substantial attention to evaluation items. The most striking feature, in terms of the levels of comprehension assessed, is that at most levels inferential items far outnumber literal test items. See Table 1 for a breakdown, by test, of the number of items and percentage of items that were at the various levels of comprehension.

Classification of Skills

Currently available materials designed for use in reading instruction and evaluation are, for the most part, based on a skills approach to comprehension. Almost without exception, basal reader series and other published instructional materials, knowingly or unknowingly, are built around the idea that comprehension is made up of skills and abilities, rather than being global or unitary in nature. The same can be said about standardized reading tests and the approaches presented in reading methodology texts.

Classifying test items in terms of the comprehension skill assessed may appear to be a simple task. However, the task is far from simple on some types of items. An item may involve more than one skill, as drawing a conclusion and cause and effect relationship or vocabulary and figurative language. Further, all items could be classified as identifying main ideas or details. Therefore, some hierarchical pattern must be established when undertaking a categorization task of this nature.

In the present study, the researchers, working separately, classified each item on all levels of all subtests into one of nine categories (see Table 2 for the nine categories utilized). Then results were compared and any differences were arbitrated. Occasionally, items were found which tapped more than a single skill, as character's feeling and drawing a conclusion. Such items were classified under the skill that appeared to be the focus of the item. If an item assessed a skill like character's feeling or cause-effect relationship which could be answered only by drawing a conclusion, then the item was categorized under the skill other than drawing a conclusion. Any item classified as detail was an item involving something other than a main idea and one that did not fit any other skill category.

With regard to the comprehension skill assessed, only a few comprehension subskills are sampled within a given level of a test. In fact, many reading comprehension subskills taught in basal readers are not assessed in any of the five tests. A comparison of the five tests reveals an emphasis by three of the tests on detail, main idea, and cause-effect items. Four of the five tests have the vast majority of their items falling into these three subskill categories plus drawing conclusions. Only one test reveals a spread across the nine comprehension subskill categories. See Table 2 for the percentages of subskills assessed by items on the five tests.

Readability of Passages

Besides investigating discourse form and the levels and skills of comprehension assessed by the five standardized, norm-referenced tests, the researchers investigated the difficulty of the passages upon which the test items were based. Specifically, passage length, sentence length, item density, and readability estimates were studied.

Three readability formulas were utilized to obtain estimates of passage difficulty. The Harris-Jacobsen Readability Formula (1975) was used for test levels designed for third grade or below. This formula was utilized at the primary levels of the five tests because it provides specific grade levels and subdivisions of each grade level through the third grade (i.e., preprimer, primer, first reader). The Fry Readability Graph (1968) was used for test levels at or above the fourth grade. The Dale-Chall Readability Formula (1948) was utilized to spot-check results of the Fry Graph when grade levels obtained were three or more grade levels above or below the test audience. In the case of the Fry Readability Graph, as many 100 word samples as possible were used to obtain an overall passage readability level. For example, a 526 word passage's readability level was based on five 100 word samples.

Readability estimates reveal that readability levels of selections within a test vary widely and follow no particular arrangement in terms of a progression of difficulty. In addition, readability estimates vary among the five tests at comparable difficulty levels. Table 3, which reveals the

median readability estimates for each level of each test, indicates that for the most part each test level's median readability estimate is at the approximate difficulty level for the intended test audience. However, the range of readability estimates, also provided in Table 3, for each test level discloses a wide disparity in terms of the difficulty of the passages within a given test level. Specifically, the middle levels of the five tests show the widest range of readability estimates, varying from a three grade level range to a twelve grade level range. Refer to Table 3 for a complete summary of the median readability estimates and range of readability estimates for each level of each test.

With regard to passage length, sentence length, and item density, selections vary considerably in length, and selections within a test are not arranged from shortest to longest. Some of the tests have much longer selections than some other tests at comparable difficulty levels. Also, the number of selections at a given level vary considerably among the five tests. Item density results also show wide differences among the tests. Table 4 summarizes the findings concerning passage length, sentence length, and item density.

In order to make inter-test comparisons easier for the reader, a comparison of each area investigated was made at the fourth and eighth grades. The results of this comparison are provided in Tables 5, 6, 7, and 8.

Implications

A number of implications may be drawn from the findings of this study. Among those that can be drawn are:

1. Users of standardized, norm-referenced tests should remember that test content varies widely from level to level and from publisher to publisher. Therefore, results on any two given levels of the same test or on two different tests should not be expected to be the same for a student.
2. Almost all levels of the tests contain a higher percentage of inference items than literal. These tests are of limited use in assessing literal and evaluative comprehension.
3. Standardized, norm-referenced tests assess comprehension around brief selections and ask too many questions so that some must be about trivia. The tasks in comprehending important ideas in longer passages (as in short stories or in chapters in textbooks) may be quite different. Performance on one may not be similar to that on another.
4. The lack of a substantial number of evaluative items in these tests leads one to the conclusion that the tests tell little about a student's ability to read critically. In addition, some of the tests give limited attention to assessing literal comprehension. Therefore, some of the tests tell very little about how well students can comprehend literally.
5. Many comprehension skills are not assessed in these tests. Therefore, their usefulness in pinpointing strengths and weaknesses in skill areas is very limited. For instance, the *Metropolitan Achievement Test* is limited as a "criterion-referenced" test.
6. Most of the tests show "ragged profiles" in terms of sequential "buildup" in passage difficulty. Publishers may need to give closer attention to this aspect of test development.
7. Instructional decision-making and program evaluation should include other sources of information besides standardized, norm-referenced tests for the sake of accuracy.

The results of this study point out the need for teachers, evaluators, researchers, and administrators to study closely the make up of standardized, norm-referenced tests as well as how they measure what they claim to measure. In the past there have been mismatches between instructional goals and outcomes and the instruments used to evaluate those goals and outcomes. Selecting the correct instrument for program evaluation will provide results which will be more relative to what has been taught.

References

Aaron, I. E. Today's reading achievement — with suggestions for improving tomorrow's performance. *Journal of Research and Development in Education,* 1978, *11* (3), 1-10.

Barrett, T. Taxonomy of reading comprehension. In Smith, R. and Barrett, T. *Teaching Reading in the Middle Grades. Reading, Mass.: Addison-Wesley, 1976.*

California Achievement Tests, form C, levels 12-19. Monterey, California: CTB/McGraw-Hill, 1977.

Cooperman, P. *The literacy hoax.* New York: William Morrow and Company, Inc., 1978.

Dale, E., and Chall, Jr. A formula for predicting readability. *Educational Research Bulletin,* January 1948, *237*, 11-20.

Durkin, D. What classroom observations reveal about reading comprehension instruction. *Reading Research Quarterly,* 1978-1979, *14* (4), 481-533.

Farr, R., Fay, L., and Negley, H.H. *Then and now: Reading achievement in Indiana (1944-45 and 1976).* Bloomington, Indiana: Indiana University, 1978.

Farr, T., Tuinman, J., and Rowls, M. *Reading Achievement in the United States: Then and now.* Bloomington, Indiana: Indiana University, 1974.

Fry, E. A readability formula that saves time. *Journal of Reading,* April 1968, *11* (7), 575-78.

Gates-MacGinitie Reading Tests, form 1, levels C-F. Boston, Mass.: Houghton-Mifflin Company, 1978.

Harnischfeger, A., and Wiley, D. E. Achievement test scores drop. So what? *Educational Researcher,* March 1976, *5* (4), 5-12.

Harris, A. J., and Jacobsen, M.D. The Harris-Jacobson readability formulas. In A. J. Harris and E. R. Sipay (Ed.) *How to increase reading ability.* New York: David McKay Co., Inc., 1975.

Harris, T. H., and Hodges, R. G. *A dictionary of reading and related terms.* Newark, Delaware: International Reading Association, at press.

Iowa Test of Basic Skills, form 8, levels 7-14. Boston, Mass.: Houghton-Mifflin Company, 1978.

Loret, P. G., Seder, A., Bianchini, J. L., and Vale, C. A. *Anchor Test Study.* Washington, D.C.: U.S. Government Printing Office, 1974.

Metropolitan Achievement Test, form JS, level Primary II-Advanced II. New York: Harcourt Brace Jovanovich, Inc., 1978.

Pearson, P. D., and Johnson, D. D. *Teaching reading comprehension.* New York: Holt, Rinehart and Winston, 1978.

Shaw, H. *Dictionary of literary terms.* New York: McGraw-Hill Book Company, 1972.

Stanford Achievement Test, form 1, levels Primary II-Advanced. New York: Harcourt Brace Jovanoich, Inc., 1973.

Table 1

ANALYSIS OF DISCOURSE FORM AND COMPREHENSION LEVEL ON FIVE WIDELY-USED
STANDARDIZED, NORM-REFERENCED TESTS, PRESENTED IN PERCENTAGES

Test	Level	No. Items	Discourse Form					Comp. Level		
			Narr.	Expo.	Desc.	Arg.	Poet	Lit	Inf.	Eval.
CAT	12	20	67	33	0	0	0	40	60	0
	13	27	67	0	33	0	0	22	78	0
	14	38	20	40	20	20	20	30	65	5
	15	40	17	33	33	17	40	25	68	7
	16	30	13	25	25	37	13	20	70	10
	17	40	13	25	25	37	13	20	68	12
	18	40	0	29	29	42	14	17	68	15
	19	40	0	29	29	42	14	7	78	15
G-M	C	44	55	45	0	0	0	32	68	0
	D	43	31	69	0	0	0	19	81	0
	E	43	29	64	0	7	0	14	84	2
	F	43	14	72	14	0	0	33	67	0
ITBS	7	23	100	0	0	0	0	43	57	0
	8	37	25	75	0	0	0	37	59	4
	9	44	38	62	0	0	0	23	77	0
	10	49	38	50	12	0	0	14	86	0
	11	54	50	38	12	0	0	2	98	0
	12	56	38	38	24	0	12	4	96	0
	13	57	33	50	17	0	17	5	93	2
	14	58	0	71	29	0	29	5	91	4
MAT	Pr. 2	55	64	27	9	0	0	60	40	0
	Ele.	60	64	36	0	0	0	43	57	0
	Int.	60	27	37	27	9	0	40	58	2
	Adv. 1	55	0	75	25	0	0	36	62	2
	Adv. 2	50	0	75	25	0	0	26	70	4
Stan	Pr. 2	48	—	—	0	0	0	0	100	0
	Pr. 3	70	36	55	9	0	9	29	71	0
	Int. 1	72	36	55	9	0	9	29	71	0
	Int 2	71	8	75	17	0	8	37	63	0
	Adv.	74	8	84	8	0	8	35	65	0

Table 2

SKILLS SAMPLED BY ITEMS ON FIVE WIDELY-USED STANDARDIZED, NORM-REFERENCED TESTS, PRESENTED IN PERCENTAGES

Test	Level	Grade Level	MI	D	V	C-E	Skills DC	Ch	Seq	FL	Other*
California	12	1.6- 2.9	15	35	0	30	0	15	5	0	0
	13	2.6- 3.9	7	15	26	22	7	7	4	11	0
	14	3.6- 4.9	8	23	0	23	12	12	0	17	5
	15	4.6- 5.9	10	20	0	18	7	15	3	20	7
	16	5.6- 6.9	5	12	0	20	22	10	3	15	13
	17	6.6- 7.9	5	22	0	13	15	13	5	13	14
	18	7.6- 9.9	5	12	2	23	15	8	2	18	15
	19	9.6-12.9	10	5	2	18	18	8	2	22	15
Gates-MacGinitie	C	3	7	55	9	9	11	5	2	2	0
	D	4- 6	16	63	0	7	12	0	2	0	0
	E	7- 9	12	47	12	9	9	7	0	2	2
	F	10-12	16	39	5	5	25	5	0	5	0
ITBS	7	1.7- 2.6	0	57	0	22	8	13	0	0	0
	8	2.7- 3.5	0	52	0	26	7	15	0	0	0
	9	3	9	23	7	36	21	2	2	0	0
	10	4	8	21	4	35	22	6	2	2	0
	11	5	13	17	2	26	31	7	2	2	0
	12	6	14	20	5	16	32	5	2	2	4
	13	7	17	21	7	11	33	2	0	4	5
	14	8	17	21	5	12	29	0	0	9	7
Metropolitan	Prim. 2	2.5- 3.4	7	55	7	15	9	5	2	0	0
	Elem.	3.5- 4.9	5	47	8	22	2	3	12	2	0
	Int.	5.0- 6.9	8	32	17	18	10	3	3	5	4
	Adv. 1	7.0- 9.9	9	36	15	20	11	5	0	4	0
	Adv. 2	10.0+	8	28	12	12	20	4	0	10	6
Stanford	Prim. II	2.5- 3.4	0	0	88	0	12	0	0	0	0
	Prim. III	3.5- 4.4	6	33	50	4	6	1	0	0	0
	Int. I	4.5- 5.4	7	33	17	10	31	0	1	1	0
	Int. II	5.5- 6.9	14	39	6	12	20	3	0	6	0
	Adv.	7.0- 9.5	8	35	11	18	22	0	1	4	1

MI — Main Idea
D — Detail
V — Vocabulary
C-E — Cause-effect Relationship
DC — Drawing Conclusions
Ch — Character Trait/Action/Feeling

Seq — Sequence Relationship
FL — Figurative Language
*Other Includes: Literary Type
Writer's Purpose
Recognition Fact/Opinion
Propaganda Technique

Table 3

MEDIAN READABILITY LEVEL AND RANGE OF
READABILITY OF FIVE WIDELY USED STANDARDIZED,
NORM-REFERENCED TESTS

Test	Grade Level	Mdn.	Range
CAT	1.6- 2.9	1	P-2/1
	2.6- 3.9	2/1	1-3/1
	3.6- 4.9	3/1	2/2-3/1
	4.6- 5.9	5	3- 8
	5.6- 6.9	6	5-10
	6.6- 7.9	7	6- 8
	7.6- 9.9	9	7-13
	9.6-12.9	10	6-13
G-M	3	4	2/1-7
	4- 6	6	3-10
	7- 9	8	3-14
	10-12	10	6-13
ITBS	1.7- 2.6	1	1-2/2
	2.7- 3.5	3/1	2/2-3/2
	3	3/1	2/2-4
	4	4	3/1- 6
	5	4	3/2- 6
	6	5	3/2- 7
	7	7	5-11
	8	7	4-11

Test	Grade Level	Mdn.	Range
MAT	2.5- 3.4	2/2	PP-8
	3.5- 4.9	7	3-11
	5.0- 6.9	7	5-10
	7.0- 9.9	9	5-12
	10.0+	10	9-14
Stan	2.5- 3.4	5	
	3.5- 4.4	3/2	3/1- 5
	4.5- 5.4	8	7-11
	5.5- 6.9	9	6-12
	7.0- 9.5	10	7-12

*PP = preprimer
 P = primer

Table 4

ANALYSIS OF PASSAGE LENGTH, SENTENCE LENGTH, AND ITEM DENSITY ON FIVE WIDELY-USED STANDARDIZED, NORM REFERENCED TESTS

CAT	Psg.	Words	Total Number of Sent.	Items	Avg. Sent. Length	Avg. per Psg. Words	Items	Avg. per Item Words	Sent.	Range Items Per Psg.
12	3	300	33	20	9.09	100	6.67	15	1.65	5- 7
13	3	425	44	17*	9.66	142	5.67	25	2.59	5- 7
14	5	899	87	35*	10.33	180	7.00	26	2.49	3-10
15	6	993	91	40	10.91	166	6.67	25	2.28	4- 9
16	8	1459	123	40	11.86	182	5.00	37	3.08	3- 7
17	8	1546	132	40	12.98	214	5.00	39	2.90	3- 7
18	7	1700	113	40	15.04	243	5.71	43	2.83	3- 7
19	7	1815	117	40	15.51	259	5.71	45	2.93	3- 7
G-M										
C	22	1052	85	44	12.38	48	2.00	24	1.93	2
D	16	1342	91	43	14.75	84	2.69	31	2.12	2- 4
E	14	1348	74	43	18.22	96	3.07	31	1.72	2- 5
F	14	1262	57	43	22.14	90	3.07	29	1.33	2- 5
ITBS										
7	5	257	37	23	6.95	51	4.60	11	1.61	4- 7
8	4	380	31	28	12.26	95	7.00	14	1.11	4-10
9	8	1194	110	44	10.85	149	5.50	27	2.50	4- 8
10	8	1596	153	48	10.43	200	6.00	33	3.19	4- 8
11	8	1998	180	53	11.10	250	6.75	38	3.40	4- 8
12	8	2009	178	55	11.29	251	7.00	37	3.24	4- 9
13	6	2074	144	56	14.40	346	9.50	37	2.57	8-15
14	6	1898	123	57	15.43	316	9.67	33	2.16	4-15
MAT										
Pr. 2	10	1007	86	50*	11.71	101	5.00	20	1.72	5
Elem.	11	1256	103	60	12.19	114	5.45	21	1.72	4- 7
Int.	11	1857	120	60	15.48	169	5.45	31	2.00	5- 6
Adv. 1	9	1901	105	55	18.10	211	6.11	35	1.91	6- 7
Adv. 2	5	1564	72	50	21.72	196	6.25	31	1.44	5- 7
Stan										
Pr. II	1	114	6	6*	19.00	114	6.00	19	1.00	6
Pr. III	6	528	36	35	14.67	88	5.83	16	1.06	5- 7
Int. I	11	1476	65	66	22.71	134	6.00	22	0.98	6- 7
Int. II	12	1849	92	71	20.15	154	5.92	26	1.30	5- 7
Adv.	13	2136	103	74	20.74	164	5.69	29	1.39	4- 7

*Additional items based on sentences rather than passages

Table 5

ANALYSIS OF DISCOURSE FORM AND COMPREHENSION LEVEL AT THE FOURTH AND EIGHTH GRADE, GIVEN IN PERCENTAGES

	Discourse Form					Comp. Level		
Fourth	Narr.	Expo.	Desc.	Arg.		Lit.	Inf.	Eval.
CAT	29	48	9	14	9	30	65	5
G-M	37	63	0	0	0	19	81	0
ITBS	39	45	16	0	0	14	86	0
MAT	63	37	0	0	0	43	57	0
Stan.	37	55	8	0	8	29	71	0
Eighth								
CAT	0	35	35	30	18	18	67	15
G-M	33	58	0	9	0	14	84	2
ITBS	0	78	22	0	22	5	91	4
MAT	0	76	24	0	0	36	62	2
Stan.	8	86	6	0	6	35	65	0

Table 6

COMPREHENSION SKILLS SAMPLED BY TEST ITEMS AT THE FOURTH AND EIGHTH GRADE, GIVEN IN PERCENTAGES

Fourth	MI	D	V	CE	DC	Ch	Sq	FL	Other*
CAT	10	20	0	18	7	15	3	30	7
G-M	16	63	0	7	12	0	2	0	0
ITBS	8	21	4	35	22	6	2	2	0
MAT	5	47	8	22	2	3	12	2	0
Stan.	7	33	17	10	31	0	1	1	0
Eighth									
CAT	5	12	2	23	15	8	2	18	15
G-M	12	47	12	9	9	7	0	2	2
ITBS	17	21	5	12	29	0	0	9	7
MAT	9	36	15	20	11	5	0	4	0
Stan.	8	35	11	18	22	0	1	4	1

*Literary type, writer's purpose, fact/opinion, propaganda

Table 7

READABILITY ESTIMATES OF PASSAGES FOR FOURTH AND EIGHTH GRADES

Passage Number	Fourth Grade					Eighth Grade				
	CAT (15)	G-M (D)	ITBS (10)	MAT (Ele)	Stan. (P.3)	CAT (18)	G-M (E)	ITBS (14)	MAT (A1)	Stan. (Adv.)
1	5	7	4	3	3/1	6	3	7	5	10
2	*	3	3/1	4	3/2	11	10	*	10	9
3	3	5	3/2	7	5	9	8	11	10	7
4	8	5	4	4	5	13	9	7	7	9
5	7	6	3/2	6	3/2	*	6	9	12	12
6	*	6	3/2	7		13	6	4	7	12
7		7	4	9		7	**	*	9	11
8		7	6	11			14		9	9
9		5		8			8		15	9
10		7		7			8			*
11		6		9			8			12
12		6					9			10
13		4					7			11
14		10					7			
15		5								
16		7								

* — Poetry
** — Invalid score

Table 8

ANALYSIS OF PASSAGE LENGTH, SENTENCE LENGTH, AND ITEM DENSITY AT THE FOURTH AND EIGHTH GRADE

	Psg.	Words	Total Number of		Avg. Sent. Length	Avg. per Psg.		Avg. per Item		Range Items Per Psg.
			Sent.	Items		Words	Items	Words	Sent.	
Fourth										
CAT	6	933	91	40	10.91	166	6.67	25	2.28	4- 9
G-M	16	1342	91	43	14.75	84	2.69	31	2.12	2- 4
ITBS	8	1596	153	48	10.43	200	6.00	33	3.19	4- 8
MAT	11	1256	103	60	12.19	114	5.45	21	1.72	4- 7
Stan.	6	528	36	35	14.67	88	5.83	16	1.06	5- 7
Eighth										
CAT	7	1815	117	40	15.51	259	5.71	45	2.93	3- 7
G-M	14	1348	74	43	18.22	96	3.07	31	1.72	2- 5
ITBS	6	1898	123	57	15.43	316	9.67	33	2.16	4-15
MAT	9	1901	105	55	18.10	211	6.11	35	1.91	6- 7
Stan.	13	2136	103	74	20.74	164	5.69	29	1.39	4- 7

An Examination of Teachers' Writing Practices After Common Core Standards:

Is Writing "In?"

Zoi A. Phillipakos, University of North Carolina, Charlotte

Abstract

The Common Core States standards call for students to be college and career ready and set high expectations for K-12 learners and their teachers. The purpose of this paper was to investigate elementary teachers' time devoted to writing, instructional practices, their use of technology, and differentiation practices in writing after the Common Core State Standards Initiative. Participants were 39 teachers who attended Master-Level courses in two different Universities at two different states in the Mid-Atlantic region. Teachers' responses suggest that there has not been a change in their writing practices regarding genre, use of technology, instruction of writing processes, and tasks. Further, teachers shared that they lacked resources to support their instruction and prepare students for 21st century demands.

Keywords: *writing practices, elementary teachers, writing, differentiation, technology*

Introduction

Writing is a complex cognitive (Hayes & Flower, 1980; Bereiter & Scardamalia, 1987) and social task (Shaughnessy, 1977; Schultz & Fecho, 2000). As a cognitive task, it focuses on the individual and is limited by psychological processes (McCutchen, 2000; 2006). As a social task, it is shaped through interactions between readers and writers (Cole & Engestrom, 1993; Shaugnessy, 1977; Prior, 2006; Nystrand, 2006). Expert writers are able to negotiate between those demands and manage their time as they consider both the rhetorical task and the demands of the audience (Bereiter and Scardamalia, 1986). However, developing writers or novice ones may not be as able to respond to the writing challenges and may gradually develop negative feelings toward writing (Pajares, 2003).

Teachers also find the teaching of writing challenging and their confidence can affect their writing practices (Graham, Harris, Fink & MacArthur, 2001). Unfortunately, many teachers report being ill-prepared to teach writing (Kiuhara, Graham, & Hawken, 2009; Philippakos & Moore, in press) and there is little in the way of systematic professional development programs for preparing teachers to teach writing (McCarthey, & Geoghegan, 2016). When teachers lack proper training and knowledge, they lack self-efficacy and their instruction can suffer (Stein & Wang, 1988), which in turn may affect students negatively (Bruning & Horn, 2000).

Unfortunately, writing has not received a lot of attention across educational policies with the exception of the Common Core State Standards (CCSS, 2010). The standards emphasized writing instruction and also set goals for instruction that addresses reading and writing connections. The purpose of this article is to describe elementary teachers' time, writing

practices after the CCSS, their use of materials and technology, and their instructional adaptations.

Common Core State Standards

The CCSS (2010), provided an expectation for writing competence upon student's high school graduation and College entry. For college and career readiness, students should know how to read and write for different genres, how to respond in writing to questions that require them to extract evidence from a text or multiple texts, how to apply the writing process flexibly in order to achieve specific writing goals, how to use technology to facilitate the writing process, and how to satisfy the demands of an intended audience. The new standards require students to think critically and make strategic decisions about what to write in response to specific questions. Consequently, for all students to be college and career ready, classrooms should provide instruction that supports students' understanding about how to flexibly apply the writing process, how to write for different genres and subgenres, how to address different audiences, and how to write about content that is read.

Effective Writing Practices

Comprehensive research studies and reviews provided instructional recommendations for teachers in grades K-5 and 4-12 (Graham, McKeown, Kiuhara & Harris, 2012; Graham & Perin, 2007; Graham, Bolinger et al., 2012). Graham, Bolinger and colleagues (2012) released a practice guide for the What Works Clearinghouse (WWC) with five recommendations on writing instruction for grades K-5. The recommendations were reached after a careful review of 41 studies that met the WWC Standards. The level of evidence per recommendation was also identified from this review indicating the need for additional research in specific areas:

1. Provide daily time for students to write (minimal evidence).

2. Teach students to use the writing process for a variety of purposes (strong evidence).

3. Teach students to become fluent with handwriting, spelling, sentence construction, typing, and word processing (moderate support).

4. Create an engaged community of writers (minimal support).

Literature that speaks to the value of technology in writing is important to consider given the context of the CCSS. Technology provide cognitive and social benefits to writers. Purcell, Heaps, Buchanan, and Friedrich (2013) found that technology can motivate writers. Technology has also proven to be a useful tool for supporting writing development. For example, word processors can support the revision process (Graham, MacArthur, & Fitzgerald, 2013; Harper, 1997). Finally, technology can be used to support collaborative writing, peer revision, and provide authentic audiences for writers (Suwantarathip & Wichadee, 2014; Zhou, Simpson, & Domizi, 2012).

A meta-analysis by Graham and Perin (2007) of 123 experimental studies identified 11 instructional elements that had evidence of effectiveness in grades 4 to 12: 1) Writing Strategies ($d = 82$), 2) summarization ($d = .82$), 3) collaborative writing ($d = .75$), 4) specific product goals ($d = .7$), 5) word processing ($d = .55$), 6) sentence combining ($d = .5$), 7) prewriting ($d = .32$), 8) inquiry activities ($d = .32$), 9) process writing approach ($d = .32$), 10) study of models ($d = .25$), and 11) writing for content learning ($d = .23$).

A closer examination of the research recommendations across grades K-12 and of the CCSS suggests that there are commonalities between the CCSS and research-based recommendations. Students should be supported in writing instruction that addresses writing for different purposes and audiences, provides opportunities for collaboration among peers across the writing process, and for writing about information that is read. Further, students should be

taught the writing process and strategies to complete its different steps. In addition, they should be taught skills such as handwriting, spelling, sentence combining, and typing to clearly express intended meanings, present, and organize their ideas. Throughout, technology could be integrated to facilitate writing processes and transform products.

Teachers' Practices

National surveys have described teachers' writing instruction (e.g., Cutler & Graham, 2008; Gilbert & Graham, 2010), their practices, and beliefs about writing. These surveys suggest that writing is a challenging subject for teachers and students. These challenges can be summarized under the following categories: time allotted to writing instruction, use of technology, and writing practices.

Time. Earlier surveys by Graham, Harris, Fink-Chorzempa and MacArthur (2003) as well as more recent surveys by Cutler and Graham (2008) and Gilbert and Graham (2010) suggest that limited time is devoted to writing instruction. The findings by Graham, Harris, Fink-Chozempa and MacArthur (2003) found that teachers spent 36 minutes a day on writing. Similarly, Cutler and Graham (2008) reported that primary grades teachers spent 21 minutes a day and Gilbert and Graham (2011) reported that students on grades 4-6 spent 24 minutes writing.

Technology. A survey by Kiuhara, Graham, & Hawkins (2009) with high-school students suggested that teachers used technology for students to complete writing tasks less than once a month. In the study by Gilbert and Graham (2008) approximately 18% of teachers in Grades 4 to 6 reported using word-processing several times a year and only 2% several times a day, while 42% of primary grades teachers (Cutler & Graham, 2008) reported never to use a computer for writing instruction.

Writing practices. An examination of teachers' writing practices suggests that there is a wide range of tasks completed across grades and a variety of instructional emphasis by classroom teachers. Primary grades' teachers (72%) reported to use a process approach to writing and that 56% of their instruction was devoted to whole group meetings. Further, a greater emphasis was given to story writing (96.1%) and to the use of worksheets (86%) than persuasion (36%) or informative writing (59%). Approximately 3% of teachers in grades 4 to 6 used a process approach several times a year, 13% taught strategies for planning and 13% taught strategies for revising. Approximately 30% of the teachers reported to include the use of models in writing. Further, 46% of teachers reported working on story writing several times a year, 51% working on personal narratives, 71% working on persuasion, and 26% writing in the content areas.

Even though the CCSS and research recommendations suggest that attention should be given to writing instruction and sufficient time be to the use of technology in writing, classroom practices-as indicated in teacher surveys-suggest that stronger emphasis should be given to these areas. However, such surveys that examined teachers' practices were conducted prior to the CCSS. Considering that the standards have been in effect since 2010 across many states in the U.S. and that writing is an important literacy task that can determine college and career success, it is imperative to examine teachers' writing practices, their current use of time to on writing, and their efforts to differentiate instruction in order to support all learners. This pilot work attempts to answer the following: What are teachers' writing practices, use of technology, time on writing, and differentiation practices, and what changes have occurred (if any) after the CCSS?

Methods

Participants and Context

Participants were 39 classroom teachers across two states of the Mid Atlantic Area (n = 39 female). Participants attended Master's level courses in a Master's in Reading program and in a General Education program on two four-year colleges. Overall, 92.3% of the participants were Caucasian/White, 5.1% were Hispanic/Latino, and 2.6% were Asian. It should be noted that participants were also middle and high school teachers, but in this work only respinses by elementary teachers are included (*n* = 39).

Data Sources and Analysis

All participants were invited via informed consent to participate in an online survey that included a total of 167 items (multiple choice and short responses). The survey included four sections: (a) participants' demographics, (b) professional development experiences and needs, (c) writing practices, and (d) preparation for new assessments. Items in this survey were based on previous teacher surveys (Cutler & Graham, 2008; Gilbert & Graham, 2010) and additional items were developed. Only results on teachers' use of writing materials, instructional practices, and differentiation are reported here. Information on professional development experiences and needs is reported elsewhere (Philippakos, & Moore, in press). Finally, participants were asked to participate in a brief follow-up, nondirective (Weiss, 1995) interview. Five participants indicated interest. Interviews were audiotaped and transcribed. Transcriptions were examined for accuracy by two research assistants who were not aware of the study's purpose. Responses to the multiple choice questions were analyzed quantitatively, while open responses were analyzed qualitatively. Specifically, a deductive analysis of patterns on open responses was conducted (Strauss & Corbin, 1998). Interview data were analyzed by examining patterns and themes (Weiss, 1995).

Procedures

Data were collected through the Universities' secure systems. Students' responses were exported into a secure excel file that was later shared with the researchers. Participants were provided with two reminders during the duration of the study via the Universities' technology center. The study was completed within 20 days. Participants who had indicated interest to participate in a follow up interview were contacted and meetings were scheduled within two weeks after the end of the survey.

Results

Time

Regarding the use of time to teach writing, the majority of teachers spent less than 3 hours a week (64.2%) in teaching writing and on average their students spent less than 3 hours weekly (66.8%) writing.

Change on time. The majority of teachers reported not having made any changes on the time allotted to the teaching of writing after the CCSS (64.1%) while 20.5% reported spending less time teaching writing. Regarding the time students spent to complete writing tasks, 59% of teachers reported no changes after the standards but 30.8% of the teachers shared they noticed a decrease in the time their students spent writing across an instructional week.

Differentiation

When teachers were asked if they differentiated their writing instruction, a little more than half explained that differentiation took place for students who had identified disabilities (59%). Other teachers shared that they made any possible effort to differentiate (28%), but did not provide specific detail about those efforts, and others explained that they differentiated only

for spelling and grammar (10.3%). Only a small percentage of participants did not differentiate (2.6%).

In order to better understand what teachers meant by differentiation, we asked them to define the term. Their responses reflected the understanding that differentiation meant instructional adjustments to meet students' needs. As one of the teachers stated,

"*Differentiation in writing would be to meet the needs of each writer in your classroom by scaffolding your instruction either with the way you present information, the quantity of writing needed to be produced, or the structure.*"

Some teachers elaborated on their explanations in an effort to clarify the scaffolds they provided. Their explanations primarily referred to (a) materials, (b) expectations and procedures, and (c) instructional arrangements. With regards to materials, teachers mentioned the use of different graphic organizers, the use of sentence starters, and/or the use of a paper that had different formats (e.g., differently lined paper). One of the teachers said,

"*My classroom has different papers for the students to write stories. For example, one kind of paper has 1 line, another kind has 2 lines, etc. I also have letter strips with letter formation and picture cues for each letter sound that some students use.*"

When referring to expectations and procedures, teachers mentioned adjustments of expectations according to students' writing skills and abilities. One of the teachers explained that differentiation here referred to, "*The amount of assistance and guideline a student has.*"

In reference to instructional arrangements, teachers primarily mentioned group arrangements (26.3%) and the use of conferences (52.6%). In an effort to explain grouping procedures, one of the teachers explained,

"*You need to pair students who can benefit from working with one another during the evaluation and revision stage. This also means that setting an expectation for length is just pigeon-holing them into a situation where they will not feel successful. Students may need assistance in small group settings to complete a collaborative paper instead of one, independently*."

Meeting with students in conferences was the main avenue of differentiation for some teachers. One of them shared, "*Other than conferencing with students based on their needs, I am not sure how to differentiate my writing instruction*."

Nevertheless, differentiation was described to be a challenging task for teachers. Even though they explained its importance and necessity, some responses indicated the frustration they felt in their effort to support all their students and their needs. As one of the teachers said, "*We differentiate for every subject. It's overwhelming. There should be more than one teacher in a room for all we are expected to do*."

Instructional Materials

The majority of teachers reported that they did not use a commercial program for the teaching of writing (61.5%). Teachers who did use a commercial program referred to a variety of writing programs their school used (e.g., Writing Fundamentals, Units of Study) or to a Basal that included writing (e.g., Wonders, Harcourt). However, even when programs were available, teachers reported having incomplete resources. For example, one teacher stated, "*I suppose following Teacher's College is a program but many units have no book to follow*." Another teacher also described the lack of complete resources, "[We use] *Writing Fundamentals, somewhat. We only have 3 out of the 6 available units and are told to use them as a resource rather than a program in its entirety*." One teacher expressed her challenge in understanding

how to utilize the provided resource, "*We were given the Lucy Calkins materials. However, they were never built into the curriculum that they hired an outside company to write. To be honest, mine is still shrink-wrapped in my closet.*"

When teachers were asked to explain what additional resources they used in the teaching of writing, they primarily stated that they created their own materials or the work that other teachers had developed. For example, some mentioned district-level provided resources that were developed by a team of experienced teachers. Finally, they referred to the use of resources that were specific to editing and grammar, Internet resources, mentor texts, and read alouds, but did not provide details about how these were used. Overall, teachers primarily discussed their input in developing their own resources for writing instruction. As one of the teachers stated, "*we just have to be super creative.*"

Change on instructional materials. The majority of teachers stated that the resources they used had not changed after the introduction of the CCSS (71.1%).   The small percentage of teachers who did indicate some change in instructional materials after CCSS, referred to their attempt to align the current practices to the CCSS. As one of the teachers stated,

> "*There was no great curriculum in place before the CCSS but I guess it's better than it was before; however, the amount of work in form of assessments and supplementing curriculum makes the current practices very difficult.*"

Assessment Material and Change

Regarding the use of resources used for assessment purposes, 68.4% of teachers reported not having any differences in the materials used for assessment purposes after the standards. The majority of teacher who did report changes in resources used for assessment purpose mentioned

the inclusion of rubrics to assess students' writing performance. The origin of those rubrics varied. Some teachers reported using 6+1 rubrics in the past instead of district-developed rubrics after CCSS and other reported using 6+1 rubrics after CCSS. The way in which teachers were supposed to utilize the new rubrics seemed to be unclear to some of them. One stated, "*To wrap my mind around the new assessment rubrics I try to use them to score many writing samples throughout the year*." However, teachers reported that they had not made any changes in the use of writing assessments.

Students' Collaboration and Use of Word Processors

Teachers were asked to report the frequency that their students collaborated during the writing process, on their use of a word processor, and on their completion of prewriting activities (See Table 1). The distribution of responses indicated a higher frequency on the completion of collaborative tasks several times a month and several times a year. Prewriting activities were completed at a higher frequency several times a month and weekly. However, teachers reported at a higher frequency that students never completed writing assignments on the word processor (51.3%).

Change on students' application of specific approaches. No change was evident on teachers' responses. Regarding change that occurred after the application of the CCSS, the majority of teachers reported that there were no changes on the frequency of collaboration tasks, of prewriting tasks, and of the use of the word processor (69.2%, 71.8%, and 53.8% respectively).

Table 1

Students' Applications: Collaboration, Word Processing, and Prewriting

Strategies	Never (%)	Several Times a year (%)	Monthly (%)	Several times a month (%)	Weekly (%)	Several times a week (%)	Daily (%)
Collaboration in planning, drafting, revising and editing	12.8	23.1	12.8	23.1	12.8	7.7	7.7
Use of Word processor	51.3	25.6	2.6	7.7	7.7	5.1	0
Prewriting activity	5.1	12.8	17.9	25.6	23.1	10.3	5.1

n = 39

Instructional Practices

Teachers were also asked to report the time allotted on instructional practices (See Table 2). Their responses across the different practices showed a lot of variability for the majority of questions. Specifically, the use of the writing process approach was reported several times a year with 23.1%, and weekly with 17.9%. Also, a relatively large percentage of teachers used direct methods to teach grammar skills (23.1% weekly and 28.2% daily); however, 20.5% of teachers did not ever teach sentence combining strategies. Only 25.6% taught such strategies several times a month. Students were also taught how to self-evaluate their work several times a month (28.2%) while 10.3% never taught students to do so.

Finally, a relatively large percentage of teachers indicated that they did not write while their students wrote (28.2%) and 20.5% that they did not teach writing as a tool for learning content while inquiry was taught by almost half of the participants several times a year (51.3%).

Table 2

Instructional Practices

Strategies	Never (%)	Several Times a year (%)	Monthly (%)	Several times a month (%)	Weekly (%)	Several times a week (%)	Daily (%)
Process approach	5.1	23.1	10.3	15.4	17.9	15.4	12.8
Sentence Combining	20.5	17.9	15.4	25.6	12.8	2.6	5.1
Inquiry	12.8	51.3	7.7	10.3	12.8	0	5.1
Study and imitate models	10.3	25.6	12.8	17.9	15.4	10.3	7.7
Writing of paragraphs	17.9	10.8	10.3	7.7	17.9	15.4	0
Students assess their own writing performance	10.3	17.9	10.3	28.2	17.9	5.1	10.3
Writing as a tool for learning content	20.5	7.7	5.1	23.1	17.9	12.8	12.8
Use of direct instructional methods to teach basic writing skills	2.6	7.7	12.8	10.3	15.4	23.1	28.2
Write in class while students' write	28.2	15.4	5.1	12.8	10.3	15.4	12.8

n = 39

Change on writing practices. Regarding change, the majority of responses indicated that there was no change after the implementation of the CCSS on their writing practices (See Table 3). Further, when teachers were asked if their practices in general had changed after the CCSS 64.1% responded negatively. Teachers who shared that there were changes referred to changes on expectations and on specific practices. Teachers stated that there was a stronger focus on reading and writing connections and an emphasis on content-area writing. As one teacher said,

> "*We used to teach writing in parts starting with sentence formation and paragraphs. Now, we just tell them to write and have to 'teach in' to the ones who need more support. As a result, they all write a lot, but all struggle with grammar conventions and proper sentence formation*.

Table 3

Strategies	I do not teach this (%)	Less time (%)	No Change (%)	More time (%)	*Change on Instructional Practices*
Process approach	5.2	15.4	66.7	12.8	
Sentence Combining	10.3	10.3	61.5	17.9	
Inquiry	2.6	12.8	59.0	25.6	
Study and imitate models	0	20.5	64.1	15.4	
Writing of paragraphs	12.9	10.3	66.7	10.3	
Students assess their own writing performance	2.6	7.7	69.2	20.5	
Writing as a tool for learning content	5.1	10.3	69.2	15.4	
Use of direct instructional methods to teach basic writing skills	0	5.1	71.8	23.1	
Write in class while students' write	18	5.1	66.7	10.3	

n = 39

Instruction on Skills

Teachers were asked to report the frequency of teaching spelling, handwriting, and typing (See Table 4 for the number of teachers at each frequency level). The majority of responses indicated that a large percentage of teachers worked on spelling weekly (35.9%), while a considerable percentage of teachers never taught handwriting and typing (28.2 and 74.4%, respectively).

Table 4

Instruction on Skills

Tasks	Never (%)	Several Times a year (%)	Monthly (%)	Several times a month (%)	Weekly (%)	Several times a week (%)	Daily (%)
Spelling	10.3	0	0	2.6	35.9	10.3	41
Handwriting	28.2	10.3	5.1	15.4	15.4	12.8	12.8
Typing	74.4	5.1	2.6	2.6	15.4	0	0

n = 39

Change on instruction of skills. The majority of teachers did not report any changes after the CCSS on the instruction of those specific skills (65.8%, 51.3%, 94.7%, respectively). The most surprising finding on teachers' responses referred to the teaching of typing skills. A large percentage of teachers did not teach typing prior or after the CCSS.

Instructional Tasks

Regarding working on specific writing activities (See Table 5) teachers reported at a higher frequency not to ever teach specific tasks such as journal writing (20.5%), plays (66.7%), autobiography (69.2%), biography (51.3%), copying of text (53.8%), writing newspaper articles (65.85), email (92.1%) and step-by-step instructions (42.1%). Expository texts were reported to be taught several times across a year as well as fiction and reports (e.g., research reports with 66.7%). Persuasive writing was taught at a high frequency across the year and several times a month, but it was not a practice that teachers reported working on weekly, or several times a week or daily. Contrary to this, story writing and personal narrative had a wider distribution across time.

Table 5

Instructional Tasks

Tasks	Never (%)	Several Times a year (%)	Monthly (%)	Several times a month (%)	Weekly (%)	Several times a week (%)	Daily (%)
Story writing	5.1	51.3	12.8	10.3	5.1	10.3	5.1
Personal narratives	2.6	50.0	12.8	7.7	5.1	7.7	5.1
Journal writing	20.5	5.1	5.1	17.9	12.8	12.8	25.6
Poetry	25.6	53.8	10.3	7.7	0	0	2.6
lists	23.7	21.1	2.6	26.3	13.2	0	13.2
Book reports	35.9	48.7	10.3	0	2.6	2.6	0
Books	28.2	48.7	10.3	0	0	5.1	7.7
Research reports	25.6	66.7	5.1	2.6	0	0	0
Plays	66.7	25.6	2.6	2.6	0	2.6	0
worksheets	25.6	12.8	7.7	15.4	12.8	12.8	12.8
Copying text	53.8	2.6	12.8	12.8	7.7	5.1	5.1
Writing letters	15.4	56.4	10.3	10.3	7.7	0	0
Autobiography	69.2	23.1	2.6	5.1	0	0	0
Biography	51.3	38.5	0	10.3	0	0	0
Persuasive writing	7.9	76.3	5.3	10.5	0	0	0
Informational writing	0	70.3	10.8	18.9	0	0	0
Descriptive writing	7.9	52.6	13.2	21.1	2.6	0	2.6
Summary writing	10.5	26.3	5.3	26.3	23.7	2.6	5.3
Writing in response to material read	0	7.9	0	21.1	26.3	26.3	18.4
Writing newspaper articles	65.8	18.4	5.3	5.3	2.6	2.6	0
Note taking	34.2	18.4	10.5	21.1	7.9	5.3	2.6
Cause effect writing	26.3	26.3	10.5	31.6	2.6	0	2.6
Compare and Contrast	13.2	34.2	13.2	28.9	7.9	0	2.6
Problem-Solution	13.2	36.8	10.5	28.9	7.9	0	2.6
Email	92.1	7.9	0	0	0	0	0
Step-by-step instructions	42.1	39.5	7.9	5.3	5.3	0	0
Short responses	7.9	5.3	13.2	13.2	18.4	26.3	15.8
Drawing and labeling	18.4	28.9	7.9	26.3	2.6	7.9	7.9

Change on instructional tasks. Teachers responses (See Table 6) did not indicate a

change in the frequency of instruction after the CCSS.

Table 6

Change on Instructional Tasks

Tasks	I do not teach this (%)	Less time (%)	Same Time (%)	More time (%)
Story writing	7.7	5.1	79.5	7.7
Personal narratives	0	12.8	69.2	17.9
Journal writing	12.8	7.7	69.2	10.3
Poetry	7.7	23.1	61.5	7.7
lists	12.8	2.6	82.1	2.6
Book reports	20.5	2.6	64.1	12.8
Books	17.9	7.7	71.8	2.6
Research reports	15.4	10.3	64.1	10.3
Plays	23.1	2.6	64.1	10.3
worksheets	10.2	12.8	74.4	2.6
Copying text	23.1	2.6	71.8	2.6
Writing letters	10.3	7.7	76.9	5.1
Autobiography	35.9	2.6	61.5	0
Biography	35.9	0	56.4	7.7
Persuasive writing	2.6	12.8	61.5	23.1
Informational writing	0	10.5	63.2	26.3
Descriptive writing	0	7.7	76.9	15.4
Summary writing	2.6	10.3	66.7	20.5
Writing in response to material read	2.6	10.3	61.5	25.6
Writing newspaper articles	33.3	0	64.1	2.6
Note taking	18	5.1	71.8	5.1
Cause effect writing	10.3	10.3	76.9	2.6
Compare and Contrast	10.3	5.1	76.9	7.7
Problem-Solution	7.7	7.7	82.1	2.6
Email	46.1	0	51.3	2.6
Step-by-step instructions	17.9	7.7	74.4	0

Short responses	2.6	7.7	66.7	23.1
Drawing and labeling	10.3	17.9	71.8	0

Closer Examination of Practices via Interviews

Overall, all teachers reported having adequate technological resources for teaching. Examples of such resources were an Interactive smartboard, Elmo, Promethean board, Mimo, Optiplates, Activotes. However, teachers explained that those were primarily used as presentation tools and did not utilize those in writing. Two of the teachers said that they used the Smartboard as part of the Morning message. Only one teacher said that she would use the board to type her work,

> "*I would type my rough draft and you know make mistakes on purpose [and] leave them there. They don't know how to research they don't know how to find good research and it was nice because I could put files right on the shared drive with kid-safe websites or if we were making a comic strip I could put the link right there and so I would show them all of that on my board. Then I use the ELMO once we got into edit and revise to show them student samples. I would pick some of the kids that I knew would need the support more. And then I would do my own, [and I would say,] even I have mistakes so don't rush through this.*"

When participants were asked how they used this technology to teach writing, they seemed uncertain in their responses. As one teacher shared,

> "*I don't feel like there is anything available or I'm not aware of how to use it, or what to use. So it is combination of those things. I'm sure there are things available that I am not aware of maybe.*

In general, though, teachers seemed to use technology to present information to students. One of the third grade teacher explained that she would use the Smartboard to show editing and

revising. She also said that she asked students to work on editing and revising and to give them some practice in preparation for the new assessment that required students to work on a computer. However, this same teacher explained that for security purposes, the computers were not available to students for a while and they were not able to practice from several months in the spring,

> "*The real big problem we have ran into is all the computers needed to be locked because when they got them ready for PARCC[and] the firewalls had to be disabled. So then they were afraid that kids could access like inappropriate information. So from February 1, until basically the last week of May the computers were unavailable*"

All teachers had from one to five computers in their classrooms for students to use. Only one teacher had only one computer and only one other had five. The rest had two to three. However, not all had access to computers for all their students. Two third grade teachers reported having laptop carts available. One of them shared that the school had 4 laptop carts. The other teacher explained that the school only had one cart that was expected to be shared across the K-5 classrooms and teachers. This teacher shared that she used that cart extensively during the year, and she had asked her students to type their work. The third third-grade teacher teacher explained that there was a computer lab available, but she did not have time to use it and take her students there to write or to practice writing. The Kindergarten teachers only reported having two to four computers in their classrooms for their students to use.

Teachers overall acknowledged the need for students to work on computers. One of the third-grade teachers shared,

"Well if we had more [computers] I think the kids love working on the computer. I think it would definitely help with motivation, definitely help with motivation. I think there is a lot out there, websites that use practice, and practicing those skills could definitely be enhanced with the technology."

Four of the teachers explained that they were not able to use the computers on a daily basis because not every student always had access to computers and in some cases students' typing skills were low. Considering the possibilities for active manipulation of text that technology (such as the Promethean Board or even the Elmo) provide, teachers only used the available technology to present the information to students or to demonstrate. However, this technology was not used as a means to manipulate information and allow students to coconstruct information.

Discussion

The National Commission on Writing in American Schools and Colleges (2003) thirteen years ago called for a policy that would,

"aim to double the amount of time most students spend writing, require a writing plan in every school district, insist that writing be taught in all subjects and at all grade levels, and require successful completion of a course in writing theory and practice as a condition of teacher licensing." (National Commission on Writing in American Schools and Colleges, 2003, p. 6).

The Common Core Standards for writing indicated a promising change due to their emphasis in writing and due to their call for writing across the curriculum. However, the findings of this survey suggest that very little has actually changed. For example, in line with previous research (Cutler & Graham, 2008; Cutler & Graham, 2010; Graham, Harris, Fink-Chozampa,

and MacArthur, 2003) that the majority of teachers in this study spent 30 minutes a day in the teaching of writing and students wrote for only 30 minutes daily. Writing still seems to not have its own recognition within the English Language Arts block and teachers struggle to find time to teach it.

Further, research recommended that teachers become a part of an engaged community of writers in their classrooms (Cutler & Graham, 2008; Graham, et al., 2012). This survey indicates that teachers do not appear to engage in the writing process alongside of their students. By participating as members of the writing community, teachers can model writing processes, knowledge, and self-regulation strategies which and can then, in turn, support their students' development as writers. In addition, as teachers enter the writing community, students begin to see them as participants rather than solely evaluators.

In this survey, teachers also reported not to teach students how to type and not to spend much time using word processors. Unfortunately, teachers reported that they did not have adequate resources to allow students to use technology to facilitate the writing process. Again, the National Commission on Writing in American Schools and Colleges (2003) had explained the necessity to incorporate technology in the writing curriculum even though it had identified challenges. They stated, "*there is no doubt that the resources for technology available to schools and colleges-including hardware, software, and teacher development- are often inadequate and frequently unequal*" (p. 23). The few teachers who were interviewed indicated that they had technology to use as a presentation tool, but that their schools did not have enough computers or other barriers that prevented all students from having access to technology for writing. This is a finding with great policy implications. Students' assessments are computerized (e.g., National Assessment for Education Progress (NAEP, 2011); Partnership for Assessment of Reading for

College and Careers (PARCC)) and policy makers should consider that this may confound student results. If no typing skills are taught, it is not clear how it is expected for students to adequately perform on tasks that require them to type responses. Therefore, such assessments may not reflect the students' writing ability but only their keyboarding skills.

The instruction on grammar and lower-level skills was a concern for elementary teachers and teachers in this study indicate teaching it on a daily or weekly basis. In fact, direct instruction in basic writing skills had the highest frequency at the daily and several times a week levels. This was above and beyond any other writing instructional practice listed in the survey. Sentence combining is an approach that has yielded statistically significant results (Graham & Perin, 2007; Saddler 2005; Saddler & Preschern, 2007), but instructionally it is not present in classrooms. The participants in this survey did not refer to the use of sentence combining as a means to teach grammar.   In addition, we wonder whether teachers' schemas for teaching writing are primarily focused on teaching grammar since this was a practice reported with great frequency. Teacher preparation and professional development programs should target evidence-based methods of grammar instruction and also clearly articulate the role of grammar in the larger writing process.

Teachers also reported challenges with differentiation of instruction and assessment. Teachers used one-on-one writing conferences as a main way of differentiating instruction, but little research about the effectiveness of writing conferences exists. Research could examine the effects of conferences on students' abilities not only to make immediate revisions but also transfer this newly acquired knowledge to other settings and tasks. Teachers reported using rubrics to assess student writing, but still they had difficulty understanding how to use these. Clearly, teachers need an assessment system that is accompanied by ongoing professional

development so that they can successfully implement and use these tools to drive their

instruction to meet individual student needs.

Teachers also reported that they created their own materials or borrowed the work of

other teachers. The reason they did this was because they either lacked a writing curriculum or

because they did not have training on how to implement the curriculum their school purchased.

Even though professional collaboration is necessary for the progression of a profession, the

quality of what is shared and what is created was unknown. Considering that teachers report

being ill-prepared to teach writing (Cutler & Graham, 2008; Gilbert & Graham, 2011) and that

teachers of this sample also shared that they were not prepared to teach writing upon their

graduation (Philippakos, & Moore, in press), the resources may not be as effective or as

connected to research recommendations. Again, teachers deserve more support in developing

and implementing a writing curriculum especially if the expectations for writing have

significantly increased.

Limitations and Future Research

There are several limitations to this work that should be addressed. First, the sample is

very small and generalizations cannot be made. Second, the analysis would have been more

informative if it had reported findings for two bands of teachers: K-2 and 3-5; however, the

sample was too small for this type of analysis. Third, the survey did not include questions on

reading and writing connections or content area writing. This is an important limitation that

could lead to revisions of the current survey. The CCSS set a clear expectation for writing across

the curriculum; therefore, this is an important question that needs to be answered.

Nevertheless, this is a pilot that can inform the survey and lead to revisions. Revisions to

the current study could lead to a larger scale examination of teachers' current practices and their

perspectives on changes after the implementation of the CCSS. It is important to ask the

question, "*What are teachers' practices after the CCSS?*" Also, given the CCSS focus on writing

within the content areas, it is important to examine how and if teachers incorporate writing

across the curriculum. This survey focused solely on writing within the ELA classroom. In

addition, we recognize the limitation of self-report. Future research could examine (a) teachers'

responses to a survey that investigates their practices, (b) interviews of participants in order to

corroborate their responses to the survey, and (c) also sample completed writing assignments.

That way there would be a possibility to examine teachers' practices and students' performance

without costly direct observations. Finally, we acknowledge that teacher leaders play a role in

school change and improvement. This study targeted teachers. It is also important to understand

teacher leaders' perspectives in promoting change in response to policy initiatives.

This study took place across two states and University systems. The findings are limited

to the settings and may reflect specific policies and decisions that were made to support (or not)

teachers in the implementation of the CCSS for writing. It would be interesting in future work to

also examine the specific policies and supports at a state or county/district level that were

provided to support teachers in their writing instruction.

Closing Thoughts

We would like to close with the first lines of the 2003 Executive summary of the neglected R

report,

> "*American education will never realize its potential as an engine of opportunity and*
>
> *economic growth until a writing revolution puts language and communication in their*
>
> *proper place in the classroom*" (National Commission on Writing in American Schools
>
> and Colleges, 2003, p. 6).

It is unfortunate that this revolution may still not be in place or perhaps there is more work that needs to be done in the American classrooms in order to manage a writing revolution. Writing should be "In" the ELA schedule and should not need to compete for its place in students' learning and teachers' literacy instruction.

References

Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition.* Hillsdale, NJ:

    Lawrence Erlbaum.

Bruning, R., & Horn, C. (2000). Developing motivation to write. Educational Psychologist,

    35(1), 25-37.

Cutler, L., & Graham, S. (2008). Primary grade writing instruction: A national survey. *Journal of*

    Educational Psychology, 100, 907-919.

Graham, S., & Perin, D. (2007). What we know, what we still need to know: Teaching

    adolescents to write. *Scientific Studies of Reading, 11*, 313-335.

Graham, S., Harris, K. R., Fink-Chorzempa, B., & MacArthur, C. (2003). Primary grade teachers'

    instructional adaptations for struggling writers: A national survey. *Journal of Educational*

    Psychology, 95(2), 279-292.

Hayes, J.R., & Flower, L. (1980). Identifying the organization of writing processes. In L. Gregg

    & E.R. Steinberg (Eds.), *Cognitive processes in writing* (pp. 3-30). Hillsdale, NJ:

    Lawrence Erlbaum.

Hayes, J. R., & Flower, L. S. (1986). Writing research and the writer. *American Psychologist,*

    41, 1106-1113.

Hayes, J. R., Flower, L., Schriver, K.A., Stratman, J., & Carey, L. (1987). Cognitive processes

    in revision. In S. Rosenberg (Ed.), *Advances in applied psycholinguistics: Vol. II.*

    Reading, writing, and language processing (pp. 176-240). New York: Cambridge

    University Press.

Kiuhara, S. A., Graham, S., & Hawken, L. S. (2009). Teaching writing to high school students:

A national survey. Journal of Educational Psychology, 101, 136-160.

McCarthey, S. J. & Geoghegan, C. M. (2016). The role of professional development for

enhancing writing instruction. In MacArthur, C., Graham, & Fitzgerald (Eds).),

Handbook of writing research (2nd Ed.), (pp. 330-348). New York: Guilford Press.

McCutchen, D. (2006). Cognitive factors in the development of children's writing. In C.A.

MacArthur, S. Graham, & J. Fitzgerald (Eds.) *Handbook of writing research* (pp.

115-131). New York, NY: Guilford Press.

McCutchen, D. (2000). Knowledge, processing, and working memory: Implications for a theory

of writing. *Educational Psychologist, 35*, 13-23.

National Writing Project. (2010). Research Brief. Berkeley, CA: National Writing Project.

Nwp@nwp.org.

Nystrand, M. (2006). The social and historical context for writing research. In C.A. MacArthur,

S.Graham, & J. Fitzgerald (Eds.), *Handbook of writing research*. (pp. 11-27). New York:

Guilford Press.

Philippakos, Z. A. & Moore, N. (in press). The Literacy Coach's Role in Supporting Teachers'

Implementation of the Common Core State Standards in Writing. Chapter to appear in

Literacy Program Evaluation and Development Initiatives for P-12 Teaching, Editor

Salika Lawrence.

Prior, P. (2006). A sociocultural theory of writing. In C.A. MacArthur, S.Graham, & J.

Fitzgerald (Eds.), *Handbook of writing research* (pp. 54-66). New York: Guilford Press.

Pritchard, R.J. & Honeycutt, R.L. (2006). The process approach to writing instruction:

examining its effectiveness. In C.A. MacArthur, S. Graham, & J. Fitzgerald (Eds.),

Handbook of writing research (pp. 275-290). New York: Guilford Press.

Purcell, K., Heaps, A., Buchanan, J., & Friedrich, L. (2013). *How teachers are using technology at home and in their classrooms*. The Pew Center: Pew Internet and American Life Project.

Saddler, B (2005). Sentence combining: A sentence-level writing intervention. The Reading Teacher, 58, 468-471.

Saddler, B. & Preschern, J. (2007). Improving sentence writing ability through sentence-combining practice. Teaching Exceptional Children, 39, 3, 6-11.

Suwantarathip, O., & Wichadee, S. (2014). The effects of collaborative writing activity using Google Docs on students' writing abilities. *The Turkish Journal of Online Education, 13*(2), 148-156.

Stein, M. K., & Wang, M. C. (1988). Teacher Development and School Improvement: The Process of Teacher Change. Teaching and Teacher Education, 4, 171-187.

Zhou, W., Simpson, E., & Domizi, D. P. (2012). Google Docs in and out-of-class collaborative writing activity. *International Journal of Teaching and Learning in Higher Education, 24*(3), 359-375.

Weiss, R. S. (1995). *Learning from strangers: The art and method of qualitative interview studies*. New York: Free Press.

Conversations with and About Picture Books: Developing Insiders' Perspectives

Yong Yu and Robert T. Ackland

State University of New York, Plattsburgh

A Conversation Starts

Two literacy education professors see each other in the hallway.

Bob: Do you have a few minutes? I found this picture book at Goodwill. It's a story about a Chinese girl and her family. I want to know how accurate and authentic the book is.

Yong: *Ma Jian and the Orange Ants* (Porte & Cannon, 2000)? I've never read it before. [She starts reading.] The illustrations look authentic to me. The characters look Chinese, and they all look different—their faces have unique individual features. [She reads more and points at page 26.] Look at this! [She reads the text out loud:] "Imagine that family's rejoicing! Jiang and her mother and her father and her brothers could hardly stop bowing." The father was bowing to his daughter? That seems very odd, particularly at the time when the story happened.

Bob: Don't Chinese people bow to each other?

Yong: Yes. But typically to show respect—the younger to older people, students to teacher, lower to higher authority, service staff to customers, or among colleagues. Parents wouldn't bow to their children.

Bob: Wow! I wonder if the author knew this.

Yong: Good question! [She searches for information about the author and illustrator in the book.] I wonder how much research the author and illustrator did about Chinese culture when they were creating this book.

Bob: Maybe they didn't know about the customs of bowing.

Yong: Maybe not. It's different in different cultures. I think that in Japan, parents might bow to their children. We'd have to look into that further to find out.

Bob: This reminds me of the book called *Basho and the Fox* (Myers & Han, 2000). It's a beautiful introduction to the haiku of the 17th century poet Matsuo Basho. I showed it to a friend who knows a great deal about Japanese culture and she explained that she is disturbed by the illustrations because some of them show Basho wearing a kimono that is wrapped right-over-left. She told me, "That is the way bodies are prepared at death. In Japan, no living person would ever wear a kimono that way."

Yong: Interesting.

Bob: I think that through conversations like this we can find out how to help young readers understand some of the complexities of culture. You know, when I was studying in France, I often heard people say, "*Je l'ignore.*" Literally, it means, "I ignore that." But it is not a negative thing, and it doesn't indicate any volition to maintain ignorance. It's more like saying, in English, "I'm unaware of that." It draws attention to the fact that an individual

person can't know everything. It marks places where we can expand our knowledge. The books that teachers select for use in their classrooms may have inaccurate information that is provided by authors, illustrators, or editors. We can still use them—we just need to point out some of the places where they could be improved in regard to the presentation of culture.

Yong: Yes. We need to have conversations that help us understand more about an insider's view.

Bob: I really like the book *The Librarian of Basra* (Winter, 2005). I took it to a TESOL conference in Dubai and showed it to a group of Iraqi educators. Here's what they told me: "This book says nothing about her family. Safeguarding her family in a time of war, that would have been her first priority. Not books. Not objects." Wow! That thought never crossed my mind.

This is a portion of one of the conversations about children's books that happened between the authors, who are literacy professors in a teacher education program at a public university in northern New York near the border with Québec. Oftentimes, these conversations revolve around the importance of having an insider's view, and the challenge of how to access insiders who can assist with the examination of books that claim to represent a culture. We believe that insiders' perspectives are not gifts given at birth, defined by biology. A second-plus-generation immigrant can be born as a member of an ethnic cultural community, but is not able to speak the language, or exhibit familiarity with accepted cultural values. This may also happen when an individual has been adopted from a country outside the United States.

Insiders' Perspectives

Mingshui Cai (2003) writes that an insider's perspective is "a special sense of reality . . . not inherited through genes but acquired through direct and indirect experiences" (p. 172). While a direct cultural experience, (e.g., living within a cultural community), is not always an option for teachers and teacher candidates, they can develop an insider's perspective through reading books written by authors who are recognized to have cultural insiders' perspectives, or engaging in critical conversation with such people in the school or local community.

Yong brought this particular quotation from Mingshui Cai (2003) to Bob's attention during another conversation.

Yong: I think this idea is very valuable.

Bob: I like the quote. And I like the name, now that you have written it down for me. With my L1 abilities of English, I would pronounce this as /*ming shwee keye*/. When I realize that is not a common American name, I am assuming, or my conjecture is, that individual is perhaps Chinese. But I don't know because *Cai* is a name I never encountered. What is the last name if I want to refer to this person using just the last name?

Yong: His last name is Cai. [Yong then pronounces the consonant with a /*ts-k*/ sound followed by a long "i" sound /*eye*/ (or, using the International Phonetic Alphabet: /*ai*/).]

Bob: Let me try to say that name. [Bob tries. He and Yong then both laugh.]

Yong: What's really cool is this: His first name, Mingshui, means bright, clear water. He probably comes from southern China, a place where there is a lot of water.

Bob: This totally blows my mind! You can see somebody's name and know what it means! In my world, his name might be Philip Schumacher. Philip means absolutely nothing other than Philip in my mind. But due to his family name, maybe he is (or one of his ancestors was) a shoe maker. Or if his name is Cooper, maybe his ancestors were barrel makers. But you were able to point out that it's "really cool" that Mingshui has that name because he is writing things to enlighten people. Brightwater is a very good name to have!

Yong: The problem is, I only have access here to the way his name is represented using English letters (pin-yin), rather than Chinese characters. Mingshui could be several other words that have the same written representation in English, like homophones. So I don't know for sure. I guess it is 明水. [Yong writes those characters on a scrap of paper on her desk. Bob looks on, astounded.] If so, I bet he is from the southern part of China, where there is a lot of water.

Developing Cultural Knowledge

Conversations about books can not only help develop cultural knowledge directly related to the content of a book, but also knowledge beyond it. The following conversation began with a book, but expanded to some fundamental values in Chinese culture.

Bob: Picture books help us gather our thoughts regarding cultural aspects. I remember the presentation you did for students in one of my classes about the concept of culture as an iceberg (attributed to Hall, 1976). I really think that metaphor may be too limited. I think

that "culture" is more like the ridge of a mountain where we can climb and then look around to see what is there.

Yong: That's interesting. It reminds me of a saying in Chinese [Yong picks up a pencil and writes]:

山外有山。
"There are mountains beyond mountains."

Yong: The saying continues with [she writes],
人 外有人。
"There are people beyond people."

Yong: And then [Yong writes],
天外有天。
"There is sky beyond sky."

Bob: I notice that the character for mountain in the first phrase you wrote looks like a mountain. The character for sky looks a bit like the one for people, or person, or human. I'd suggest that we don't use the word "man" because of the gender reference.

Yong: The three characters are connected. Watch. [Yong takes out a new piece of paper and starts with symbol for "person" (人) at the bottom. Then, above that, she writes the symbol again and adds a line to make the character "great" (大). Then, above that, she writes the symbol for great and adds another line to make the character "sky" (天). The completed characters look like this:]

天
大
人

Bob: Wow! I would start at the top and write the other characters below.

Yong: Oh no! I would never put a person above the sky!

Bob: But I thought Chinese writing goes from top to bottom, or left to right when you are reading a book.

Yong: That's true. I never thought about it. Now that you asked, I think I might be influenced by *Dao De Jing*: "故道大，天大，地大，人亦大。 域中有四大，而人居其一焉。 人法地，地法天，天法道，道法自然。" (Laozi, 6th c. BCE/2011). I would translate this as: "Therefore, Dao is great; the Heaven is great; the Earth is great; and

Human is also great. In the universe there are four that are great. Human is one of them. Human comes from the Earth; Earth comes from Heaven; Heaven comes from Dao; and Dao comes from Nature." Only by putting Human at the bottom can I show the order of the universe.

Bob: That is fascinating! You see, insiders do not always think about the reasons behind doing things like this. They just do it. It is when an insider unpacks that both the insider and outsider become aware. It is a two-way street when this insider-outsider conversation takes place. It's a win-win situation. Now that I am aware of how this order of writing works, it has an impact on me. If I were trying to write this in Chinese now that you have explained this to me, I'd feel uncomfortable if I put "great" below "a person" and "sky" below those two.

Yong: You are right. I never thought about it!

Bob: You know, as you were writing the character for mountain （山）, I started to think that it's not the ridge that represents "culture"—it is the entire mountain.

Yong: Yes, there are peaks, summits, ridge lines, vistas, trails, valleys, flora and fauna, rivers, lakes, creeks, animals, people. These are all part of the mountain, part of culture.

Bob: And as you get closer to the mountain, when you are on a path, walking up a hillside, you see the trees and plants up close. You can distinguish different wildflowers. These are aspects of the mountain that you can't distinguish from afar. Just like culture. As you have an opportunity to travel to a different part of the world, or converse with someone from a different culture, you can distinguish features that you would miss otherwise.

Yong: Exactly!

Conversations about Picture Books

Similar to the aforementioned conversations, the following two excerpts from

conversations about books can show how such conversations can help interlocutors develop and

promote their understanding of each other's culture.

Legend of The Milky Way. Yong and Bob are having lunch together. The conversation drifts to

the topic that growing up in one specific culture probably provides us with a single-dimensional

culture perspective, which we might assume is the view of everyone else as well.

Yong: That reminds me of a book. Just a second. [She leaves and comes back with *Legend of The Milky Way* by Jeanne Lee (1982).] Have you read this book?

Bob: I don't think so. So it is about the legend of The Milky Way in China?

Yong: Yeah.

Bob: How is it different?

Yong: Well, first of all, can you tell me why this galaxy is called The Milky Way in the U.S?

Bob: I'm not sure. In French it is called "*La Voie lactée,*" which translates into the same thing that it's called in English. I just assumed that it was called that all over the world. I figured it got its name because there are so many stars in one place that it looks like a path of milk. My clearest view of this was when I was camping in the mountains—the Colorado Rockies—during a clear night. Someone told me that you can imagine that our galaxy is a giant Frisbee. When you look at it sideways, through the bulk of the disk, you get a sense of how many stars are up there. That perspective really put me in my place. What a big Frisbee we are riding on.

Yong: Are you familiar with any myths about this?

Bob: I think it might come from a Greek myth. [Bob looks for information online and then shares it with Yong.] Do you know about Heracles? He is Zeus' half-mortal son. Zeus brought Heracles home for Hera to breastfeed while she was sleeping. When Hera awoke, she quickly pushed Heracles away, which caused a few drops of milk to spill into the night sky. That is how the Milky Way got its name.

Yong: Good story! In Chinese, it is not called The Milky Way.

Bob: What? Are you kidding me?

Yong: No! It is called the Silver River. [Yong does not need to access any material online. She obviously knows the story she is about to tell.] According to Chinese folklore, a long time ago, there was an orphan who lived with his older brother and sister-in-law. Both treated him unkindly. His only friend was an old buffalo, who was Jin-Niu-Xing, God of Taurus, banished to the human world by the King of Heavens. The boy, therefore, was called Niu-Lang, the buffalo boy. With the help of the buffalo, Niu-Lang found the place where the princesses of the Heavens bathed on the earth. There he met Zhi-Nv, the Weaver Princess, who was the seventh daughter of the King of the Heavens. The two fell in love and married each other. Soon they had a daughter and a son. This violated the law of the Heavens. Zhi-Nv was brought back to the Heavens. Niu-Lang went after his wife, wearing a cloak made of the buffalo's skin and carrying the two children. Just as he was about to catch up with his wife, The Queen of the Heavens pulled a silver pin from her hair and drew a silver river across the heavens to separate the lovers. Their love moved the magpies in the heavens, which all came and formed a Que-Qiao, a bridge of magpie, over the river to help Niu-Lang and Zhi-Nv get together. The King and Queen of the Heavens were also moved. They finally agreed that Niu-Lang and Zhi-Nv could meet once a year on the bridge on the seventh day of the seventh month. That's how the Silver River got its name.

Bob: Wow! How fascinating! Now I have three-dimensional views: the scientific view of galaxy with billions of different stars, the Greek mythological view of Milky Way, and the traditional Chinese view of Silver River!

Yong: There you go! By the way, several adaptations were made in Lee's *Legend of the Milky Way*. It changed how Niu-Lang and Zhi-Nv met each other, omitted that they had two children, and replaced the magpies with blackbirds. I guess Que-Qiao would be called Hei-Niao-Qiao, Blackbird Bridge, instead!

Bob: Oh! Do you think these changes make the book inauthentic?

Yong: I do! In China, the sight of magpies is associated with a good omen, while blackbird is just the opposite. The word "Magpie Bridge" has been used figuratively to refer to anything that promotes love relationship. It has also been used for companies providing dating and/or wedding services, as well as qupai, the name of the tunes to which qu, a type of verse popular in Yuan Dynasty (1271-1368), is composed.

Lin Yi's Lantern: A Moon Festival Tale. Yong and Bob are talking about accuracy and

authenticity of multicultural children's books.

Yong: I used to think that multicultural children's books about food and festivals (you know, things that are visible parts of a culture) would not have serious problems regarding accuracy and authenticity. It wasn't until a year ago when I did a research project on children's books representing Chinese culture that I realized that this is not true.

Bob: What did you notice?

Yong: Sort of like what you mentioned about *Basho and the Fox*—illustrations that inaccurately and inconsistently depict the characters and settings. For example, look at this book about the Moon Festival [Yong pulls the book *Lin Yi's Lantern: A Moon Festival Tale* (Williams & Lacombe, 2009) from the shelf and passes it to Bob.]

Bob: [Starts to turn the pages.] The illustrations are beautiful!

Yong: [Smiles.] The review from *School Library Journal* posted at Amazon thought so too! But the illustrations are very, very confusing. On one page there was this boy in contemporary Chinese clothes and riding a bicycle, a transportation vehicle that did not become available to common Chinese people until after 1949. On the next page you will see other characters wearing clothes belonging to different historical periods in ancient China. Some women were wearing kimonos and holding umbrellas, as if they were in Japan!

Bob: So where and when was the story set?

Yong: I really can't tell! I think the author meant to set it in modern times because the note in the book mentioned that "it is estimated that over 300 million Chinese people ride a bicycle" (Williams & Lacombe, 2009, back matter). But that would be inconsistent with the way characters were depicted in the books.

Bob: Is information in the text or notes accurate?

Yong: Unfortunately, no. Look here. [She turns to page 5 and reads.] "'How much is two pounds of whole grain rice please?' Lin Yi asked the rice trader." Apparently the author did not know that *pound* was never used as a unit of measurement in China. And *whole grain rice*? Also, listen to this. [She turns to the back matter and reads aloud.] "Markets in small, rural towns in China are usually found in the town center along a wide, main street." *Town center* and *main street* are very foreign concepts to Chinese living in rural areas. I may be over-generalizing about this, but I've lived in rural areas and have taught in small towns. A market is never going to be on a main street! I can show you what a market in a small, rural town looks like. [She turns to her computer and types "Chinese rural market." She clicks on one of the images.] Here!

Bob: Look at that market! People are sitting on a curb with vegetables spread out on plastic tarps on the ground in front of them.

Yong: But not on a wide, main street! A market like this is usually located in a street where motor vehicles are not allowed to enter.

Bob: You would think authors do their research before they write about a particular culture.

Yong: They probably did, but maybe they couldn't find the right sources. Any Chinese would be able to point out the inaccuracies in both the text and illustrations. I think this is an ethical issue for writers—if they are writing about a culture they are not familiar with, then it is important to spend quality time learning about the culture, like Mingshui Cai (2003) said, through direct and/or indirect experiences. A book like this reinforces the stereotypes that Chinese are people wearing exotic clothes, eating exotic food, and celebrating exotic festivals!

Bob: Suppose I was a third-grade teacher, a white American male, and I got this book, or any multicultural children's book. How can I know if it represents the culture accurately and authentically?

Yong: Great question! The best way is to consult sources, multiple ones if possible, such as online book reviews, librarians, and people with insiders' views of the culture in the school as well as local community. I developed an evaluation checklist for selecting multicultural children's books in a previous article (Yu, 2017). It can provide a tool to examine multicultural children's books, or to know what question to ask when consulting a person who has an insider's perspectives.

Bob: I'll have to look at that checklist. Hey. I wonder if we can develop a presentation for the American Reading Forum conference that will take place in December, 2016.

Yong: Yes, let's do that!

Well, that's what we did. We decided to call it, "Conversations with and About Picture Books: Developing Insiders' Perspectives." One of the slides at that presentation looked like what you see below:

Recommendations for Developing Insiders' Perspectives

- Examine the classroom library to ensure that it includes books that are both mirrors (representing children in the class), windows (representing children from different cultural backgrounds), and sliding glass doors (giving us access to cultures we can walk into through our imagination) (Bishop, 1990/2015).

- When selecting books, use rating scales to measure literary quality as well as cultural authenticity (Yu, 2017).

- Consult local ethnic communities and multicultural resources for suggestions on what to include in a multicultural collection (Mei-Yu Lu, 1998).

- Read extensively in the literature (fiction and non-fiction) written by "insiders," those writing about their own culture and experiences (Bishop, 2003).

- Facilitate activities with books from multiple cultures in order to develop readers' abilities to critically examine texts for accuracy and authenticity.

- Develop empathy with insiders from different cultures.

- Embrace different worldviews and expand viewpoints in order to facilitate the attitude that "All people don't see the world the way I do."

- Acknowledge differences within countries and cultures (e.g., diversity of language and lifestyles within Asian cultures).

The task of finding people with insider views of a particular culture and initiating conversations with them about multicultural children's books may seem daunting to teachers and teacher candidates. We do not expect teachers in any part of the U.S. to be able to have a bookshelf in which there is one book for each culture, or to find people representing each culture to consult with. What we suggest is to start with the resources available in the community: students, colleagues, parents/guardians, and community members. We (Yong and Bob) work at a college located in a small town that is not diverse. Approximately 90 percent of the population is white (U.S. Census, 2010). Many of the students enrolled in our teacher education programs cannot recall reading one multicultural children's book in their youth. However, one of our partner schools has children who speak eight different languages at home other than English. In the past few years, professors and teacher candidates in our programs have interacted with children, colleagues, peers, and community members with diverse cultural backgrounds. The resources are there. It is up to us to reach out and include these resources in teaching and learning. As Edward Hall (1976) states, "Ethnic diversity can be a source of great strength and an invaluable asset, provided people can develop the desire to learn from each other (one of the principal ways of learning about oneself)" (p. 71).

References

Bishop, R. S. (2003). Multicultural literature for children: Making informed choices. In V. J.

    Harris (Ed.), *Teaching multicultural literature in grades K-8* (pp. 37-53). Norwood, MA:

    Christopher-Gordon.

Bishop, R. S. (2015). Mirrors, windows, and sliding glass doors. *Reading is Fundamental*

    https://www.psdschools.org/webfm/8559 (Original work published, 1990). See also

    https://www.youtube.com/watch?v=_AAu58SNSyc

Cai, M. (2003). Can we fly across cultural gaps on the wings of imagination? Ethnicity,

    experience, and cultural authenticity. In D. Fox & K. Short (Eds.), *Stories matter: The*

    complexity of cultural authenticity in children's literature (pp. 167-181). Urbana, IL:

    National Council of Teachers of English.

Hall, E. T. (1976). *Beyond culture*. New York, NY: Anchor Books/Doubleday.

Laozi. (2011). *Dao de jing* (Chinese version, annotated by Wang Bi). Shanghai, China:

    Zhonghua Book Co. (Original work published c. sixth century BCE)

Lu, M. (1998). *Multicultural children's literature in the elementary classroom* (Report No.

    RR93002011). Bloomington, IN: Office of Educational Research and Improvement, U.S.

    Department of Education. (ERIC Document Reproduction Service No. ED 423552)

U.S. Census. (2010). *Quick Facts.* Retrieved from

    https://www.census.gov/quickfacts/table/PST045216/3658574#headnote-js-a

Yu, Y. (2017). "But how do I know if it is authentic?" Examining picture books representing

    Chinese culture. In H. L. Schnackenberg & B. A. Burnell (Eds.), *Best practices for*

    education professionals (pp. 155-189). Waretown, NJ: Apple Academic Press.

Children's Books

Lee, J. (1982). *Legend of The Milky Way*. Austin, TX: Holt, Rinehart, and Winston.

Myers, T., & Han, O. S. (Illustrator). (2000). *Basho and the fox*. Tarrytown, NY: Marshall

    Cavendish.

Porte, B. A., & Cannon, A. (Illustrator). (2000). *Ma Jian and the orange ants*. New York, NY:

    Orchard Books.

Williams, B., & Lacombe, B. (Illustrator). (2009). *Lin Yi's lantern: A Moon Festival tale.*

    Cambridge, MA: Barefoot Books.

Winter, J. (2005). *The librarian of Basra: A true story from Iraq*. New York, NY: Harcourt.

Exploring Science in the Context of Middle School Comic Book Design

Jennifer Schellinger and George L. Boggs

Florida State University

Abstract

The *Next Generation Science Standards* and the *Common Core State Standards for English Language Arts* suggest that students need to be prepared for a specialize yet connected world by engaging in and developing understanding of disciplinary practices. This study explored how students make sense of and contextualize their understanding of science concepts in self-created tradebooks, specifically in the genre of comic books. We asked middle school students in an integrated International Bachelorette Comic Book Design class to produce a short comic book story that shared a concept from their favorite class in an engaging and entertaining way. We examine the work of three students who choose to incorporate science concepts into their comic book stories and use these findings to help inform our future work related to disciplinary practices across science and language arts.

Keywords: tradebooks; comic books; science education; literacy

The *Next Generation Science Standards* (NGSS) and the *Common Core State Standards* (CCSS) for English Language Arts (ELA) position students to engage in and develop disciplinary practices that prepared them for a specialized yet connected world. The NGSS, present science as it is practiced through an interconnection of core ideas, crosscutting concepts, and scientific practices (NGSS Lead States, 2013). These interconnected ideas mirror many of those laid out in the CCSS for ELA which present literacies as the ability to read, write, listen, and use language for varying purposes (NGACBP & CCSSO, 2010).

The integration of tradebooks (e.g., picture books and narrative and non-narrative information books) has been suggested as a way to incorporate practices of reading, text comprehension, and writing imbedded within the discursive and discourse practices of science to increase students' learning (Pearson, Moje, & Greenleaf, 2010). Tradebooks provide advantages that include invitation and inspiration for student engagement (Ansberry & Morgan, 2010; Hapgood, Magnusson, & Sullivan & Palinscar, 2004); present new ideas in interesting ways (Romance and Vitale, 2006); represent concepts, facts, and patterns; model inquiry practices and science communication (Morrison & Young, 2008; Romance and Vitale, 2006); provide experience with phenomena unobtainable in the classroom (Morrison & Young, 2008; Romance and Vitale, 2006); and illustrate nature of science and support new ideas or help address misconceptions (Barber & Cervetti, 2009; Cervetti, Pearson, Bravo, & Barber, 2006; Casteel & Isom, 1994). Much of the literature that exists around tradebook and disciplinary learning relate to resources created for students but not by students. We approach this issue by examining student created tradebooks in a novel situation, that of a middle school comic book design class. Specifically, we were interested in how students incorporate science concepts in comic book

stories that they themselves create. The research we present here are preliminary findings from pilot research around the question

How do students make sense of and contextualize their understanding of science concepts in self-created tradebook, specifically in the genre of comic book stories?

Synergetic and Isomorphic Relationship Between Science and English Language Arts

Science and ELA are synergistic and isomorphic with both having very similar forms of strategy and cognitive processes (Casteel & Isom, 1994; Cervetti, Pearson et al., w006; Dyasi, 2006). Casteel and Isom (1994) represent the synergy between the disciplines as the structure of a tree. Literacy is the root system that is the base for growth and the branches signifying science knowledge, each nourishing the other and strengthening both disciplines. The roots are content information presented in writing and oral communication that feed the tree (i.e., facts, concepts, laws, and theories). Communication in the role of reading, writing, listening, speaking, and thinking connect the root system to the branches.

The isomorphic nature of both disciplines includes metacognitive approaches to help students plan, evaluate, and revise understandings; problem solving that help students structure reasoning about texts and experiences in a managed way (e.g., systematize, breakdown, and synthesize); and connection making by allowing students to build links between text, experience, and their own knowledge (Cervetti et al., 2006). Dyasi (2006) further develops this idea by presenting ELA literacy as an integral part of science inquiry highlighting the important role of communication (e.g., talking, reading, writing, and other kinds of presentation) in inquiry practices. In scientific inquiry, students communicate (e.g., talking and writing) about questions, explanations, plans, data, conclusions, and present relationships between evidence and explanations and findings. Additionally, both build upon prior knowledge, establishing purpose,

making predictions, drawing inferences and conclusions, and making and recognizing

relationships. A synergistic and isomorphic representation of literacy and science that allow

students to search for common processes and strategies when trying to understand content

knowledge rather than encapsulating each discipline into separate, unconnected knowledge

(Cervetti et al., 2006) sounds promising. Integrated approaches in which science and language

arts are explored in tandem have been suggest as a say to provide students' more time for science

while engaging in language arts (Casteel & Isom, 1994; Cervetti, Barber, Dorph, & Goldschmidt,

2012; Hodson, 2009; Pearson et al., 2010).

Integrated Approach to Language Arts and Science Instruction - Tradebooks

An integrated approach builds on the relationship that children have with expressive types of

literature, such as tradebooks, that help them learn in ways that may be more interesting and less

intimidating to them than traditional science textbooks (Casteel & Isom, 1994; Hodson, 2009).

Integrated instructional approaches incorporate language arts practices of reading, text

comprehension, and writing imbedded within scientific inquiry activities emphasizing the

practices of science (e.g., questioning, searching for information, etc.) and collaborative group

work with attentions to personal motivations (interest and self-efficacy) to increase students'

science and language arts learning (Pearson et al., 2010).

We draw upon the work of Romance and Vitale (1992, 2001) and Vitale and Romance

(2011) to illustrate an integrated approach. In their early work, Romance and Vitale (1992)

studied seven demographically comparable fourth grade classes set in a large urban region of

Florida. They were interested in determining if in-depth daily science teaching which

incorporated applied language arts objectives with science-content based reading (using

tradebooks including science print materials and a science textbook), science process skills, and

inquiry activities could increase student knowledge in both disciplines and influence the affect (attitude and self-confidence) of students. Three of the seven classes were considered treatment groups (N=51 students) in which instructional time allocated to reading was combined with in-depth science instruction allowing for two hours of teaching each day for a year. The control group (N=77 students) consisted of the 4 remaining classes and these students experienced normal instruction. This instruction consisted of 90 minutes of daily reading and language arts study and 30 minutes of daily science instruction using mostly pencil and paper activities and textbooks with occasional hands-on activities. Knowledge and affect changes were measured in students using the Iowa Test of Basic Skills reading (ITBSr), the Metropolitan Achievement Test science (MATS), and validated Likert-scale attitude and self-confidence instruments in science and reading at the end of the study. Students in the treatment group had significantly higher scores in reading and science, along with having more positive attitudes in both discipline areas and greater self-confidence in science compared to control groups. From these findings, the authors suggest that language arts and science instruction should be combined to promote conceptual change, especially in light of the increasing amount of time spent on language arts to ensure high test scores on state standardized tests. Additionally, the authors point out that textbooks, which can often be demonized as restricting student knowledge development by promoting "final form science" (Duschl, 1990, p. 10) can, instead, be used as an instructional tool in combination with other literature types and imbedded within science instruction that enhance the *doing* of science.

In an expanded five-year study, Romance and Vitale (2001) investigated second and fifth graders' (N=1200) understanding of science and language arts learning and student affect. Treatment group experienced the same science instruction from their 1992 study (e.g., concept-

focused teaching, inquiry activities, science process skills, and tradebooks related to science print text) and added concept mapping and journal writing to what they termed in-depth expanded applications of science (IDEAS). IDEAS combined language arts with science for two hour of daily instruction. The control group received business-as-usual treatment with separate language arts and science instruction. ITBSr, MATS, and the Likert-scale attitude and self-confidence instruments in science and reading were administered as assessment tools to measure learning gains. Like the 1992 study, treatment group participants in this study improved in science understanding, reading achievement, and in affect towards both disciplines when compared to control groups.

Vitale and Romance (2011) then moved on to study very young children (first and second graders, N=513) from four ethnically diverse elementary schools within a large school system in Florida. In this study, the authors were interested in determining how in-depth science instruction could enhance reading comprehension. Two of the schools served as the treatment groups and two served as controls. The authors developed the treatment based on IDEAS, discussed above, in which students took part in eight weeks of 45-minute instruction that used age-appropriate science reading materials, hands-on activities, concept mapping, and journaling to emphasize in-depth, cumulative learning of science concepts. This iteration of IDEAS, unlike the third to fifth grade version, did not replace language arts instruction, but was in addition to language arts instruction. The control group had no intervention outside of normal instruction. The ITB Reading Comprehensions and Science subtest were used as student learning measures at the end of the study. This study found that young children can learn from in-depth science instruction and this type of instruction can result in significantly higher basic and reading scores when compared to traditional elementary instruction (i.e., control group). Important to these findings is

the understanding that elementary aged children can handle complex science content, which contradicts some researchers who suggest that young children are not cognitively developed enough for this type of instruction at young ages (Appleton, 2007). The results of Vitale and Romance (2011) along with their earlier work (Romance & Vital, 1992, 2001) demonstrate that exposure to science and literacy concepts through integrated approaches can increase science knowledge and proficiency in reading.

Panacea or Problem

An integrated approach may seem like a panacea when students are faced with reduced opportunities to learn about and take part in science. However, there are many challenges that can impede integration from implementation to support.

In 2014, The National Research Council (NRC) conducted a workshop to help clarify confusion "among teachers and administrators about how to and who should implement the literacy in science standards of CCSS for ELA and how these standards work with the NGSS" (Feder & Rhodes, 2014, p. 2). The Board on Science Education had determined this to be a top priority based on the amount of questions and nature of the questions surrounding the two reform documents and the synergy between them. Throughout the workshop, the need for disciplinary approaches as a way to develop and use science, rather than a way to learn about science were highlighted and challenges to implementation were discussed. Such challenges included differences between the kinds of knowledge and skills needed to teach across disciplines, competing time and prioritization of educational goals within the timeframe allotted for school and how the standards are addresses across grades (which tend to be more prescriptive for later grades than earlier ones), the expertise of teachers that may not be well-matched with the new

standards, and the supports needed (e.g., instructional materials, curricula, professional development).

The authors of the workshop, as well as others (Pearson et al., 2010; Settlage & Southerland, 2012), warn against implementing a text-centric focus in which students read about science rather than engage in the practices of science (Pearson et al., 2010; Settlage & Southerland, 2012). An integrated approach that imbeds language arts literacy practices within an inquiry rich science curriculum may allow students to *do* science rather than just learn about science.

Supports need to be provided to make the process of integrated learning valuable (Pearson et al., 2010; Pappas, Varelas, Barry, & Rife 2004) and accessible to all students. Pappas et al. (2004) suggested that integration should be supported in a collaborative, dialogic manner so student can have opportunities to discuss ideas, comments, and questions as they move through the integrated process to ensure the social nature of the interactions are fostered (e.g., recognizing, interacting, and underscoring knowledge links). We build off of this idea and suggest that instead of reading from and learning about ideas from texts created by others, students should be provided opportunities to be the creators and designers of these resources. Further, we suggest that providing opportunities for students to create their own comic books in the middle school years may serve as a bridge between elementary school when tradebooks, such as narrative and informational books, are prominent components of classroom culture to high school where students are required to take up more informationally dense texts. We discuss our choice of the genre of comic books in more detail in the next section.

Through the Lens of Comic Books

"A comic is a sequence of images between which some kind of unity of meaning is created…. A comic can be considered a complex sign which means that a global coherence is sought in interpretation" (Magnussen, 2000, p. 198). Signs are an act of communication in which

the sign is not interpreted independently but, instead, within the context of other signs. The sign

in the genre of comic books is the panel. Panels interact with other panels to create external,

contextualized forms of communication in service towards conveying information or producing a

response in the viewer (Cohn, 2005; McCloud, 1993).

   Comic books constitute a unique language that bridges interrelated verbal (linearly arranged

strings of words) and visuals (codes and symbols) modes to offer a greater capacity to convey

thoughts in multilayered ways (Groensteen, 2008; Sousanis, 2012). Comic books offer a space

by which we can take in and create particular moments, while situating those moments within a

larger landscape of time and space. Groensteen (2008) describes images as utterances, which the

reader must ascribe meaning to, such that producers must choose how to "decoupage" (p. 90) or

cut out meaningful moments that serve as the "narrative tissue (the key moments of the action)"

(p. 90). This tissue is framed by the decisions the creator makes in terms of how they represent

ideas, such as zooming in or out or focusing on a particular part of an object. We liken this

framing to the creation of representations in science, which afford computational offloading (i.e.,

reduction of cognitive load), re-representation, graphical constraining of information,

abstraction, extension or generalization of knowledge from the known to the unknown

(Ainsworth, 2006, 2008).

   In the genre of comic books, however, the creator must consider each representation as it is

situated with textual elements, its placement of the representations within the network of panels

on a page and between pages, and even interactions between events. In fact, imagery in comic

books is not meant to be consumed individually, like a scientific representation might be, but

instead as a cohesive whole that rely on an interconnection of ideas, which Sousanis (2015)

describes as rhizomatic in nature (i.e., a plant that sends out roots and shoots as it spreads).

Panels, balloons, captions, and sound effects and the juxtaposed sequences of images within the landscape of the page serve as a hybrid between verbal and visual languages stemming from cultural and communicative interactions (Cohn, 2005). Smith, Hull, and Sousanis (2015) suggest that engagement in the multimodal nature of comic books provides a vantage point for meaning-making through the symbiotic collision between words and imagery. Sousanis (2012) describes this connection as the interweaving of verbal and visual that gives rise to transformation between lateral thinking and creativity.

Images are externalizations of our thoughts, a sort of conversation between ourselves and others (Sousanis, 2017) and are integral to meaning-making of the textual elements, unlike other types of writing in which text can stand apart from an illustration (Smith et al., 2015). Images are not additive, but inform the text used, and the text informs the images. Engagement with images and words in the format of a comic open of new avenues for understanding and connection making (Smith et al., 2015).

The process of making a comic is a negotiation between images and words and the structure of all the component parts. In this way, comics are less about skilled and technical drawing and more about the space and how the objects interact in that space to make meaning. In fact, some consider drawing a dialogic process in which thinking occurs with your hand through embodied and situated cognition (Kantrowitz, 2017). We drew upon these ideas of embodied and situative cognition when we asked students to create a comic book story that incorporated a disciplinary concept of their choosing.

Methods

Participants

We conducted pilot research in two middle school (integrated sixth, seventh, and eighth grades) International Bachelorette (IB) Comic Book Design classes in one K-8 private school in southeastern United States taught by the first author of this paper. We were interested in understanding how student created comic books can help students make sense of and contextualize their understanding of science content. Here we focus on the work of three students. One student, Charlyne (all names are pseudonyms), was an eighth-grade student who work independently to create a comic book about the conservation of matter. The other two students, Tom and Clancy, worked collaboratively to create a comic book about animal adaptations. Tom was a seventh-grade student and Clancy was a sixth-grade student. The project occurred across ten weeks (two class periods a week for 60 minutes each).

IB Comic Book Design

The IB Comic Book Design class is based on the IB design cycle which occurs across four interrelated sections including inquiring and analyzing, developing ideas, creating the solution, and evaluating. When students inquire and analyze, they are identifying and prioritizing research to explain and justify the need, they are analyzing a range of existing products, and they are summarizing the analysis of that research. In the case of this project, students were given the need (e.g., Produce a short comic book story that shares a concept from your favorite class in an engaging and entertaining way.) and were required to research existing products in the form of comic books or animations and, also, the concept they were incorporating in their story. When students are developing their ideas, they are developing a design brief, developing design ideas, presenting and justifying their final design, and developing and planning. In this project, when

students designed their ideas they were created thumbnails of their story, which included the sequential layout of panels for each page, the dialog that would go in each panel, and a rough sketch of the scene. The development of the thumbnails merged into the next part of the design cycle when students were constructing a logical plan. Students were required to create a 10-week schedule for the activities they needed to do to complete their comic. Students planned out their thumbnailing, penciling, inking, and lettering in this schedule. Additionally, when creating the solution students demonstrate technical skills, follow their plan, and justify any changes they made to their design. The last phase of the design cycle is the evaluation phase. In this phase, student design a testing method (e.g., questionnaire) to evaluate the success of their solution (e.g., comic book). They use the data collected from this evaluation to explain the success of their solution and to inform the improvements that might be needed. This phase, concludes by having students explain the impact of the solution. Students involved in this research were still completing the evaluation stage of the design cycle at the time of writing up this research.

At the beginning of the 10-week project, students were provided with a worksheet packet which scaffolded them through the inquiring and analyzing and developing ideas phases of the design cycle. In the packet the students were presented with the need of the project. They were asked to identify the concept that they would like to explore and to research that concept. Additionally, they were asked to research existing products (e.g., comic books or animations) and to identify why they chose these products and what aspects made these products successful. Space was provided for them to explain what they learned from this research. Students were also guided to provide a brief summary of their story and to create a 10-week schedule to complete their comic. Once they had completed the worksheet, students began thumbnailing their story, they shared their thumbnails with peers, and then they got to work on penciling (the part of the

process which took the longest amount of time), inking, and lettering their comics on full sized comic book paper.

Data and Analysis

The student's initial worksheet packets, their final comic books, and field notes taken by the teacher serve as data for this research. We analyzed this data to better understand how these students situated the concepts they were exploring within a comic book story. We provide a portrait of each student's comic book and identify themes from these data.

<div align="center">

Findings

</div>

Charlyne, Tom, and Clancy chose to incorporate science ideas into their comics and drew upon existing art and animation as the context to situate their work.

Charlyne's conservation of matter within the context of *We Bear Bears*

Charlyne choose to explore conservation of matter within the context of the animated sitcom of *We Bear Bears* (Figure 1). Charlyne situated conservation of matter within a story about Panda, one of the "We Bare Bears." The story was centered on Panda wanting to lose weight by drinking Botox water. In the story, Panda places a glass of Botox water out to drink, however, he leaves the glass for several hours (Figure 1, Page 1, Panels 9, 10, and 11). When he comes back to drink the Botox water there is less liquid than there had been originally. Panda accuses the other bears of drinking his Botox water, but when they convince him that they had not drunk the water. Panda must figure out what happened. To understand what happened to the Botox water, Panda researches online to investigate "how the air ate the water" (Figure 1, Page 2, Panel 1). Through this search, Charlyne is able to incorporate a definition about the conservation of mass which consists of "To conserve mass you must have a closed system. If a mass is not in a closed system then the liquid will slowly evaporate." She further elaborates on this definition by

illustrating an open and a closed system and by putting an x near the symbol for an open system and a check near the symbol for a closed system. In this way, Charlyne is situating words, symbols, and images in a networked interaction that combines the depiction and description that informs and enrich each other (Sousanis, 2012). A check represents a closed system. We see this symbol for a closed system in panel 3, page 2, which serves as Panda's solution to the problem of evaporation. Additionally, Charlyne situates her story as a problem to solve, which requires science to explain the problem. Charlyne had been observed by the first author exploring conservations of matter in her science class, so the concept was not new to her; however, she was able to situate it in a novel way.

Figure 1. Charlyne's two-page comic book story about conservation of mass.

Tom and Clancy's story of regeneration in the context of *SpongeBob SquarePants*

Tom and Clancy chose to explore ideas of animal adaptations in the form of sea star regeneration. They situated this concept in the world of *SpongeBob SquarePants*. In Figure 2, we include two of six pages of their story to highlight the most prominent connects to the idea of regeneration. In the story, the two students develop a plot in which Patrick (a sea star and friend of SpongeBob) is attacked by SpongeBob (the main character). In the first attack, Patrick is split in half and regenerates into two Patricks (Figure 1, Page 1, Panel 8). From this initial attack, Patrick continues to find himself in harm's way and is continually split resulting in many regenerated versions of Patrick in the setting of the *SpongeBob* universe (Figure 2, Page 2, Panels 3 and 4). The regenerated Patrick's become evil and are no longer best friends with SpongeBob SquarePants and a series of scenes occur around the restaurant *The Krusty Krab*. The story concludes with the real Patrick identifying himself to SpongeBob and they become best friends again. Tom and Clancy do not explicitly discuss or define the concept of regeneration, although they identify it in panel 4 of page 2 when they say "Yes! They are regenerating." Tom and Clancy, like Charlyne, incorporate their ideas of regeneration to fit the nature of comic book storytelling. In this way, Tom and Clancy are setting up a problem, however, unlike Charlyne, they are not using science to solve the problem, but, instead, they are using reoccurring themes and elements from real SpongeBob SquarePants storylines to explain the solution.

Interesting to this story is that Tom and Clancy drew upon the story of regeneration of a sea star, a real-life story that occurred in nature when fishermen in the Mediterranean noticed that urchin populations were decreasing because of increasing sea star predation. The Mediterranean fishermen tried to kill the sea stars by cutting them in half and then throwing them back in the water. Unfortunately, like in SpongeBob's world, sea stars became abundant. It is unclear if Tom

and Clancy had preexisting knowledge about this phenomenon before developing this story or if they learned about it while they were researching regeneration.
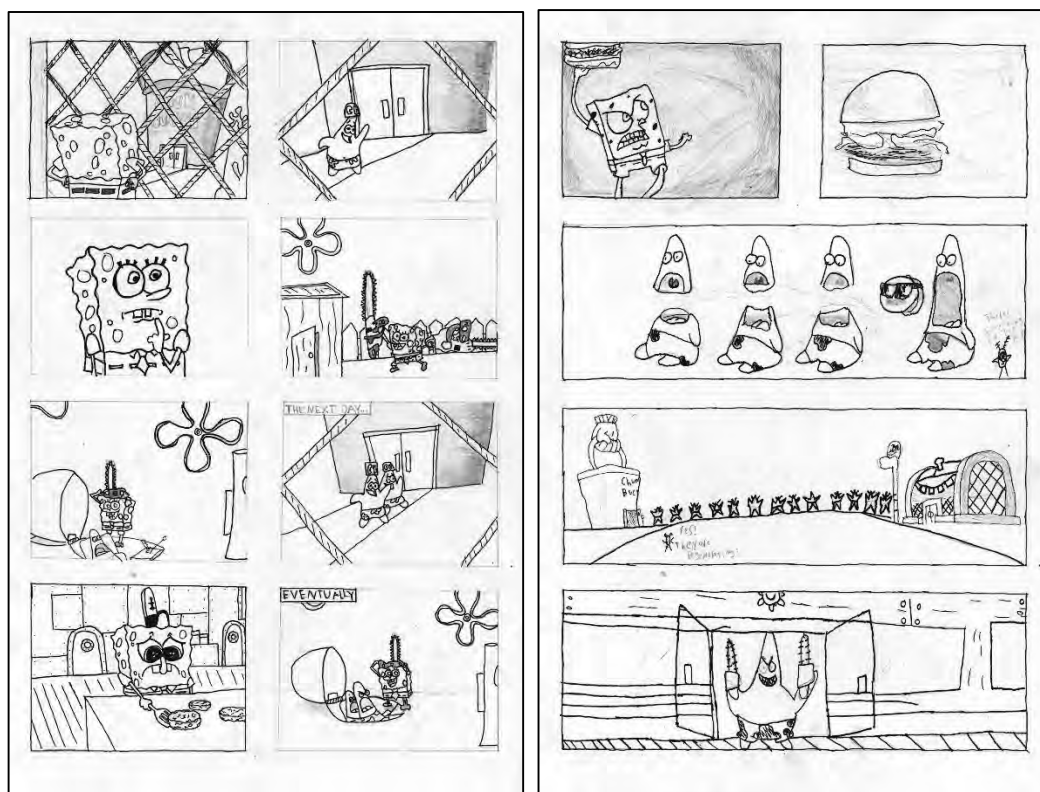
Figure 2. Two pages of Tom and Clancy's comic book story about regeneration.

Exploring scientific concepts through comic book design

Yore and Treagust (2006) suggest that the use of multiple representations may support student understanding of complex phenomena by making the phenomena more "intelligible" (p. 308) to students as they move towards sophisticated understandings. In both Charlyne and Tom and Clancy's comic book stories they drew upon existing characters and worlds and they were able to successfully incorporate their concepts of interest into their comics. In fact, all three of the students were able to quickly incorporate their concepts into their stories once they had researched existing products (e.g., comics and animations) or the science content. In the case of Tom and Clancy, they choose the world of *SpongeBob SquarePants* and then figured out a

concept which they could explore in that world. In the case of Charlyne, she chose the concept of conservation of matter and then situated it into the world of *We Bare Bears*. In an answer on her worksheet packet, Charlyne explained that she chose to use the *We Bare Bears* because "they allowed more focus on the main characters and add personality." Tom and Clancy responded to their choice of contextualizing their story in the world of *SpongeBob SquarePants* because "they are funny, and reference common pop culture, and they have concepts that are true." In fact, these two students had defended their choice of *SpongeBob SquarePants* because the story creator was a marine biology student before becoming a cartoonist and animator.

These initial findings highlight the benefit of comic book design in that it provides a context for which students can ground their conceptual knowledge in ways that may be interesting and appropriate for an audience of their peers. In this way students are positioned to apply their understanding of a concept in the context of a new setting that is potentially culturally relevant to them. We surmise that the need to resituate concepts into contexts that are outside of the classroom setting may force students to think more critically about ideas they learn in school.

We find Charlyne's problematizing of the conservation of matter particularly interesting as this follows much of the work of scientists in which they wonder about phenomenon in the nature world by making observations and they use these observations to explore and learn about phenomenon. This connection is promising and is an idea that we are working to expand upon in future iterations of this research. Future work will continue to focus on bridging students understanding of STEM concepts with their comic book storytelling, so that they can explore and contextualize concepts in ways that are meaningful to them.

Conclusion

In conclusion, we found that the three students we investigated were able to write and use language for varying purposes, as called for in the CCSS for ELA, and they were able to research and explore scientific conceptions, one part of the three-dimensional learning called for in the NGSS. Comic books served as a novel site for students to resituate their understanding of a science concepts. We emphasize the idea of resituating understanding, as we feel that the imposed constraints of the comic book genre (i.e., telling stories through a hybrid of imagery and text) required students to simplify and generalize their notions about a particular concept to a new, novel, and potentially culturally relevant situation. Additionally, the resituating of ideas in this format that draws upon the use of sequential and interconnected imagery provided opportunities for students to contextualize their own understandings into a novel context that exists outside of the ways that they are traditionally expected to express their understandings. Further, we believe student created comic books expand on many of the benefits of traditional uses of tradebooks in classrooms and build upon the benefits of inviting and inspiring student engagement (Ansberry & Morgan, 2010; Hapgood et al., 2004); presenting new ideas in interesting ways (Romance and Vitale, 2006); representing concepts, facts, and patterns (Morrison & Young, 2008; Romance and Vitale, 2006); and provide experience with phenomena unobtainable in the classroom (Morrison & Young, 2008; Romance and Vitale, 2006).

Future Direction

Lacking from the first iteration of this research is the crucial piece of engaging students in the disciplinary practices of science, so that that are not only learning or resituating a concept, but, instead, constructing knowledge as they engage in the practices and crosscutting concepts of science in the service of sense making (Allchin 2012; NGSS Lead States 2013; Passmore 2014).

In the next iteration of this research, we plan to draw heavily upon the similarities in structure between the practices of science and the design cycle and will position students to explore STEM ideas and to explain those ideas though the design of a four-part comic book story. Students will conduct four explorations over the course of the year. During each exploration, students will begin by engaging in and exploring a big idea related to energy in one of four STEM disciplines (i.e., science (S), technology (T), engineering (E), and math (M)) and they will design a comic book to explain this big idea by engaging in the IB Design Cycle.

Modeling will be emphasized throughout each of the explorations to help students continually revise their thinking as they engage in a new exploration. Modeling is a complex and adaptive system of communicative action in which learners acquire knowledge experientially through scaffolded interactions that encourage "perception, interaction, planning, research, discussion, argument, and co-construction of academic products" (Hakuta and Santos, 2012, p. ii). This system of communication draws upon "speaking, listening, writing, representation, reading, and viewing the various signs, gestures, texts, and discourses related to" doing, understanding, and communicating (Hand et al., 2003, p. 614) encompassing and bridging a broad array of disciplinary practices (Stage, Asturias, Cheuk, Daro, & Hampton, 2013). Models will serve as a scaffold to support the inclusion of increasingly more complex mechanistic explanations of energy in their comic book stories.

References

Allchin, D. (2012). The Minnesota case study collection: New historical inquiry case studies for nature of science education. *Science & Education*, *21*(9), 1263-1281.

Ansberry, K., & Morgan, E. R. (2010). *Picture-perfect science lessons: Using children's books to guide inquiry*. NSTA Press.

Ainsworth, S. (2006). DeFT: A conceptual framework for considering learning with multiple representations. *Learning and instruction*, *16*(3), 183-198.

Ainsworth, S. (2008). The educational value of multiple-representations when learning complex scientific concepts. In *Visualization: Theory and practice in science education* (pp. 191-208). Springer Netherlands.

Appleton, K. (2007). Elementary science teaching. In S. Abell & N. Lederman (Eds.), *Handbook of research on science education* (pp. 493-536). Mahwah, NJ:Erlbaum.

Barber, J., & Cervetti, G. (2009, November). Bringing back books: using text to support hands-on investigations for scientific inquiry. *Science and Children*, *47*(3), 36.

Casteel, C. P., & Isom, B. A. (1994). Reciprocal Processes in Science and Literacy Learning. *Reading Teacher*, *47*(7), 538-45.

Cervetti, G. N., Barber, J., Dorph, R., Pearson, P. D., & Goldschmidt, P. G. (2012). The impact of an integrated approach to science and literacy in elementary school classrooms. *Journal of research in science teaching*, *49*(5), 631-658.

Cervetti, G. N., Pearson, P. D., Bravo, M. A., & Barber, J. (2006). Reading and writing in the service of inquiry-based science. In R. Douglas, M. P. Klentschy, K. Worth, and W. Binder (Eds), *Linking Science and Literacy in the K-8 Classroom* (p. 221-244). NSTA press: Virginia.

Cohn, N. (2005). Un-Defining" Comics": Separating the cultural from the structural in

'comics'. *International Journal of Comic Art*, *7*(2), 236-248.

Duschl, R. (1990). *Restructuring science education: The importance of theories and their

development*. New York, NY: Teachers College Press.

Dyasi, H. M. (2006). Visions of inquiry: Science. In R. Douglas, M. P. Klentschy, K. Worth, and

W. Binder (Eds), *Linking Science and Literacy in the K-8 Classroom* (p. 3-16). NSTA press:

Virginia.

Feder, M., & Rhodes, H. (Eds.). (2014). *Literacy for Science: Exploring the Intersection of the

Next Generation Science Standards and Common Core for ELA Standards: A Workshop

Summary*. National Academies Press.

Groensteen, T. (2008). A Few Words about The System of Comics and More... *European Comic

Art*, *1*(1), 87-93.

Hakuta, K., & Santos, M. (2012). Conference overview paper. *Commissioned Papers on

Language and Literacy Issues in the Common Core State Standards and Next Generation

Science Standards*, *94*, i-ix.

Hand, B. M., Alvermann, D. E., Gee, J., Guzzetti, B. J., Norris, S. P., Phillips, L. M., ... & Yore,

L. D. (2003). Message from the "Island Group": What is literacy in science

literacy?. *Journal of Research in Science Teaching*, *40*(7), 607-615.

Hapgood, S., Magnusson, S. J., & Sullivan Palincsar, A. (2004). Teacher, text, and experience: A

case of young children's scientific inquiry. *The Journal of the Learning Sciences*, *13*(4),

455-505.

Hodson, D. (2009). *Teaching and learning about science.* (pp. 241-327). Rotterdam: Sense

Publisher.

Kantrowitz, A. (2017). Thinking through drawing. *American Educational Research Association Annual Meeting 2017*. San Antonio, TX, April 27- May1, 2017.

Magnussen, A. (2000). The semiotics of CS Peirce as a theoretical framework for the understanding of comics. *Comics and culture: Analytical and theoretical approaches to comics*, 193-207.

McCloud, S. (1993). Understanding comics: The invisible art. *Northampton, Mass*.

Morrison, J. A., & Young, T. A. (2008). Using science trade books to support inquiry in the elementary classroom. *Childhood Education*, *84*(4), 204-208.

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects*. Washington, DC: Authors.

NGSS Lead States. (2013). Next Generation Science Standards: For States, By States. Washington, DC: The National Academies Press.

National Research Council. (2014). *Literacy for Science: Exploring the Intersection of the Next Generation Science Standards and Common Core for ELA Standards: A Workshop Summary*, Holly Rhodes and Michael Feder, *Rapporteurs*, Steering Committee on Exploring the Overlap between "Literacy in Science" and the Practice of Obtaining, Evaluating, and Communicating Information. Board on Science Education, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academies Press.

Pappas, C.C., Varelas, M., Barry, A., and Rife, A. Promoting dialogic inquiry in information book read-alouds: Young urban children's ways of making sense in science. In W. Saul (Ed), *Crossing Borders in Literacy and Science Instruction* (p. 161-189). NSTA press:

Virginia.

Passmore, C. (2014). Explanation; Mechanisms; Representations; Scientific reasoning.

Pearson, P. D., Moje, E., & Greenleaf, C. (2010). Literacy and science: Each in the service of the other. *Science*, *328*(5977), 459-463.

Romance, N. R., & Vitale, M. R. (1992). A curriculum strategy that expands time for in-depth elementary science instruction by using science-based reading strategies: Effects of a year-long study in grade four. *Journal of Research in Science Teaching*, *29*(6), 545-554.

Romance, N. R., & Vitale, M. R. (2001). Implementing an in-depth expanded science model in elementary schools: Multi-year findings, research issues, and policy implications. *International Journal of Science Education*, *23*(4), 373-404.

Romance, N. R., & Vitale, M. R. (2006). Science IDEAS: Making the case for integrating reading and writing in elementary science as a key element in school reform. In R. Douglas, M. P. Klentschy, K. Worth, and W. Binder (Eds), *Linking Science and Literacy in the K-8 Classroom* (p. 391-405). NSTA press: Virginia.

Settlage, J. & Southerland S, A. (2012). *Teaching science to every child: Using culture as a starting point*. Routledge: New York.

Smith, A., Hall, M., & Sousanis, N. (2015). Envisioning possibilities: Visualising as enquiry in literacy studies. *Literacy*, *49*(1), 3-11.

Sousanis, N. (2012). The shape of our thoughts: A meditation on & in comics. *Visual Arts Research*, *38*(1), 1-10.

Sousanis, N. (2015). *Unflattening*. Harvard University Press.

Sousanis, N. (2017). Comics-based research: Affordances and process, a workshop. *American Educational Research Association Annual Meeting 2017*. San Antonio, TX, April 27- May1, 2017.

Stage, E. K., Asturias, H., Cheuk, T., Daro, P. A., & Hampton, S. B. (2013). Opportunities and challenges in next generation standards. *Science*, *340*(6130), 276-277.

Vitale, M. R., & Romance, N. R. (2011). Adaptation of a Knowledge-Based Instructional

Intervention to Accelerate Student Learning in Science and Early Literacy in Grades 1 and 2. *Journal of Curriculum & Instruction*, *5*(2).

Yore, L. D., & Treagust, D. F. (2006). Current realities and future possibilities: Language and science literacy—empowering research and informing instruction. *International Journal of Science Education*, *28*(2-3), 291-314.

Knowledge of Information Literacy and Text Structure (KILTS): An Instrument Developed to Measure Emergent Bilingual Hispanic Third-Graders' Gains from a Mentoring Authors Experience

Joyce C. Fine, Florida International University

The new literacies of the Internet and other ICTs include the skills, strategies, and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives. (Kinzer, Coiro, & Cammack, 2004)

In a world that is more connected via the new literacies, including the Internet and information communication technologies (ICT's) than ever before, students need to be taught how to navigate successfully and safely to find the information they need, not only to succeed in school, but also to succeed in life (Moje, Giroux & Muehling, 2017). This set of skills, according to The American Library Association (1989) is called information literacy and is defined as a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." Teaching the use of new literacies is a challenge for teachers of students in K-12 schools and is especially challenging when students are second language learners. According to Hobbs (2005), the active learner-centered model of instruction of new literacies is highly effective for second language learners. However, to complicate the issue further, these literacy challenges are embedded in the Common Core State Standards (CCSS, 2010) or one of the slight variations on CCSS, adopted by more than 37 states, which teachers must prepare students to meet. The teacher's role has become more critical in orchestrating learning experiences for students (Coiro, 2009) so that they achieve the proficiency currently required, which is well above the traditional foundational literacy (reading and writing) level that was taught and incorporate the requirements needed to navigate the quickly changing literacy world (Leu, Kinzer, Coiro, Castek, & Henry, 2013).

Theoretical Framework of the Study's Purpose and Procedures

In this study, using a sociocultural theoretical (Vygotsky, 1978) and a sociocognitive theoretical (Bandura, 1986, 1997) perspective, three teachers of emergent Hispanic, bilingual

third-graders in a charter school where 98% of the students are English learners, in the southern part of the United States, created a Mentoring Authors experience with the purpose of increasing their students' knowledge of Information Literacy and text structure. This experience included students working in groups to write information books. From the sociocultural perspective, the students learned about Information Literacy and text structure from their teachers, more knowledgeable others. To achieve this goal at the elementary level, students first learned about the text features of expository text such as the table of contents, the glossary, and the index. Then, they began to learn about the types of text structure that most informational or expository text use, including description, sequence, compare and contrast, cause and effect, and problem and solution. The teachers selected animals as the thematic unit topic and allowed the students to select an animal of their choice to study. They eventually shared their knowledge and presented their books to the class and to their parents.

From the sociocognitive theoretical perspective, students followed their teachers' modeling of the ways to find information in books and on the Internet and gained self-efficacy about their ability to use Information Literacy and text structure to create their own informational books. The teachers modeled a strategy of identifying the text structures using think-aloud color codes (Blachowicz, Fisher, Ogle, & Watts Taffe, 2013 p. 28-31). Building on that strategy, students used color coding to mark copies of information they found on their topic on the Internet. The teachers would scaffold the students' learning as they underlined text with color markers to identify the text structures. Then they were given the chance to try to identify the types of information themselves using color markers for the different types of text.

Design of the Study

A quasi-experimental design with an experimental group of 93 emergent Hispanic, bilingual third-graders at a charter school in the Southeast were included in the Mentoring Authors experience during their classroom reading instructional block.

A small comparison group of 14 emergent Hispanic, bilingual third-graders, who were being tutored after school for two hours a week in addition to the regular classroom instructional block, were also participants in the study. The students were categorized as level 1-5 English language learners using the 2015 Comprehensive English Language Learning Assessment (CELLA), developed by the Educational Testing Service (ETS) in 2005. The assessment was tested for reliability and validity as well as content validity and found to be acceptable (CELLA ETS, 2005). The instrument is designed to measure students' English language proficiency. For instance, level 1 students demonstrate very little understanding of English, level 2 students demonstrate limited understanding, level 3 demonstrate more understanding, level 4 demonstrate extensive understanding and level 5 students understand nearly everything, are proficient in reading, writing, speaking, and listening in English and are almost ready to exit special classes for English Speakers of other languages (ESOL). Only levels 3-5 were included in the analysis.
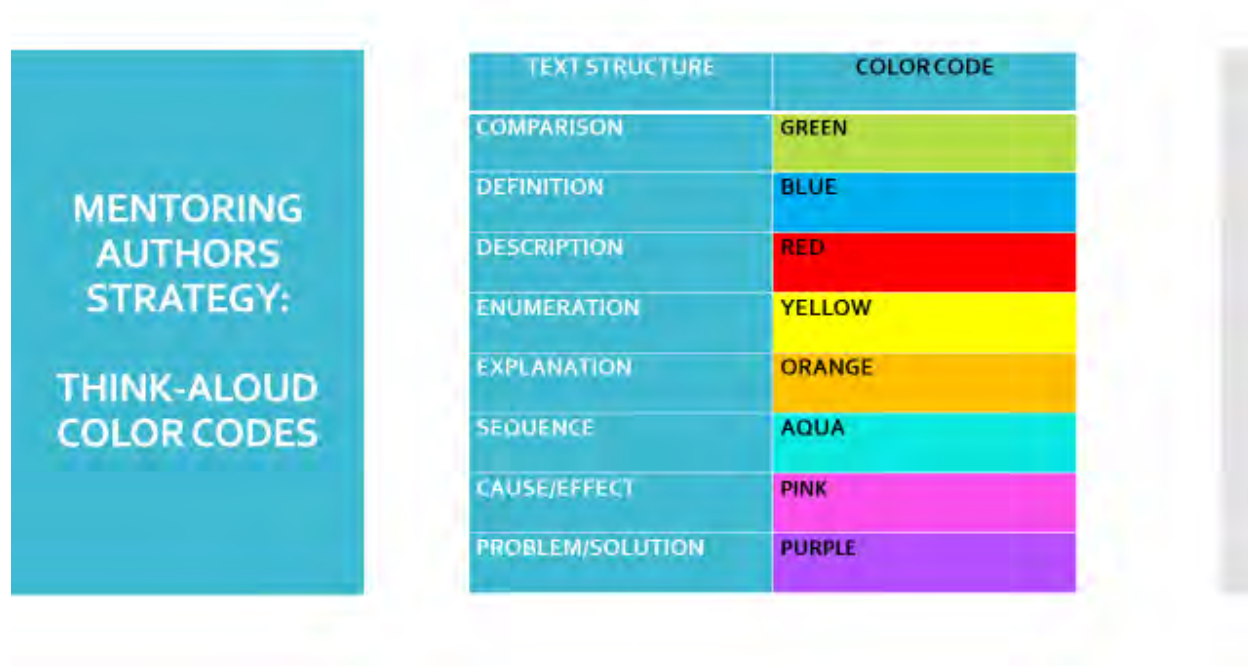
Methods

The researchers trained the three teachers, each with six or fewer years of teaching experience. Each of the teachers taught a class of about 30 students in 90 minute reading blocks from October through November using the Mentoring Authors Experience. The 14 comparison students were taught during their school day by certified teachers. All teachers were teaching the students to meet the state standards. Additionally, the 14 comparison students were participating

in an after school one-on-one reading tutoring program in which they were tutored one hour

twice a week by an Elementary Education program preservice teacher.

The treatment was the Mentoring Authors Strategy which included the following steps:

(a) Learn about text structures using Think –aloud color codes (Blachowicz, Fisher, Ogle &

Watts Taffe, 2013) modified to add more structures (See figure 1.), (b) Research using

information books, (c) Write information books, and (d) Publish information books. Following

the Mentoring Authors experience, the teachers and students invited parents and families to a

celebration in which they shared their original books created while they were learning about

Information Literacy and science. This culminated a unit of study incorporated curriculum goals

and standards, and best of all, the imaginations of students eager to learn. The Mentoring

Authors Strategy motivated students to have an authentic purpose for developing their skills to

comprehend informational text.

Figure 1. Modified Think-aloud Color Codes

TEXT STRUCTURE	COLOR CODE
COMPARISON	GREEN
DEFINITION	BLUE
DESCRIPTION	RED
ENUMERATION	YELLOW
EXPLANATION	ORANGE
SEQUENCE	AQUA
CAUSE/EFFECT	PINK
PROBLEM/SOLUTION	PURPLE

Assessment and Instrument Development

Just as with all good instructional approaches, there was a need to measure the students' academic growth. There already exists an instrument created by Kent State University librarians called *TRAILS: Tools for Real-time Assessment of Information Literacy* (2006) that is free and available online for third, sixth, ninth, and twelfth graders. It is aligned with the CCSS and has been widely used. However, when this instrument was examined by the researchers, it seemed that the text was written in a way that was much too complex for emergent Hispanic, bilingual third-graders to comprehend. To keep the concepts, but simplify the complexity of the language an instrument, *Knowledge of Information Literacy and Text Structure (KILTS)* (Author, 2016) was created. The <u>*KILTS*</u> items were evaluated by 2 librarians for content validity. They found that the items were similar to the types of information that is needed for the standardized testing that the students would take on the state standardized assessment, a test aligned with the competencies on state's version of the CCSS. The format has item stems that follow the same pattern of asking a question about where one would look to find different types of information. (See figure 2 for the instrument and answer key.) The teachers read aloud the items to the students in both the pretest and the posttest.

Figure 2. Knowledge of Information Literacy and Text Structure (KILTS)

Name _____Student's Name _____Age _____ Grade _____ Date_____

Knowledge of Information Literacy and Text Structure (KILTS)

1. If I want to find facts about seals, I would look for

    a. A description and a picture in an encyclopedia.
    b. A story about Sammy the Seal.
    c. A drawing of circus animals.

LAFS 1.W.38

2. If I want to find facts about trees, I would

  a. Look at a show on TV about trees and forests.
  b. Watch a video on YouTube about tall plants.
  c. Go to www.realtrees 4kids.org to find facts.

3. If I want to compare the weather in New York with the weather in Florida, I would

  a. Read a newspaper to find out what the temperature is today in Florida.
  b. Find out how many people are at the beach in New York and in Florida on a hot day.
  c. Find out how much rain there is in a year in both places on a map.

4. If I want to learn how to make a cake, I would

  a. Read an article about the amount of sugar and flour in birthday cakes.
  b. Read a book on how to make a cake and follow the steps.
  c. Watch a video of people eating cake at a birthday party on Google.

LAFS W 2.5 : LAFS W 3.7

5. If I want to find information about lions, I would

  a. Look in the table of contents of a book on wild animals.
  b. Page through a nature magazine for pictures of lions.
  c. Read a story called Andy and the Lion.

6. If I want to find out about the kind of flowers that bloom in spring, I would

  a. Go to Home Depot and buy spring seeds to plant.
  b. Read an article in "Better Homes and Gardens" on plants that bloom in spring.
  c. Buy a calendar with pictures of flowers.

7. If I did not know the meaning of a word in my science book, I would

  a. Ask my friend what it means.
  b. Ask the teacher to read the word and tell me the meaning.
  c. Look in the glossary in the back of the book.

8. If I want to learn facts about stars in the sky, I would

  a. Observe them at night and find the North Star and Milky Way.
  b. Read details about the patterns of stars in the sky on the internet.
  c. Read a magazine at the grocery store about stars in the movies.

9. If I want to compare how well two basketball teams played each quarter,

  a. I would find out the score for each team at the end of the game.
  b. I would read a newspaper to find the score for each after each quarter.
  c. I would read an article to find out about members of the team.

10. If I want to get a definition of type of dinosaur,

   a. I might get it by reading the words after the name of the dinosaur in an information book.
   b. I might get it by checking a glossary in the back of the book.
   c. Both of the above.

11. If I want to find out about kinds of birds, I would

   a. Read a book on building a bird house.
   b. Read an encyclopedia article on types of birds.
   c. Find a picture of different birds on the Internet.

12. If I want to learn more about how people live in different places, I would

   a. Look in a book about people around the world under the headings of food, dress, and
       work.
   b. Read today's newspaper to see what happened in different countries.
   c. I would look at the pictures on the internet of people around the world.

13. If I want to find out what a part of an information book is about, I could

   a. Read the summary at the end of the book.
   b. Read the questions and answers at the end of the book.
   c. Look at the Table of Contents and read the topics and subheadings.

14. If I want to write a comparison of two animals, I would need to

   a. Read about the animals' size, color, habitat, and eating habits.
   b. Read a story about where the animals live.
   c. See a video about the animals in the wild.

15. If I want to create an information book about foods from around the world, I would

   a. Get books from the library about food and how to prepare the different types.
   b. Read articles on the internet about food from different countries, plan an introduction,
   select countries, and select vocabulary for the glossary.
   c. Get books about foods from different countries, select characters to include in different
   settings, and write about how they prepare their food.

16. If I want to know how the 13 American colonies became states, I would

   a. Read books on American History and the Revolution in the library.

   b. Study the Declaration of Independence at the museum.

   c. Read biographies of George Washington and Abraham Lincoln.

17. To write a book about different kinds of dogs, I would

   a. Find facts on dogs on the internet and in books, and organize the facts, definitions, and
   details before writing.

    b. Find facts about a dog on the internet and start writing.

    c. Start writing about the kinds of dogs I like.

18. When I read about animals that I want to write about, I

    a. Draw pictures of each animal and color them before I write.

    b. Take notes about the animals and the books where I found the information.

    c. Copy the information carefully, word for word, as it is written in the book.

LAFS 3 W.8

19.   When I want to write my opinion that everyone should read every day,

    a. I give a good reason to support my opinion.

    b. I state my opinion why it is the best activity and describe what I read every night before bed.

    c. I state my opinion, give several reasons to support my opinion, and write a conclusion.

20. If I want to compare and contrast living in the city with living in the country, I need to

    a. Interview someone who lives in the city and someone who lives in the country.

    b. Find out important points and key details about life in both the city and the country.

    c. Read stories about living in the city and living in the country.

LAFS 3.3R.I 3.9

KILTS Answer Sheet.

The chart is set up with the following number of questions on each page so that you could fold the paper to check the letter answer for each question.

1. a	8. b	16. a
2. c	9. b	17. a
3. c	10. c	18. b
4. b	11. b	19. c
5. a	12. a	20. b
6. b	13. c	
7. c	14. a	
	15. b	

Results from the Assessment

Pre-test and Posttest data were collected in order to determine if the KILTS treatment had a significant effect on students' knowledge of informational literacy and text structure. The following analyses were conducted: Paired sample T-test to compare difference within each group, an ANOVA was used to compare differences between groups, and ANCOVA was used to control for differences in the pre-test, and Brown Forsythe and Welch tests were conducted to account for unequal sample sizes.

Table 1.

Group	Number	Mean Pre-test (standard deviation)	Mean Post-test (standard deviation	Difference (standard deviation)	P-value
Kilts (within)	N= 93	12.31 (3.24)	16.51 (2.06)	4.2 (2.84)	.000<.05
Comparison (within)	N= 14	10.78 (3.30)	12.42 (3.20)	1.64 (3.02)	.063>.05

The students in the experimental group made significant gains with a difference of 4.2 in their mean scores with a $p < .05$ while the comparison group had a difference of 1.64 in their mean scores with a $p > .05$.

Discussion

Besides the values of the differences on the KILTS assessment for the experimental group taught with the Mentoring Authors experience, it is noteworthy to mention that all the students (N=93) plus the students who were ESOL levels 1 and 2 who were not included in the analysis, but who were included in the treatment in the classrooms, passed the state assessment in the area of informational text. There is no report available on the rate of passing on the state assessment for the comparison group. The unavailability of those scores is a limitation of the study for any comparison in this area.

One implication of the study is that it shows teachers can teach information literacy and text structure to emergent bilingual Hispanic third-graders using the Mentoring Authors Experience. As Hobbs (2005) suggests, if this student-centered approach is beneficial for second language learners, it is most likely beneficial for all elementary students.

References

American Library Association. Presidential Committee on Information Literacy. Final Report.

(Chicago: American Library Association, 1989.)

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory.

Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: Freeman.

Blachowicz, C., Fisher, P., Ogle, D. & Watts Taffe, S. (2013). *Teaching academic vocabulary*

K-8: Effective practices across the curriculum. New York, NY: Guilford Press.

CELLA ETS (2005) *CELLA technical summary report*. Princeton, NJ: ETS.

Coiro, J. (2009). Promising Practices for supporting adolescents' online literacy development. In

K. D. Wood & W. E. Blanton (Eds*.), Literacy instruction for adolescents: Research-based*

practice (p. 442-471). New York: Guilford.

Hobbs, R. (2005). Literacy for the Information Age. In J. Flood, S. B. Heath, & D. Lapp,

Handbook of Research on Teaching Literacy Through the Communicative and Visual Arts

(pp. 13-37)*.* Mahwah, NJ: Lawrence Erlbaum.

Kent State University Librarians (2006). TRAILS: Tools for Real-time Assessment of

Information Literacy. Retrieved from www.trails-9.org.

Leu. D. J., Kinzer, C. K. Coiro, J. L. & Cammack, D. W. (2004). Toward a theory of new

literacies emerging from the Internet and other information and communication

technologies. In *Theoretical Models and Processes of Reading.* (5th ed.). (2004)

International Reading Association. p. 1570-1613.

Leu, D. J., Kinzer, C., Coiro, J., Castek, J. Henry, L. A., (2013). New literacies: A dual-level

theory of the changing nature of literacy. In D. E. Alvermann, N.J. Unrau, & R. B.

Ruddell (Eds.) *Theoretical models and processes of reading*, (6th ed.) p.1150-1181. Newark, DE: International Reading Association.

Moje, E. B., Giroux, C., & Muehling, N. (2017). Navigating cultures and identities to learn literacies for life. In K. A. Hinchman, D.A. Appleman (Eds.) Adolescent literacies: A handbook of practice-based research, p. 3-20. New York: Guilford.

National Governors Association (NGO) & Council of Chief State School Officers (CCSSO). (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science and technical subjects.* Washington, DC: Authors.

Vygotsky, L. S. (1978). Mind in Society. *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Literacy through Community Partnerships: Developing Risk-Taking Teacher Leaders

Cathie English, Ph.D.

Missouri State University

Abstract

This qualitative study (Seidman, 2012) investigates the traits or dispositions of teacher leadership in secondary English/Language Arts (ELA) teachers enrolled in a graduate course emphasizing teacher advocacy/agency, professional growth, community literacy, and digital literacy. Teacher preparation programs interested in preparing teacher leaders who enact community literacy projects must begin emphasizing in their curriculum the kinds of literacy practices that facilitate ongoing communication with administrators and constituents. The role of the building principal is key in supporting teachers who might fear failure or pushback from the community or students. Teachers need support in developing these skills necessary to advocate for structured time to co-create literacy projects that can enhance and sustain local communities through economic, cultural, or environmental investigations. Moreover, teacher preparation programs must continue to encourage and nurture teachers to be curious explorers who investigate issues or concerns in their community, and acknowledge that failure can elicit deeper meaning for teachers and their students.

Linda Flower (2008) defines community literacy as a rhetorical practice for inquiry and social change. She (2008) notes its educational context in Dewey's conceptualization of progressive education where, "people learn things by a hands-on experiential and strenuously intellectual engagement with the world" (p. 16). In 1999, I discovered just how challenging it is to engage students in a hands-on experience in a community literacy project as a secondary English Language Arts (ELA) teacher. My first attempt with students was born out of a question from the city administrator in the rural community where I taught for 21 years. He asked me if there was any way to preserve the stories of the many octogenarians and nonagenarians in our nursing homes. His mother had just passed away and he lamented that he hadn't gotten her stories. What I learned during the process is that my students were speaking for others, or, as Flower (2008) acknowledges, "Taking rhetorical action concerned with others begins by learning to listen to and speak with them, especially with those 'Others' whose voices are often silenced or marginalized" (p. 82). Ageism does silence some of the most valuable citizens in our society and it was our goal to be the voice of these wise residents.

I had begun my teaching career seven years earlier and had a professional awakening at a National Writing Project rural summer invitational institute. I witnessed other teachers' demonstrations of community literacy projects and I wanted my students to have the same meaningful experiences. At the time, I didn't realize that doing so involved a great deal of risk, but I jumped in blindly. The first obstacle I faced was budgetary. Long interested in technology, I wanted the oral histories in digital format. After I lamented to our guidance counselor that I couldn't get the digital tools I needed because of our budget, she encouraged me to apply for a non-profit foundation's teacher of excellence award as a possible means to fund the work I wanted to do. The award allowed me to purchase a new computer with Microsoft Windows,

quality Sony handheld tape recorders, audio tapes, and funds for the services of a professional historian and a storyteller, who both instructed my students (and me) about what we must do and how we might do it well. Even then, it was risky to ask for other necessities (e.g., buses to transport students; assistance from our technology coordinator; arranging student visits with nursing home personnel; letters of communication to parents and all participants; constructing consent forms for students and nursing home residents; and arranging computer lab time and searching for online sites to house the stories). There were many days I asked myself, "What have I gotten myself into?"

In hindsight, I've come to realize that what my students and I did was nothing short of miraculous. Interviewing nursing home residents and transcribing interviews is challenging literacy work. I still have paper copies of those oral histories, snippets really, of the lives of the elderly in our community. The webpage developing sites we used, Geocities and AngelFire, have no archive of the digital stories, but luckily, our local history museum requested paper copies, so the stories are preserved. The project, "Elderly Voices: Living Links to the Past" taught me a great deal about teacher leadership and the necessity of risk and perseverance if I wanted to provide authentic literacy experiences for my students and my rural community. That first project gave my students a deep sense of accomplishment, but we also celebrated most what we learned: love, compassion, patience, history, dignity, and a sense of our own mortality. The subsequent years of my secondary career continued with many forms of community literacy including: family, local business and prominent women oral histories; multi-generational work ethnographies; and finally, a study of local poverty and hunger.

Community partnerships were essential to me as a place-conscious, ELA educator who hoped to instill within my students five senses of place consciousness as defined by Haas and

Nachtigal (1998) including living well in community or a sense of belonging; living well

spiritually or a sense of connection; living well economically or a sense of worth; living well

politically or a sense of civic involvement; and living well ecologically or a sense of place. I

wanted to move beyond the four walls of my classroom because, to me, they were not conducive

to attaining a sense of belonging, connection, worth, place, or civic involvement. I wanted to

provide my students with a sense of rhetorical agency. Flower (2008) cites the work of Brooke

(2015), identifying four interrelated forms of rhetorical agency:

> speaking up, or giving voice to a personal or group position that would otherwise go
>
> unheard; speaking against, or engaging in critique of positions, proposals, and arguments
>
> advanced by others; speaking with, or working to articulate ally relationships with
>
> groups, positions, and persons different from one's own; and speaking for, or stating
>
> commitments for projects, positions, principles, or visions for the future. (p. 40)

Sobel (2004) cites the Rural Challenge Research and Evaluation Program of 1999 concerning the

importance of the student grounded and rooted in place:

> A grounded, rooted learner understands that his/her activities matter, that they affect the
>
> community beyond the school. It is out of this particular formulation that the '*student as*
>
> *resource to the community*' takes shape— that understanding that students need to be
>
> thought of as productive assets to the health of the community. (p. 12) [Emphasis Sobel]

Robert Brooke (2003) writes that place conscious education "asks us to think of the

intradependence of individual, classroom, community, region, history, ecology—of the rich way

local place creates and necessitates the meaning of individual and civic life" (p. 10). The

intradependence of these six entities first requires awareness of each student and elicits several

questions: Who is the individual in my classroom? How does that student impact her classroom?

How does our collective classroom impact our community? Does our community impact our region? What is our history? How do our history and our present impact our community ecologically?

Brooke (2003) writes that "students need to understand who their community is and why it is that way…they need to be able to act effectively in and with the community—identifying current strengths and problems, negotiating satisfactorily with community members who hold different opinions" (p. 12). Nancy Welch (2008) argues that community literacy is "engaged community rhetoric…open to ordinary people. Ordinary people *make* rhetorical space through concerted often protracted struggle for visibility, voice, and impact against powerful interests that seek to deny visibility, voice and impact" (p. 477).

It may come as no surprise that my conviction and commitment to engage in community literacy was born out of my concern for mandated assessment of learning standards, (i.e. No Child Left Behind (NCLB)). As an 11th grade teacher at the time, I helped write the ELA standards and assessments because I lived in a Midwestern state with predominantly rural schools that believed teachers were the experts who should do so. However, I was also given the task of conducting the baseline assessments for all reading and writing standards. The teacher in me almost died. Later, that same state opted to hire an outside national testing company to complete the assessments. All of our hard work was for naught. What I observed about student writing in the state-wide writing tests was that it was canned, functional, or contrived. The writing lacked power or voice; it became a chore a student must complete. I wanted learning to have meaning. I wanted learning to have significance. With the advent of the Common Core State Standards (CCSS) initiative, the demand for complex student writing increased the stakes,

but I believe a place-conscious pedagogy provides the experiences and practice that students needed to meet the standards. According to Brooke (2015),

> The [CCSS] expects teachers to use a common set of teaching strategies and methods to understand the process of writing certain types of texts: argument, information, and narrative. Place-based writing can be aligned to the Common Core standards in writing because the investigation of local place through inquiry may elicit texts that may argue, inform, or tell a story. (p. 245)

Teacher Leadership Seminar

Because of my experience with mandated assessments, and my observations as a teacher of English and language arts enacting community literacy projects, my essential questions for instructing inservice teachers became, "How do I create agents for change who advocate for their students?", "How do I encourage professional growth through research and inquiry?", "How do I frame community literacy in meaningful ways to elicit the practices and methods necessary to engage in such endeavors?", and because of the rapid changes in digital literacy, "How do we teach to the digital natives in our current classrooms?" With these questions in mind, I developed a course focused on teacher leadership that included four threads: teacher advocacy/agency, community literacy, professional growth, and digital literacy. This course and a follow up course based on teacher reflective practice was funded by U.S. Department of Education's Title II Supporting Effective Educator Development (SEED) through the National Writing Project. Twelve graduate students, practicing English Language Arts (ELA) teachers from the surrounding area, nine of whom taught in small rural schools within ninety minutes of campus, completed the course. This seminar course included presentations by local university and school district personnel with expertise in teacher advocacy and agency, community literacy,

and professional growth. We also conducted a virtual meeting with a U.S. Department of

Education educational technology consultant. Students were also made aware of local resources

they might use as part of their curriculum through field trips to our university library archives,

the city art museum and nature conservation center.

   During our first class, small groups were formed and each determined its own meeting

dates, times and locations. They could utilize a combination of online and face-to-face meetings

and had to document the time spent participating in online chats and face-to-face meetings.

Meetings could be used to share and discuss selected readings, personal writing, teaching

demonstrations, technology-integrated writing lessons, school-community partnerships, plans for

a teacher advocacy program, classroom inquiry projects, etc. Students then outlined their

individual plan of action in a Letter of Commitment. Their plan had to include three personal

and/or professional goals, as well as their projected steps to achieve those goals. The goals were

focused toward improvement of themselves as a writer, teacher of writing and professional

educator. Each was instructed to develop a specific inquiry project in his/her classroom which

could include new or revised writing units for their classroom; an After-school Writing Circle or

other writing club; a writing exchange program between two or more schools; or

community/school writing partnerships. Students were also required to read, discuss and

comment with their group upon the inquiry texts they chose. Each was required to read three

book length resources or equivalent. Most groups chose to read two books in common and one

individual book (or manuscript) related to their specific inquiry. The record of their discussion

notes, personal and professional writing, their inquiry project and reflective writing was collected

in a culminating portfolio. Students reconvened at mid-term to write a reflection. In addition, I

met with each of the groups throughout the semester at various locales to assess the collective learning, status of the inquiry projects, or any concerns of the groups.

Participants

Utilizing Seidman's (2012) qualitative method, I selected three teachers of the twelve in the course, and conducted three ninety minute interviews with each. I asked the teachers three guiding questions, "What is your history as a teacher?", "What is your understanding of teacher leadership?", and "In reflection upon this course, what have you learned about teacher leadership?" Camille was in her second year of teaching in a school district approximately thirty minutes from our campus. She was as an enthusiastic teacher in our Master of Science in English education program who had had a difficult first year of teaching and left that school. Her experience in her new school was quite different. In her new school, she quickly became a leader whom others sought out for ideas and advice. She also established a rapport with the middle school principal who supported her efforts to enact her literacy project. Katrina was in her fourth year of teaching in a high school district fifty minutes from our campus. In her third year of teaching she had been approached by her principal to become the school's English department head, due to a retirement. Katrina graduated from this community's religiously affiliated four-year university and then decided to stay when she was offered a high school teaching job. Katrina was also seeking her Master of Science in English education degree. Katrina felt very much a part of her new community even beyond the school environment. Like Camille, she had a rapport with the principal who supported her efforts to enact a community literacy project. Camille and Katrina were also together in their self-selected inquiry group with another teacher, a fourteen-year veteran whom they both noted served as a mentor to them throughout the course.

Camille and Katrina read in common, *Write Like This: Teaching Real-World Writing Through Modeling and Mentor Texts* by Kelly Gallagher (2011), during which Katrina noted that she learned it was "important for students to see the messy beginnings of written works, especially if the teacher vocalized thinking behind the process." Camille also read *Everyday Editing: Inviting Students to Develop Skill and Craft in Writer's Workshop* by Jeff Andersen (2007). She noted, "When I first read that Andersen was a proponent of inviting students to take place in instruction, I didn't understand. I am inviting students to take place in their own learning?! I'm inviting them to ask, 'What do you notice?'" Camille also read *Discovering Media Literacy: Teaching Digital Media and Popular Culture in Elementary Schools* by Renee Hobbs and David Cooper Moore (2013). Katrina read *Reading in a Participatory Culture: Remixing Moby Dick in the English Classroom* by Henry Jenkins, et al. (2013), and *Writing our Communities: Local Learning and Public Culture* by David Winter and Sarah Robbins (2005), the latter becoming central to her understanding of community literacy. Camille's community literacy project included taking her students outside the classroom to write in an outdoor space, that is, a local stream, where they produced poetry they later performed in a public poetry slam in a community venue rather than the school building. Katrina's community literacy project was a student-run community online literary magazine where students served in roles as editors, public relations managers, marketing and advertising specialists and web designers. Students also contacted and worked with community members including marketing consultants and local businesses who provided funds for the website. Katrina's action research in this course became her master thesis.

Sandy was born and raised in the community where she taught approximately forty minutes from campus. She had taught in the community for over thirty years and was a non-

degree seeking student, but a teacher who continued to select courses that she felt would improve her practice. She partnered with another middle school ELA teacher, Dorothy, a non-traditional student who came to teaching later in life, but who was completing her Master of Science in English education degree and who had established an after-school writing club as her literacy project, something Sandy hoped to initiate in her own school district. Sandy and Dorothy read four books in common: *Bird by Bird: Some Instructions on Writing and Life* by Anne Lamott (2007), and three texts by Georgia Heard: *Finding the Heart of Non-Fiction: Teaching 7 Essential Craft Tools with Mentor Texts* (2013); *Writing Toward Home: Tales and Lessons to Find Your Way* (1995); and *Awakening the Heart: Exploring Poetry in Elementary and Middle School* (1999). Sandy was clearly a leader in her community, a small town where teachers had a great deal of status. Over the years, she had selected a specific student each year as her special literacy project, that is, a student she observed who had great potential in literacy, but who had dire personal circumstances. Sandy committed herself to these students each year and had long-standing relationships with her "special" students into adulthood. However, Sandy was unable to enact her literacy project, because she didn't have the support of her new administrator. Her school also followed a scripted curriculum and Sandy felt her hands were tied in any effort at a classroom community literacy project.

Data Sources and Research Questions

The data sources were the transcripts of the teacher interviews and the content of the course, including letters of commitment, cumulative portfolios, group members' responses to each other's research and community literacy units or enactments. My research questions included:

How do teachers identify as leaders?

How do teachers enact community literacy?

What risks are involved in enacting community literacy?

Data Analysis

Three researchers independently open-coded the transcripts of the interviews and then met to review the codes before axial coding. The following axial codes emerged from open coding: teacher as advocate for students, teacher as learner, creativity/ innovation, peer/mentor relationships, and community literacy. We met to concur about the definitions of each code, but particularly struggled with our consensus of the definition of creativity and innovation, because, for me, as a veteran teacher, many of the creative or innovative ideas were not new (See Figure 1). Henriksen and Misha (2015) argue it is difficult to define creativity, "Studying creativity…is complicated by its abstract and complex nature, and the fact that there is not one consistent definition of 'what creativity is' or what it means for effective teaching" (p. 2). They also acknowledge that because of standard-based assessments, it is challenging to study creativity in the classroom.

Code	Definition	Example
Teacher as Advocate for Students	The teachers show concern for students inside and outside the classroom and advocate for a student-centered classroom.	"Here are your lower level kids and they did this. Quit underestimating us. Use us. We become a resource. Let's work together."
Teacher as Learner	The teachers who engaged in learning and co-creation of new knowledge in the classroom or through research literature or professional development.	"'Here are the problems that have arisen. Here's the teams that I definitely need to meet with today.' That's what was fun with me, because I was lead learner. For instance, I had no idea how to make a website. So when students asked me, I'm like, 'No. Uh-oh.'"
Creativity and Innovation	The teachers implement activities that enhances critical thinking or engages news ways of approaching literacy.	"And [our principal is] like, take risks and figure out what works for your classroom. I'm not going to like make you do lesson plans a certain way and not make sure you follow your textbook and like all these different things…we can like really stretch here and do what's best for kids and be an inquiry based staff."
Peer Mentors	Teachers acknowledge the impact of collegial professional relationships.	"And I also feel, too, [a peer] is not afraid to step in if they see something is not going really great in your classroom. And they don't step in and say, 'Hey, you're doing this wrong,' but they know how to spin it to where, 'Hey, I have this great practice—Why don't you work with me with this and we'll both try it.'– they have a nonchalant type way of pushing best practices…without being forceful, and being demanding, and being arrogant that this is the best way to do it. But they're being helpful."
Community Literacy	Teachers engage in rhetorical practice for inquiry and social change through a hands-on experiential and strenuously intellectual engagement with the world (Flower, 2008).	"A lot of [community literacy was] like sucking from the community, which I feel like we do a lot anyway in a rural area. I was like, 'Man, I would love to see some sort of solid example developed where you're giving back also.' The kids are giving just as much and they're also contributing to the community – really making that – what is supposed to be the cycle, actually working."

Figure 1. Codes, definitions, and examples. Please note that some text was double-coded.

Interpretations

Figure 1 below illustrates the instances of the emergence of codes from each teacher's transcript. The following sections unpack these codes.
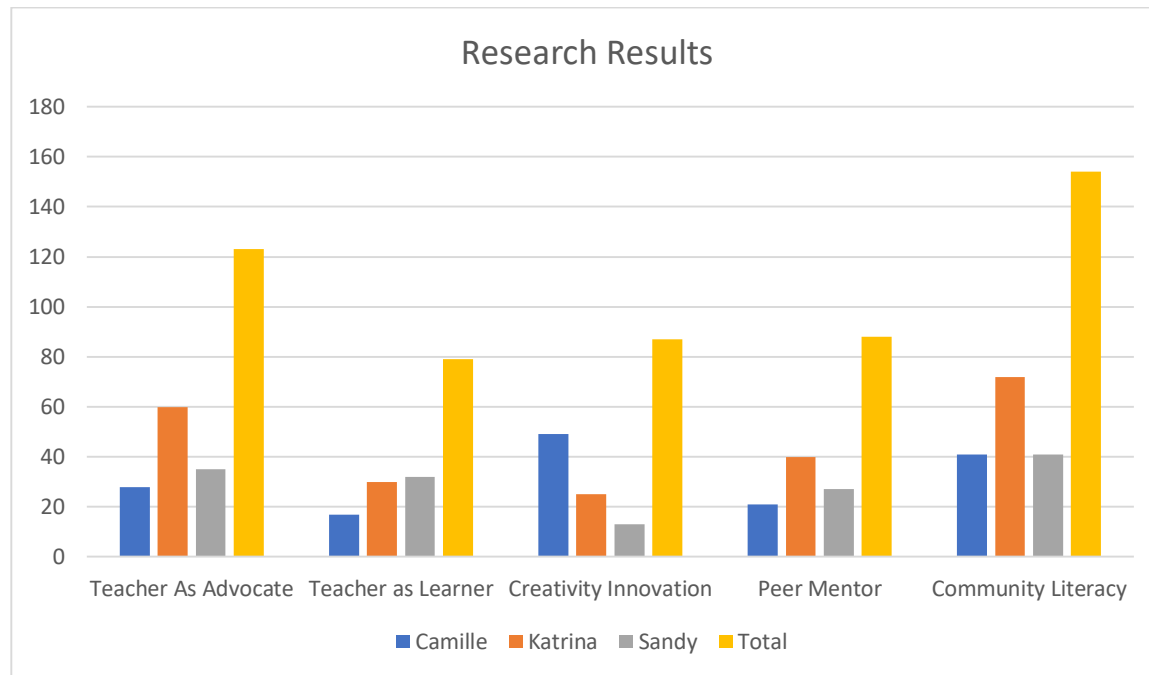
Figure 1. Instances of codes emerging for each teacher participant.

Teacher as learner. All three teachers displayed attributes of teacher as learner and researcher. Michelle Collay (2011) writes that as teachers we come to know ourselves "as capable and smart and can lead only when we recognize the work we do as learning…[our] individual journey is the nucleus of our practice because the work of leading learning is deeply personal" (p. 66). Edwards and Hinueber (2015) write that setting aside time for learning is crucial for teachers to become teacher leaders and schools should protect time for teachers to learn (p. 27). Camille was explicit about teachers as learners being leaders:

> They are constantly trying to improve their practices, their beliefs about teaching, but
> they're also still being a learner themselves. And I think that's the biggest part, is that
> teacher leaders are constantly learning and putting themselves as students, instead of just

that teacher role, which yes, the teacher role is very important for a teacher leader, but we

have to be open to being a student and learning not just from different teachers, but also

learning from experts as far as doing our own research.

Katrina referred to her community online literary magazine and how it came about after

she had reflected upon a prior community literacy project that left her unsatisfied:

So I wanted them [students] to pick one person. Surely there is one person from this

town that has given you something, and we are going to explore that person in depth

throughout this year. So every writing assignment tied back to that person. At the end of

the year, they had this big reception where they would come in and honor the people and

there were displays. It was really moving, but I felt like throughout the entire year, we

spent a lot of time building to this one pinnacle moment.

So yeah, we had archived in a way, but then what? What happens? It's public for that

moment. We had books published, but then those get – it just felt like, 'I think we can do

this better, in a more meaningful way.'

As noted earlier, Sandy had continued her education throughout her career by enrolling in

course work at our institution, but she also spoke of co-learning in her classroom:

And I model everything I do. I write with them. I read on occasion with them. We read

closely. We talk about what that means, model that. We write based on what they read,

or the content area, text – the depth of text. They would write longer pieces and we'd just

follow the writing process and I model and conference and we go to the library every

other week together as a class and we talk books all the time…I have to take them where

they are, wherever they are. And I work really hard to convince them that everybody is a

leader and everybody is a writer and by the end of the year you will be a better reader and

a better writer.

All three teachers understood that teacher leaders are those teachers who continue inquiry

into their practice whether it is seeking an advanced degree, engaging in professional development

seminars, keeping field notes from her own classroom, or partnering with a strong peer mentor

who contributes to her learning.

Teacher as Advocate. All three teachers believed that advocating for their students

(both individually and collectively) was a criterion for teacher leadership, echoing Hunzicker

(2013) and Collay (2011). Camille noted that advocating for her students meant she maintained

open communication with parents:

> 'So and so did not do their homework. They need to have it turned in by tomorrow,' and
>
> then the kids come in the next day, and they're like, 'Oh, my gosh, you e-mailed my
>
> mom?' and I'm just like, 'Yep. Well, sorry.' So they know very early on that I have this
>
> complete open communication, and I am working with your parents, and I think it blows
>
> their minds a little bit, because a lot of, I mean, a lot of teachers don't do that…so I love
>
> being able to do that for my kids and create that open – we're kind of like a little family,
>
> and I'm gonna – we're gonna work together to get this done.

For Camille, advocating for her students was directly related to constant communication

with their parents. She spoke extensively about the number of emails she sent on a weekly basis,

because for her it was important that parents understand that she did, indeed, care about the

intellectual and physical well-being of her students. Camille also said that she spent a great deal

of time browsing websites to find grant opportunities (and taking the time to write the grants)

that could fund her classroom library or provide money for technology projects.

Katrina describes how she advocated for a student athlete who was secretly writing poetry and whom she encouraged to submit poetry to their literary magazine:

There was one guy who had throughout the year brought me poetry that he had written and imagine the most macho, I mean ripped teenage boy that looks unnaturally huge, like, just ginormous dude who's constantly, like, puffing his chest out, really trying to be as manly as possible, really quick to be angry and, like, wanted to seem very intellectual and – but then wanted to hide it and couldn't, would bring me these poems and would ask for my opinion and so I suspected that he was writing [laughs] them, like, but he would never really admit to it and he opted to be a writer for the [literary magazine] but he told everyone he was helping with graphic design and he was kind of doing dual things but writing was, like, what he was really after.

So he wrote a couple of poems, submitted them in our – the – Selection Criteria Committee made sure that everything was anonymous so everything filtered through me. They wanted all names taken off of everything and everyone was assigned a number instead. And so anonymously things were rated. He was in the Top 20 percent. His poem got picked and he, like, yelled and he was, like, all excited in class. He's like, 'That was my poem, guys' and it's, like, 'What? Like you wrote that? Whatever,' like, and he's talking about, like, started saying, like, 'Writing poetry isn't a girl thing.'

Advocating for students was the highest priority for Katrina. She was constantly self-assessing ways in which she could improve the instruction in her classroom to meet the needs of her students. She particularly honed in on how to make learning meaningful for students whom most would have considered, "checked out." Because this was her greatest priority, she worked

tirelessly to enact her online literary magazine. For Katrina, advocacy for students was directly tied into her community literacy project.

As a veteran teacher, Sandy was more comfortable advocating for a student with personal dire circumstances. She was undeterred by what some younger teachers would have considered a risk if seeking tenure:

> Last year, my project was Chloe, and her dad came at parent-teacher conferences, and he was this six-foot five, broken, physically broken, man who sat in front of me and cried, like I'm crying now, and said, 'I can't do it. I have to have help. These are – this is my daughter, and I don't want her to make the same mistakes I've made.' And then I got the backstory, you know, a short version of the backstory, and I said, 'Well, here's the deal. You know, every year, I have a project, and they don't know who they are.'
>
> But this year, I will tell her, and she will know that I am there. You know, I am on her shoulder and her conscience. And so she would sign – write her names on her papers, 'Chloe, Your Little Project.' And she had a hard year, got suspended multiple times for alcohol and tobacco and I don't think any drugs, but alcohol and tobacco multiple times. And while she was suspended, I would write to her, which I think we're not supposed to do that – I don't care, really. I don't care. You know, if they're gonna get me, then they can get me for doing that. They just can. And she would write me back.

Sandy was willing to sacrifice her own teaching career at the expense of advocating for a student who clearly needed one-on-one attention and care. Because Sandy had lived her entire life in the community, she knew the needs of many of the families and at-risk students. As a teacher whom parents trusted, she displayed a keen understanding of the need for privacy when interacting with the marginalized in her rural community.

Teacher as Mentor. All three teachers acknowledged the role of peer mentors in shaping their leadership ability. Shillingstad, McGlamery, Davis and Gilles (2015); Hunzkicker (2013); Poekert (2012); Edwards and Hinueber (2015) acknowledge that developing collegial relationships is essential in developing teacher leadership dispositions, that is, the act of seeking side-by-side support of peers is crucial in developing teacher leaders. Sandy didn't speak about her peer mentors but acknowledged she had been a mentor many times over the years and would have two novice teachers in her building the next year. She noted that one thing she would do as a peer mentor was to validate them as teachers. She said, "And we as teachers really don't receive much validation. That's where I'll slogan. And I think maybe that's why I'm so passionate about what I'm doing because I feel like teachers don't get that." She also acknowledged it would be helpful if she could have training sessions for the staff and assist them in teaching. As novice teachers, Camille and Katrina both spoke of influential peer mentors. Camille's relationship with fellow ELA teacher Katie made the difference in her new school after an experience in her first school where she had no mentor:

> And I think, too, is they're always – they're always reflective, and they're always seeing that they can learn from other people. It's not, 'Okay, my – I am the top dog; I'm done. Everything you do is awesome.' And [Katie] and I have had a lot of conversations about how she's learned from me, and I've learned from her…And I think that's what a mentor-mentee relationship is going to be. It's not the mentor telling you everything, but you're going to gain insight from both perspectives. So, I think that's a good teacher leader mentor.

Katrina's mentor was her district's instructional coach and former department head and she spoke about consulting him concerning her anxiety in her new role:

And I was humbled, but it was really hard at first, because I was the rookie and so like

Brian really had to kind of like push me out of the nest. Because I would still like let him

lead meetings and still let him do some different things. It's helped we've had some like

different turnover in our department. And so that's kind of like shaken up our dynamics

a little bit. And I've just gotten more comfortable with being more bold. And Brian and I

have really started to work really well as a team, like a leadership team.

Camille and Katrina both spoke about their mentors as teachers who were willing to think

with them, rather than the expert who believed she or he had all the answers. Both of their

mentors understood that the best way to support them was to encourage them to get their feet wet

and try new strategies or move beyond the four walls of the classroom. And that it was alright to

fail, because in order to be a creative or innovative teacher, failure is an integral part of the

process.

Teacher as Creator/Innovator. Faulkner and Latham (2016) characterize a teacher's

creativity as having a growth mindset and a sense of an adventurous life. Citing Dweck, they

characterized growth mindset where "challenges are embraced by those welcoming change, as

there is belief in intended growth. Effort therefore is seen as worthwhile while failure and

receiving feedback is positive, guiding further improvement" (p. 138). They link "adventurous

play to rigorous work that fosters creativity, and can produce innovation essential for all fields of

endeavor" and see adventurous teachers as those,

    …who embrace change, seek new challenges, take risks, are resilient and face fears.

    They continually expand their teaching and learning both for themselves and their

    learners. Adventurous teachers undertake a lifelong learning quest, a journey into the

unknown both physically and intellectually, building and strengthening their professional

identities. (p.140)

Henriksen and Mishra (2015) in a study of past National Teacher of the Year award finalists

describe creative teachers as those who engaged in intellectual risk-taking, cross-disciplinary

curricular connections, and whose creativity in their personal endeavors contributed to their

professional creativity, "The teachers…described creativity not as a process or skill that is

discrete or separated from other thought processes, but as an integrated aspect of their thinking"

(p. 18).

Camille's field trip to an outdoor writing site and subsequent public poetry slam were

considered creative and innovative, but she also spoke about developing podcasts centered upon

argument writing by constructing a murder scene where students had to collect evidence,

indicating she was consistently utilizing practices to enhance learning. Katrina's online

community literary magazine displayed risk-taking innovation and creativity. She gave over the

reins of her classroom to her students who became responsible for all the important decisions for

their magazine. Students made decisions about whose work was published, how the webpage

was designed, how they marketed the magazine, who they consulted with, how they

communicated with rejected authors, and how they publically launched the magazine. Katrina

aligned with Faulkner and Latham's (2016) concepts:

Yeah I've grown more confident in taking risks and I think our administrator has really

done a great job at making it a safe place to fail and that was something I was never good

at. I was good at everything academically growing up and so I didn't like the idea of

failing so I was really safe in the beginning, like, stages of teaching, like, I take a lotta

risks because I don't want this to go badly but I've loosened up enough to say, like,

'Okay we can learn from just as much from failure as we can from success and maybe even more' and so I want to take these, like, risks within the classroom and so I think that naturally bleeds also into, like, leading out and teaching other – encouraging other – teachers to do crazy [laughs] things, like, and I get really excited about it, too.

Sandy was also clearly a risk-taker who was willing to forego school policy in keeping a dialogue going with an at-risk student while she was out of school for disciplinary reasons. Sandy's personal creativity clearly influenced how she taught writing in her classroom. As a talented poet and writer, she brought that creativity into her classroom every day.

Teacher as Risk-Taker. Teacher leaders are creative and innovative lifetime learners who advocate for their students and work collegially with their peers. Camille, Katrina and Sandy overwhelmingly spoke of community literacy as a trait of teacher leadership. For each of them, that connection to their community members played a significant role in what it means to be a leader. But enacting community literacy projects means they must become risk-takers who aren't afraid to fail, learn, and revise or try again. In my own work in a secondary school, there were failures and experiences I revised from year to year, trying to get at the best ways to approach literacy through practices that enhanced learning and meaning-making.

Although Camille and Katrina were both new and untenured teachers who considered it risky to engage in community literacy due to expectations of teaching the curriculum, they both enacted their projects. Both had strong relationships with district administration and constituents who supported their projects' efforts. Shillingstad, McGlamery, Davis and Gilles (2015); Edwards and Hinueber (2015); Ringler, O'Neal, Rawls, and Cumiskey (2013); and Nappi (2014) concur a school's principal plays a key role in developing teacher leaders. Poekert (2012) writes that teacher leaders must take risks and be vulnerable. Neumann, Jones and Webb (2012) note

that teachers who act as leaders improve the entire school community, not just manage their

respective classrooms:

> Teacher knowledge is much more than knowledge of what happens in a classroom, more
>
> than understanding content knowledge, pedagogical content knowledge, learning
>
> theories, and classroom management strategies. Being a teacher means becoming a
>
> professional leader who is active in the political environments of the school and the
>
> broader community. (p. 10)

Camille maintained a close relationship with her administrator and requested and

received funds and transportation for her students to enact her literacy project. She spoke

enthusiastically about her poetry slam project:

> And then with the community, the two times that I was able to really utilize the
>
> community was our field trip and the poetry slam for this semester, at least, but the kids
>
> were so bought into it. Their engagement was through the roof, and they were dreading
>
> the poetry slam, but then once they got there, and the atmosphere, and they were hearing
>
> everything the kids were saying, I mean, it was just through the roof. I couldn't have
>
> asked for a better first experience doing that unit, 'cause I had never done it before. I
>
> mean, it was perfect.

Katrina had the unequivocal support of her building administrator who was actively

engaged with her students throughout the process. Katrina's principal empowered her and her

students to enact their literary magazine:

> He was a huge resource to us and really supportive of – like really excited when you
>
> come to him, like, 'I want to scrap this whole novel to do this. Can we do that?' He says,

'Yes, how can I support you? Yeah do it. Go make it happen. Whatever is going to

support learning better.'

We were in the commons, because I just wanted to be out of my classroom. So I'm using

the lunch tables. Students were working on things. And I walked over to him. I was like,

'They want to do a literary magazine.' And this was one of my most apathetic group of

seniors. He was like, 'If they already want to buy a ticket on the rocket ship let's fly the

thing.' Those were his exact words. Like if they're already buying in let's do it. He's like

scrap the rest of your year. Let's do this. If they're passionate about it, we have not seen

these kids be passionate about one thing all year long. So let's make it happen.

He was so supportive of it the entire time. He would walk by, one day he came into the

computer lab while they were trying to work, and sat down with some kids. And so he's

excited, and he's willing to take a risk and then be like, 'Oh, it didn't work very

well. We'll try something else.' He's not afraid of it. It's awesome.

The success of Camille and Katrina's community literacy projected hinged upon the

support of their administrators and his or her belief in the expertise of them as teacher leaders.

Both saw increased engagement in their students, especially Katrina. She noted that her senior

students were unmotivated and usually showed up to "go through the motions" until graduation

day. Sandy had strong relationships with her constituents and was considered a community

leader, but she felt she had never had a true administrative leader:

Over time the leadership that I've experienced has really been on an individual basis. I've

had no administrators who were teacher leaders and instructional leaders for me ever.

None that had anything to offer about what I already knew. So everything that I have

done has been trial and error and on my own, or networking with other teachers in the

building or other teachers in the same content area.

Despite a lack of support from her administrator, Sandy continued her own community literacy

project in her selection of a "student project" where she sustained a personal relationship

throughout the school year.

These three teachers learned what I learned so many years ago, enacting community

literacy cannot happen without the support of a lot of people. Without my administrator's

support or the engagement of community members, my students would not have had the chance

to learn that they were vital and contributing members of our community. They would not have

learned that literacy is more than reading a novel or writing a five-paragraph essay. Through

enacting a community literacy project, they learned that it's important to give voice to everyone

in a community and there are many citizens who serve as experts and resources. They also

learned what it meant to have an authentic inquiry that asked them to bring their curiosity into

focus.

Conclusions

Teacher preparation programs interested in preparing teacher leaders who enact

community literacy projects must first begin emphasizing in their curriculum the kinds of

literacy practices that facilitate ongoing communication with administrators and constituents.

The role of the building principal is key in supporting teachers who might fear failure or

pushback from the community or students. Administrators must support the freedom to ask the

compelling questions focused upon the needs of our communities. Teachers need support in

developing these skills necessary to advocate for structured time to co-create literacy projects

that can enhance and sustain local communities through economic, cultural, or environmental

investigations. Moreover, teacher preparation programs must continue to encourage and nurture

teachers to be curious explorers who investigate issues or concerns in their community, and

acknowledge that failure can elicit deeper meaning for teachers and their students.

References

Anderson, J. (2007). *Everyday editing: Inviting students to develop skill and craft in writer's workshop*. Portland, ME: Stenhouse.

Brooke, R. (Ed.). (2003). *Rural voices: Place-conscious education and the teaching of writing*. New York and Berkeley: Teachers College Press and National Writing Project.

Brooke, R. (Ed.). (2015). *Writing suburban citizenship: Place-conscious education and the conundrum of suburbia*. Syracuse, NY: Syracuse University Press.

Collay, M. (2011). *Everyday teacher leadership: Taking action where you are* (Vol. 14). John Wiley & Sons.

Edwards, B., & Hinueber, J. (2015). Why teachers make good learning leaders. *Journal of Staff Development*, *36*(5), 26-29.

Faulkner, J., & Latham, G. (2016). Adventurous lives: Teacher qualities for 21st century learning. *Australian Journal of Teacher Education, 41*(4), 137-150.

Flower, L. (2008). *Community literacy and the rhetoric of public engagement*. Carbondale, IL: Southern Illinois University Press.

Gallagher, K. (2011). *Write like this: Teaching real-world writing through modeling & mentor texts*. Portland, ME: Stenhouse.

Haas, T. and P. Nachtigal. (1998). *Place value: An educator's guide to good literature on rural lifeways, environments, and purposes of education*. Charlestown, WV: ERIC Clearinghouse on Rural Education and Small Schools.

Heard, G. (1999). *Awakening the heart: Exploring poetry in elementary and middle school*. Portsmouth: Heinemann.

Heard, G. (2013). *Finding the heart of nonfiction: Teaching 7 essential craft tools with mentor*

texts. Portsmouth: Heinemann.

Heard, G. (1995). *Writing toward home: Tales and lessons to find your way*. Portsmouth:

   Heinemann.

Henriksen, D., & Mishra, P. (2015). We teach who we are: Creativity in the lives and practices

   of accomplished teachers. *Teachers College Record*, *117*(7), 1-46.

Hobbs, R., & Moore, D. C. (2013). *Discovering media literacy: Teaching digital media and*

   popular culture in elementary school. Thousand Oaks, CA: Corwin Press.

Hunzicker, J. (2013). Attitude has a lot to do with it: dispositions of emerging teacher leadership.

   Teacher Development, *17*(4), 538-561.

Jenkins, H., Kelley, W., Clinton, K., McWilliams, J., & Pitts-Wiley, R. (Eds.). (2013). *Reading*

   in a participatory culture: Remixing Moby-Dick in the English classroom. New York:

   Teachers College Press.

Lamott, A. (2007). *Bird by bird: Some instructions on writing and life*. New York: Anchor.

Nappi, J. S. (2014). The teacher leader: Improving schools by building social capital through

   shared leadership. *Delta Kappa Gamma Bulletin*, *80*(4), 29-33.

Neumann, M. D., Jones, L. C., & Webb, P. T. (2012). Claiming the political: The forgotten

   terrain of teacher leadership knowledge. *Action in Teacher Education*, *34*(1), 2-13.

Poekert, P. E. (2012). Teacher leadership and professional development: Examining links

   between two concepts central to school improvement. *Professional development in*

   education, *38*(2), 169-188.

Ringler, M. C., O'Neal, D., Rawls, J., & Cumiskey, S. (2013). The role of school leaders in

   teacher leadership development. *Rural Educator*, *35*(1), n1.

Robbins, S. and M. Dyer. (Eds.). (2005). *Writing America: Classroom literacy and public*

engagement. New York: Teachers College Press.

Seidman, I. (2012). *Interviewing as qualitative Research: A guide for researchers in education and the social sciences*. 4th ed. New York: Teachers College Press.

Shillingstad, S., McGlamery, S., Davis, B., & Gilles, C. (2014). Navigating the roles of leadership: Mentors perspectives on teacher leadership.

Sobel, D. (2004). *Place-based education: Connecting classrooms and communities*. Great Barrington, MA: Orion Society.

Welch, N. (2008). *Living room: Teaching public writing in a privatized world*. Portsmouth, N.H.: Boynton/Cook.

Winter, D., & Robbins, S. (2005). *Writing our communities: Local learning and public culture*. The National Council of Teachers of English, 1111 W. Kenyon Road, Urbana, IL 61801-1096.

Making History a Verb in Literacy Research

Douglas K. Hartman, Norman A. Stahl, & James R. King

Our premise within this paper is to make a case for an expanded perspective for the conduct and use of history within our field. Let us begin with a simple premise. Here we point to a statement in a recent article that provided the rationale for a graduate level course on the history of literacy instruction in which King and Stahl (2012) stated, "Literacy education has a 'secret' history. It is a secret because so few in the profession know about it. … At this point, the literacy profession is not systematically aware of its past" (p. 241). Hence, we advocate for a greater presence of historical perspectives and the underlying historiography of and for literacy. We will present a defense of history, a case on behalf of history, a proposition outlining what we believe is a new understanding of history for the profession, and finally a set of opportunities for integrating history into graduate-level teaching and mentoring of students.

With these objectives in mind, an underlying message we share is that each of us holds the onus to be both knowledgeable and regular consumers of the historical record and current historical research and also to ensure that our students will likely develop such an academic worldview as these provide the very foundation of the profession. If such is not the case, it can be called into question whether we are members of an actual discipline or profession.

Defending an Action Approach to Historying Literacy

Given the premises that have just been presented, is there a need to actually defend the role of history in the literacy profession? We believe that such is the case, so let us continue by making and briefly examining two defensive-minded assertions:

The first assertion: There is no need to defend something that is rarely done. Historical research on literacy and even more so on literacy instruction is rarely done, so

why defend it? Stated in somewhat of reserve logic, there's a dearth of evidence to support this assertion.

A thorough search of WorldCat demonstrated might be called a banner and quite unusual year for books if you were interested in literacy before the modern era. Indeed, there were rather interesting works pertaining to Roman Judea (Wise, 2015), medieval Europe (O'Mara, Blanton, & Stoop, 2015), imperial China (Dennis (2015), 16th century Europe (Van Orden, 2015), and a historical tour de force from Socrates to digital literacy (Furedi, 2015). Topics associated with the history of literacy instruction were strikingly absent. A similar search of JSTOR, Psych Info, ProQuest, Google Scholar, ERIC, American History & Life, EBSCO Host, and others yields about 16 articles in 2015 on the history of literacy (two were published by scholars in the literacy field while the others were from authors crossing a range of academic disciplines). And a search of Proquests Dissertations & Theses worldwide of 505 literacy-oriented dissertations produced two dissertations defended on the history of literacy, both focusing on China. In contrast, how many books, articles, and dissertations were published in 2015 on disciplinary literacy, or comprehension, or vocabulary instruction? And yet, it is dubious whether these many studies even addressed the historical bases of the very constructs researched.

So why defend a mode of literacy research that is rarely done by literacy researchers who hold appointments in schools and colleges of education, and who attend conferences promoted by scholarly associations such as the Literacy Research Association (LRA), the American Educational Research Association (AERA) the American Reading Forum, or the Society for the Scientific Study of Reading or the large

theory/research to practice oriented conferences such as that delivered by the

International Literacy Association (ILA) or the National Conference of Teachers of

English? We will get to an answer there.

Our second assertion: There is no need to defend something that is not being

attacked. A defense is made in response to--or in anticipation of--an attack on something

that is actually 'present' in some sizeable way. Who has been attacking the paltry

presence of historical research on literacy in the last decade or two? or three? or

more? There is no one of which we know. For sure, there are the insider scholarly

squabbles that serve to clarify this interpretation of an era, person, and idea, or, a

particular teaching practice and instructional material. But if we were to assume the type

of attack such as delivered against qualitative methodologies in years past, there is just

not the same type of attack leveled at the meager body of historical research on literacy.

"Out of sight, out of mind" is far more that an overworked cliché, but an actual

description of the historical community in literacy.

So why defend a mode of literacy research that is rarely conducted, not attacked

and all too often unknown, overlooked, or simply ignored? What is there to protect,

guard, safeguard, secure, or shield? Why defend a body of literature or scholarship that

often passes from current interest to the deepest recesses of a library's basement archives

or an academic version of the dark web in a matter of milliseconds?

Although this article is not the venue to spell out all the good reasons for

defending historical research on literacy--you can read these perspectives in their entirety

across the scholarly articles and chapters authored by members of the now defunct

History of Literacy Special Interest Group of the ILA and the History Integrated

Community Group of the LRA (e.g., Moore, Monaghan, & Hartman, 1997; Stahl & Hartman, 2011). We do believe that this article is the forum in which to suggest that it is the time in the discipline to view it history and practices of historiography through a new lens.

The Case on Behalf of Historying Literacy

Historical research matters more than any of the other types and topics of research presented annually at literacy conferences or in impactful literacy journals. We know that such a statement sounds like the teenage cheerleading at a sports event of "We're Number 1, We're Number 1" … but before dismissing it, let us first put forth three arguments that explain why historical research on literacy is so central to the literature that pervades our scholarly journals, edited texts/handbooks, and other authored works in spite of its relative absence in print. As the most read book in western history says, "The least shall be the greatest among you" (Luke 9:48). And in our case, the least published and paid attention to area of literacy research is really the one of greatest importance. We present three arguments for consideration.

The first argument we call the *Rigor-in-the-Method Argument.* By rigor in method, we mean that the history of literacy provides a unique, one-of-a-kind rigor for understanding the field quite unlike that achieved with other methods of research. It goes without saying that doctoral students and master's students undergo training in procedures and protocols for understanding, critiquing, and conducting a range of qualitative and quantitative research methods. The importance of rigor is impressed upon them throughout the training, and it certainly is driven home during the dissertation experience. However, we propose that there is a third opportunity to train graduate

students in the importance of having rigor in method. The field of historical research in literacy (as opposed to the history of the field knowing full well that one cannot truly divorce the two) employs a research model (Stahl & Hartman, 2011) that is built upon a degree of rigor that is of equal strength as that observed in the qualitative or the quantitative methods making up the vast majority of studies in the field. The practice of historiography provides a third form of methodological rigor in the ongoing quest for knowledge and understanding of literacy processes and products. Further, it is a forum for triangulation across research methods.

We suggest that the processes of choosing the topic, collecting evidence from primary sources and appropriate secondary sources, evaluating evidence through external criticism and internal criticism, working with evidence, analyzing and interpreting evidence across categories such as time, informant, and subject, and then finally writing the scholarly paper, article, dissertation, or book all the while avoiding critical errors such as presentism, the teleological fallacy, and vagueness provides a fundamental understanding of processes that should be undertaken in all other forms of literacy research (Sears, Hartman, & Monaghan, 2010a; Sears, Hartman, & Monaghan, 2010b; Sears, Hartman, & Monaghan, 2010c).

The second argument we call the *Language-for-the-Future Argument*. By language for the future, we mean the history that literacy provides a language for the future. And our future is one where "historical and cultural competency" is a social, political, and economic imperative, right now, in the contemporary world. Many of us grew up in an era where our teachers regularly informed us that the world was getting smaller and smaller. Still, little could we have contemplated a world so intertwined that

an action in China or Greece could influence the number of individuals able to attend an ILA Convention.

To be sure, the notion that the historical study of educational/literacy practices, cultures, materials, and languages is necessary for negotiating the complexities of the modern world is scarcely novel (Downing, 1973; Stahl, 2002), but it may be downright scary to think of it in the second decade of the 21st century. Still it is the history of various nation states, cultures, and groups of people that allows us to understand the present and approach the future. Furthermore, it is the history literacy and its pedagogy in each of these constructs that provides the cornerstone, if not the full foundation, of each individual society and to a greater degree the life events each and every day in a single global society. We can only talk about our future by fully understanding and appreciating the past. Furthermore, it is clear that such an understanding and appreciation no longer knows national borders. For instance, to understand the fallacy underlying the American fascination with the Finnish education system, you have to not only know both the American system and the current Finish system but more so one must understand 1,000 years of Finnish history.

The third argument is the *Nothing-is-Permanent Argument*. Here we mean the history of literacy forms a mindset that is fitting and necessary for this era: *Nothing is permanent or certain*. In the long-term, the most stable findings are to be viewed as provisional, at best. Given more data, another perspective, a different instrument, another population, a new or revised question, a novel setting, or some other "another," a truism that looks so permanent now will be understood in a different way at some future time. To know the history of literacy's past is to realize that the only thing of permanence in

defending our research is change itself. For example, when Donald Durrell found in his 1958 *First-Grade Reading Success Study: A Summary* that knowledge of letter names was the best predictor of later reading achievement, a strongly formed historical mindset understands that he had identified a *provisional finding* that would be fordone, undone, redone, or outdone when instruction in other eras, other contexts, using other writing systems (some of which have no letters at all, or even letter names), when other approaches were studied. Each of you with your own areas of specialization can think of examples where this phenomenon strikes home. Whether change comes as a massive tsunami sweeping away all in its path or whether it comes through predictable increments, a common pattern of our time is that we cannot hope to understand the universe of change without understanding what came before in time and what has also been removed in space.

Expanding the Zeitgeist of History for the Literacy Profession

The preceding arguments might be considered logical support for a "history as usual" vantage. They are certainly convincing in that regard. Now, we ask you to expand your current understanding of history, to adopt a new perspective which we believe would have major benefits to our field. Consider the word *History* and its underlying concept. Think of your past experiences across your lifespan with history. Most of you immediately think of something like your eighth-grade United States history class or maybe your college freshman experience with a class in world civilizations or perhaps that couple weeks in a doctoral class where you perused or more likely skimmed *American Reading Instruction* by Nila Banton Smith (2002). We can conjecture that you most likely see "History" as a noun. Yet have you ever considered that the word would

have far greater and far reaching impact upon society and our discipline for that matter if we considered it to be a verb, and an action verb at that?

Our rhetorical task emerges as how to project our desire for "more history of literacy" onto others, a persuasive argument. Consider then, literacy is in need of a change up in grammar and vocabulary related to this problematic lack of history (because everyone *loves* some grammar). So, let us now also consider *history* as a verb, as in "This paper will *history* literacy." What would the entailments of such a grammatical shift involve? Acknowledging the awkward roll on the tongue, the verb *history*, *to history*, would involve activities in literacy that engage with antecedent events, people, material objects and practices involved in the uses of literacy, or as it once was known, reading. We *history* literacy by inverting our field, making it a context within which to conduct historical inquiry. Think of it as a reversal on disciplinary literacies. However, from a literacy perspective, the inquiry itself (the historical work) is an instantiation of the field of literacy. It is a doubling effect. This is the same persuasive talk literacy folks have been shelling to the disciplines, but redirected to ourselves. After all, literacy must be about something, one, place, event….

Let's then consider a more concrete example that serves as an exemplar for our proposition. Last week, while engaged with a struggling third grader, one of the authors and his friend, the third grader, took a tutoring break to look at some 360-degree Virtual Reality videos on a Googlecardboard viewer. Needless to say, the tutoring partner was blown away (not to mention his older brother and mother). The third grader spontaneously produced verbal protocols while he watched the Virtual Reality examples in www.with.in.com He also read aloud (or at least attempted to do so) textual messages

that played across the screens. A record of his protocols was recorded. Looking back on the protocol, it is evident that he hit most of the comprehension strategies that are recommended by Tovani (2000). Very easily, almost completely, he summarized each of the videos. After all, he was the only one to see what had transpired, so a summary for the non-viewers seemed a reasonable communicative request. In reader responses like those recommended Bleich's (1978) in *Subjective Criticism*, this third grader brought out the underlying romance revealed by a boy and girl in one of the with.in VRvideos as the film's protagonists flew paper airplanes across a chasm and into each other's windows. In talk after viewing the videos, he compared the VR experience to both regular, 2-dimensional videos, and (surprise to the adult) a Viewmaster. So, what can this mean in terms of *historying* literacy?

First and most importantly is the ability to see previous literacy practices as they occur in newer media contexts. We do not necessarily mean electronic media. For example, consider a reader's or teacher's abilities to see reading "strategies" in the context of a picture book (rather than in the basal where the strategy might have been taught). In the case of the previous example, *historying* the VR event meant importing text-based comprehension strategies, and reader response originally designed for textual literature. Clearly, these historical practices are applicable and even productive. But how do we access them if we start with VR, *a novum*.

Latour (1999) argues that the texts we "interpret" are in many ways bound to the very interpretive versions we thought we "developed," that is, our interpretations are based on meaning inherent in artifact, practices, and rituals. In his analyses of science knowledge, prior to the 1600's Latour notes that "we are relatively sure of many of the

things with which are daily engaged through the practice of our laboratories." Yet, the very surety was in fact based "on a number of relations established within the world." (p. 4). "Relations," in this context are established, entextualized meanings that adhere to and are inherent in cultural objects and actions. Much cognitive research has sought to account for this inherent meaning. Early research by Eleanor Rosch (1973; Rosch, et al., 1976) and her colleague Carolyn Mervis (1980) sought to establish bases for shared understandings different cultures may have for the categorization of common nouns. Following from norms created by Battig and Montague (1969), Rosch established exemplars (most representative) and scales of representation for the various examples of concrete nouns (e.g., category furniture, examples chair, sofa, table). Rosch established ranges of prototypicality for various exemplars. Is the meaning *in* the object? No, of course not. It's just a piece of wood. But, if the response within a bounded culture is so regular and reliable, it is safe to say that the meaning resides within, or is connected with, or is *instantiated* by the object or its label and thereby validating Latour's thesis.

More recently, the objectivist conceit has been surrendered to constructivism, and "objective reality" resides in individual minds. Latour's critique reminds us that previous versions of reality are not retraced to their point of "error" but live on in a pastiche of palimpsest. As a result, Anderson (2016) suggests "we have found ourselves hopelessly entangled in a thicket of conflicting perceptions of reality of the means by which we understand reality [epistemologies], and the methods we can use to accomplish the means – conflicting paradigms" (p. 34, elaboration ours). More directly, Anderson quotes Gray's (1968) commentary on Heidegger; echoing Heidegger's belief that "the only way to go forward is to return to the origin and seek a new beginning." (p. xiv). The point of

this matrix of citation is to reveal the deep value in *historying* literacy by engaging with previous instantiations of an idea. It is a fact that previous manifestations of any idea continue to circulate in a cultural context. Often, literacy people may be using the same literacy term and meaning very different things, or talking about the same literacy phenomenon but using different labels. Historical antecedents are the place where these conflicting and overlapping meanings come out to play.

The Virtual Reality (VR) video cannot have come into existence without the accompanying history of how it came to be. We suggest that an important part of comprehending a VR video (not to mention any other text of any other modality) is the need to entextualize the current experience as a consequence of the iterations that preceded it. Instrumentally, the VR is preceded by video (and several version of that – VHS, Beta, DVE, iMovie, MovieMaker,…), preceded by home movies on 8mm, preceded by photographs, film, paintings, cave drawings, and so on. We wonder, what does it cost in understanding when the present version is all that is known?

It is reasonable that these questions of origin, development and evolution were not in the mind of the third grader when he was captivated by 360-degree videos. Nor do we suggest that they should have been. Rather, he was appropriately engaged with what VR's textual array had to offer. This is a user's engagement with text. But, what about his teacher? In order to isolate a "strategy" from a stream of student behavior, the teacher needs a notion of strategy, what they are, what they do, from where they emerge whether as a strategic/cognitive process or as a simple parroting of "prototypic strategies" as proffered in reading series and K-12 methods books. It is necessary that the professionals who teach understand the emergence of strategy, how strategies differ from skills, when

and where skills and strategies are in harmony and in conflict, and how they might assist/deter the work of an individual reader. This is our professional repertoire and knowledge of it contextualizes the choices we make on behalf of our clients. (Ironically, the term *strategy* was used as a verb in its earliest renditions in the *Oxford English Dictionary*.)

An Example of Historying Reading Intervention

Perhaps using an example from the hierarchy of the eight moments of modern literacy instruction (cf. King & Stahl, 2012) will *history* literacy more directly. During the Clinical Moment of literacy certain components of reading instruction was based on medical models. Individual "problem," "disabled" or "remedial" readers (presumably readers not making the grade in classroom-based instruction) were brought to reading clinics, whether university, private, or school district based, to be tested with assessments thought to measure all manner of reading sub-strata (word attack, syllabication, main idea, structural analysis, …), as well as possible "deficits" in perceptual acumen, attention spans, memory capacities, and, most importantly, IQs. The underlying thought was that once the missing element was identified, it could be rigorously taught, the missing part grafted or otherwise restored, and functional reading resumed. Or, in the case of depressed IQ scores, expect less from a struggling student. This is literacy work of Durrell (1937) [later edition with Catterson], Harris (1940) [later editions with Sipay], and Bond and Tinker (1957) [later editions with Wasson and Wasson] as example scholars.

In the Cognitive Moment (King & Stahl, 2012) that followed, young readers were also taught individually, but from a somewhat different perspective. Specially trained and

socialized teachers (Lyons, Pinnell, & Deford, 1993; Deford, Lyons, & Pinnell, 1991)

carefully observed and recorded young "at-risk" readers" literacy behaviors in order to

determine what they controlled, to step in when it is productive to do so, and to actively

shape the emerging reader to the point of recovery (or performance at an "average" band

in the students' classroom). In addition to the work of Reading Recovery, cognitive

modeling of the literacy mind was the work of the scholars from the Center for the Study

of Reading at the University of Illinois at Urbana-Champaign. For more context, see

Spiro, Bruce and Brewer's (1980) *Theoretical Issues in Reading Comprehension:*

Perspectives from Cognitive Psychology, Linguistics, Artificial Intelligence, and

Education and the first edition of the *Handbook of Reading Research* (Pearson, Barr,

Kamil, & Mosenthal, 1984).

Currently, in a time of managed, curriculum-based, whole class reading

instruction, individual instruction in literacy is reserved for Tier 3 students who have

been strained through the sequence of triage in Response to Intervention (RtI). To reach

desired outcomes in school, some students may require additional or unique instructional

strategies or interventions beyond those typically made available. Tier 1 interventions are

designed for whole class interventions, where 80% of students will successfully respond.

In Tier 2, at-risk students receive small group interventions designed to meet the needs of

those students who fail Tier 1 interventions. In Tier 3, individual students receive

intensive reading support from specially trained learning assistants, such as reading

teachers. But placement decisions in RtI result from considerations three sets of factors:

1.) comparisons to other students in the class; 2.) against an established benchmark for

the competency; and 3.) as a result of triage from Tiers 1 & 2 (Ervin, n.d.). As a result,

students who continue to experience reading difficulties despite the class-wide interventions can be referred to grade-level teams and considered directly for Tier 3 intervention supports (Ervin, et al., 2006). For example, if the information collected suggests that the student has the prerequisite skills needed to decode connected text but does so slowly, one hypothesis is that the student has not had sufficient time to practice reading to develop fluency. An appropriate intervention for this student might focus on building reading fluency through an intervention that involves increased reading practice, such as repeated reading. In general, the intervention processes for fluency training at Level 3 are more intensive and individualized than would be the case at other Levels 1 and 2.

To say, as one might, "we've always had one-to-one instruction in literacy" is in some ways a truism. But such an assertion misses so much nuance, valuable descriptive detail, and teleological stances contained within each of these three example paradigms (and others like them), which define and use "individualized literacy" in very different ways. These forgotten or overlooked instructional facts and social habits from the history of reading are what shaped teaching choices as they were enacted by in-the-moment teachers, as well as influencing teachers' selection of specific procedures and materials. However, when we *history* one-to-one literacy instruction, a very different picture develops. In the first example, the reader is a medical client, acted upon and (hopefully) cured. In the second, cognitive example, the reader is "recovered" by a carefully observing teacher and her cadre of support teachers, who all study the observation data, compare it against established norms and conjure ways to get the "struggling reader" up to snuff. In the third example, Tier 3 may mean more of the same, but with an individual

teacher. As expected, in a curriculum-based model, students do not change, only the way they are treated by the curriculum.

Isolated historical facts, like the use of hornbooks, and reverence for antique text artifacts, like McGuffey Readers, are interesting and important to literacy folks working in the history of literacy as a workspace. But we suggest that acquisition of isolated historical knowledge and artifacts will do little to situate the field in its successive historical contexts. In fact, reverence for "things historical" fetishizes history in a freeze frame of collected objects. Rather, different teachers working with all different ages of readers must be able to know a practice in its current use, and its previous uses. This deeper knowing involves both syntagmatic and paradigmatic understandings (Bynon, 1977). A syntagmatic approach to a construct distinguishes it from all that presently surrounds it, or how the practice or construct operates in relation to other practices at that time. For example, a syntagmatic approach highlights how *word attack* might function in relation to comprehension, or how it might differ in balanced literacy and RtI applications. In contrast, a paradigmatic approach to reading practices considers a particular practice, technique or material as it has manifested across time, like the category of word attack practices through the decades. Making history a verb invites our clients, teachers of reading, are able to *history* their way into and across reading practices. But we can also history our way through reading research.

A Recent Example of Historying the History of Reading

Issuing from the ongoing work of Jim Hoffman and Donna Alvermann's (2016) analyses of Nila Banton Smith's *History of Reading in America* (HRA) – a fascinating comparison of HRA 1934 and 1965 – Alvermann cautions that using a causal frame of

reference in historical analysis is inconsistent with the authors' chosen Foucauldian geneology. Her caution is intended to help us avoid the trap of causal thinking, that X caused Y, something that Michel Foucault rejected in his genealogical model for doing historical research (cf.: *Birth of the Clinic, Madness and Civilization, Discipline and Punish*). This is the model Hoffman and Alvermann have chosen for their analyses across versions of Smith's *History of Reading in America.*

The following is our uptake and elaboration of their genealogical practices. As an example of this type of analysis, consider the idea or practice in question, for example reading group size, or teachers' grouping criteria, as it occurs in relation to the surrounding phenomena, object, practices, and ideas. Linguistics uses the term syntagmatic to describe the function of a bit of language, say a word, in its immediate semantic, syntactic, and morphophonemic contexts (Bynon, 1977). Linguists often use syntagmatic in contrast with paradigmatic, or looking at a single item, or phenomenon as it occurs across various examples or instantiations. Syntagmatic is a handy word to analogously describe what goes on in genealogical analysis in literacy. The point is to hypothesize what enabling conditions brought forth the practice, the idea. Clearly, the thing itself is not actually new, but the understandings now associated with it *are* new. This alternative historical approach is strikingly similar to Deleuze and Guatarri's (1987) rhizomatic approach, which has had some play in literacy by Kevin Leander's and Deborah Wells-Rowe's (2006) treatment of spatial literacies, and Joyce Masny's (2012) text on Deleuzean applications to literacy. Deleuze and Guattari credited Henri Bergson and his philosophy of becoming for their theories of emanance and emergence (Deleuze,

1990; Grosz, 2005), and that notion of things always in process informs our own recommendations about viewing, using, and making history.

What we are recommending is that the sedimented, taken-for-granted practices within the field of literacy might be understood differently if they were treated to successive genealogical tracings as they correspond with what we have previously called the Moments of Reading Instruction (King & Stahl, 2012). Of course, the carving up of time into moments is not the point here, as any heuristic for parsing elapsed time will do. We merely suggest our history of reading moments as a convenient, extant model. So successively situating a construct that re-occurs across our history, as a field *is* the point.

To return to the avoidance of cause and effect thinking, for us the impact has been a realization that by not engaging in cause and effect thinking, we also avoid the overly determined, ready-made relationships which also exist in our field as objects. Because they are overly determined, cause/effect relationships reveal little new insight. At Deleuze and Guatarri's urging, we follow the co-occurring, or what they call *enabling* lines of flight; until a rupture of something unexpected happens; an insight, a conflict, a noticing, a wonder. But neither the overly determined cause and effect, nor the enabling characteristics, nor any of the emerging knowledge is taken as "truth." It is simply not the goal of the inquiry. Furthermore, emergent thinking can (and sometimes does) lead one back to cause and effect relations, as the following example reveals.

Alvermann and Hoffman presented several facts about Nila Banton Smith and the various editions of her text. In the 1934 version, Smith rhapsodizes on the benefits of a progressive, child-centered approach to reading instruction in what sounded like a Language Experience Approach (LEA). In another fact, according to Hoffman, in the

1965 edition, Smith completely deleted this section of progressive pedagogy that sounded like LEA. Coincidentally around this same time as the 1965 Edition, LEA again became accessible to the profession. This is an approach to teaching that proceeded from an experience shared with students, to talk about the experience, to writing down the talk, and learning to read from the talk that was written down. Stauffer (1965), Van Allen and Halvorsen (1961) were champions for this approach, though they were both predated by Gans (1941) and Lamoreaux and Lee (1943). But one might contend that LEA did not explode on the scene as a popular approach until after the Reading Study Project in San Diego (Van Allen, 1962) (see Hall, 1970, 1977; Stauffer, 1970; Van Allen, 1976; Veatch, 1973).

So, this difference in Smith's editions is a fact, which is then played against a diachronic framing. "What factors were in play for Smith in 1934?" asks Alvermann. Smith was then a new PhD recipient, eager to publish her dissertation, facts also provided by Alvermann. But in 1965, a perhaps different Nila Banton Smith produces a different version of her text. Alvermann asks us to sit with these facts, bring our own perspectives to bear on the set of circumstances. When she mentions the possibility of our cynicism tainting the analysis, there is an unleashing of pent up restraint. Out pops "At what point did NBS become involved with authoring basal reading material?" Might an endorsement of child-authored texts used for reading instruction (as in LEA) be perceived as a conflict with sponsoring a basal approach? Our "discovery" about Smith's decision making, conceived in the hands of Hoffman and Alvermann (2016), is not so alarming or clever as was felt at the time. Further, such a quick *explanatory* response may foreclose on alternative ideas. Also, it is probably impossible to determine the veracity of this

thinking, and it may even be too cause-oriented for Foucault. Perhaps the *conclusion* was *too* quick, certainly without support, but gathering support for this hypothesis would be the work of more traditional historical methods. But again, we are not after truth with a capital T, but instead interested in generating emergent thinking about historical facts and artifacts. Maybe Smith did delete the remarkable progressive methods from her subsequent editions to make *History of Reading in America* consistent with her basal text authoring. Maybe it is merely a coincidence. In any case, we now are joined with new thinking about Smith, her multiple editions of HRA, and our reasoning on profit and motive.

Implications

Collectively, we think that these arguments have consequences. That is, they form an imperative for action, the type of action we call "A Mandate for Historying Research on Literacy." Hence, in closing we sketch out features for a proactive plan of action for the field.

1. Advocate for Doctoral Students. We need to advocate for doctoral students to have a course and set of coordinated experiences in historying their discipline of literacy and literacy instruction, research, materials, etc. Furthermore, we strongly believe that such an experience must go well beyond the simple reading of *American Reading Instruction* (Smith, 2002) so as to lead students to interact with primary sources (whether actual historical artifacts or authentic facsimiles) as found in collections at schools such as Northern Illinois University and the University of Kansas; and to become knowledgeable on a range of seminal secondary sources (e.g., Manguel, 1996; Mathews, 1966; Monaghan, 1991; Suarez & Woudhuysen, 2013; Venezky, 1984, 1987). Every

doctoral student should undertake a historying study, more than the simple presentation of the march of time, before the candidacy stage as was undertaken by Wyatt (1992) or by Dillon (1985) for the University of Georgia doctoral program. By focusing on doctoral students, eventually every program for master's students and undergraduates will have faculty who know, value, and integrate history into their teaching, research, and service, and more so, that possess and value a professional and perhaps sophisticated personal world view that comes from experiences in historying the discipline. To be sure, there are a handful of doctoral programs in the country that deliver courses and experiences on the history of literacy (King & Stahl, 2012). But these offerings are not the norm for doctoral programs. And given the number of doctoral programs in literacy are growing, it is all the more likely that the next generation of doctoral students and members of the professoriate will not have undertaken a course or experiences to ensure historical depth or breadth.

Given this proposition it serves us to drill down into this point a bit more and return to our first argument Rigor in the Method. When one considers the research training that doctoral students receive in the second decade of the 21st century, we see individuals expected to be expert in either qualitative methods or quantitative methods, with "survival competency" in the other. The basic standard for the field is that the student needs to be able to at least read the research found in peer-reviewed journals and the ever-growing number of non-refereed but highly influential technical reports and policy white papers, and content-related postings.

Drilling down to the standards: In only the very rare case will an individual receive training in historiographical methodology. There is little wonder that such is the case in 2015 as it was the case in 2005, 1995, 1985, and so on. If you do not have a cadre

of literacy professors trained in methods beyond the two predominant avenues for research, the dearth in preparation will continue for the marginalized ways of examination and hence, greatly limit alternative ways of knowing and evaluation of theory and research. Indeed, without doctoral students receiving explicit training in the historical method as well as both breadth and depth of instruction in the historying of the theory, research, and pedagogy of the literacy field, doctoral programs are giving but lip service to the ILA's 2010 Standards for Teacher Educator Candidates, which require candidates to: 1. Analyze historically shared knowledge in reading and writing scholarship and explain its role in an evolving professional knowledge base and 2. Reevaluate the relevance of historically shared knowledge for meeting traditional print, digital, and online reading education goals.

Such a situation has led to a form of myopia in practice where a related literature section of an article or even a chapter two of a dissertation need not trace research or practice back beyond a decade or two plus or minus the years of that author's work in the field or the work of the individual's dissertation director. At the very best this practice brings to light a fundamental weakness in a graduate student's training, if not actually a blaring deficit in an individual's professional zeitgeist regardless of positioning in the field.

We must prepare a generation of scholars that not only knows and values our historical accomplishments, but also understands and accurately critiques our follies. While many in our field are willing and able to offer critique in any number of topics, there are few who can or will provide critique from perspectives of historying the field. More so, we must impart an inherent value, if not an ethical stance, to each new

generation of scholars that it is their responsibility to protect our history from those who would misconstrue, if not blatantly misrepresent, the past for their personal gain or agenda.

2. Advance within/beyond professional organizations. A productive start would be to design and fully incorporate a presence within organizations that don't currently have a historical conscience. The next step is to expand and empower literacy history's presence in those organizations that have already taken the first steps of recognition. In a sense, this action begins with the appointment of both an archivist and an historian, and if such positions exist, the empowering of these individuals through direct charges as well as expanded support for historically oriented projects. Associations such as the LRA have embraced these advancements through sponsorship of a special interest group (Innovative Community Group) and a Historian, who conduct active oral history projects. (At the time of this writing, the History of Reading Special Interest Group of the ILA had recently folded.)

Examples of projects in the spirit of historying the field that explore and promote the history of the profession by the nation's associations, as well as by state and local chapters, might undertake include:

- Create a book, monograph, pamphlet series, or web page on "all things historical" related to literacy focusing on and analyzing the mission of and past contributions of the respective association and its particular individuals;

- Sponsor a "New London-like" seminar with sessions on topics, issues, instructional practices, curriculum, and materials all historically considered;

- Sponsor historying oriented webinars and podcasts that could be used beyond the moment of their debut for wider dissemination within master's and doctoral programs;

- Sponsor exhibits at annual meetings such as presented by Jennifer Monaghan and Arlene Barry at the 1999 International Reading Association Convention (see Monaghan & Barry [1999] for the Catalog);

- Present *living history sessions* at annual meetings. Living history would include pedagogical enactments of historical events such as a reading or writing lesson in 1843, or dramatic portrayals of historical figures such as Edmund Burke Huey, William S. Gray, Jean Chall, and others (see Hartman, D. K., & Davis, D. H. [2008] for an informative as well as entertaining example);

- Undertake oral history/life history projects designed to preserve the human library of the field's heritage before it is lost to the times. These projects can be saved either as traditional interview/transcripts or with new technologies such as with iMovies, (King, 1991; Stahl & King, 2000) as well as other forms of biographer research (Hoffman & Alvermann, 2016; Denzin, 1989); and

- Create www sites such as developed by the Reading Hall of Fame (http://readinghalloffame.org) where literacy students and faculty can review biographically oriented sources pertaining to the field's elite personage, both living and deceased.

Conclusion

We offer a final, although provisional, point: our field only becomes a profession when the members of our field can define, interpret, discuss, debate, and value our

history from various perspectives (social histories and critical histories as opposed to simple chronicling). Those individuals who are not the architects of historical thought must be critical consumers and perhaps enactors of history, people who *history* literacy. The key here is that there are multiple ways to interpret and use the past. Furthermore, each time we look at the past through a different lens we begin to understand our current era and gain the foresight to envision futures. Hence, understanding the historical foundations upon which current theory, research, and praxis rest is the key to our ability to construct the present as well as to propose postulates about futures in the field. In other words, it is time to start historying in your professional work, in your classes, and as an important aspect of your personal mindset.

References

Anderson, A. (2016). "Out of the everywhere into here": Rhetoricity and transcendence as common ground for spiritual research. In J. Lin, R. Oxford, & T. Culham (Eds.), *Toward a spiritual research paradigm* (pp. 25-53). Charlotte, NC: Information Age Publishing.

Battig, W. & Montague, W. (1969). Category norms of verbal items in 56 categories: A replication and extension of the Connecticut category norms. *Journal of Experimental Psychology, 80*, 1-46.

Bleich, D. (1978). *Subjective criticism*. Baltimore, MD: Johns Hopkins University Press.

Bond, G. L., & Tinker, M. A. (1957). *Reading difficulties: Their diagnosis and correction*. New York, NY: Appleton-Century-Crofts.

Bynon, T. (1977). *Historical linguistics*. Cambridge, UK: Cambridge University Press.

Deford, D., Pinnell, G.S., & Lyons, C. (1991). *Bridges to literacy: Learning from Reading Recovery*. Portsmouth, NH: Heinemann.

Deleuze, G. (1990). *Bergsonism*. Cambridge, MA: MIT Press.

Deleuze, G. & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia.* Minneapolis: University of Minnesota Press.

Dennis, J. (2015). *Writing, publishing, and reading local gazetteers in imperial China, 1100-1700*. Cambridge, MA: Harvard University Press.

Denzin, N. K. (1989). *Interpretive biography*. Newbury Park, CA: Sage.

Dillon, D. (1985). Ira E. Aaron: A qualitative case study of a career history. *Georgia Journal of Reading*, *11*(1), 18-25.

Downing, J. (Ed.) (1973). *Comparative reading: Cross-national studies of behavior and processes in reading and writing*. New York, NY: Macmillan.

Durrell, D. (1937). *Durrell analysis of reading difficulty*. Yonkers on Hudson, NY: World Book Co.

Durrell, D. (1958). First-grade reading success study: A summary. *Journal of Education*, *140*, 1-6.

Ervin, R. A. (n.d.). Considering Tier 3 within a response-to-intervention model. *RTI Action Network*, Retrieved from www.rtinetwork.org

Ervin, R. A., Schaughency, E., Goodman, S. D., McGlinchey, M. T., & Matthews, A. (2006). Moving research and practice agendas to address reading and behavior schoolwide. *School Psychology Review*, 35, 198–223.

Furedi, F. (2015). *Power of reading: From Socrates to Twitter*. London, UK: Bloomsbury Continuum.

Gans, R. (1941). *Guiding children's reading through experiences*. New York, NY: Teachers College Press.

Gray, J.G. (1968). Introduction. In M. Heidegger, *What is called thinking.* (J.G. Gray, Trans.). New York, NY: Harper.

Grosz, E. (2005). Bergson, Deleuze and the becoming of unbecoming. *Parallax, 11*(2)*, 4-13.

Hall, M. A. (1970). *Teaching reading as language experience*. Columbus, OH: Charles Merrill.

Hall, M. A. (1977). *The language experience approach for teaching reading: A research perspective* (2nd ed.). Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills & Newark, DE: International Reading Association. (ED 147 799)

Harris, A. J. (1940). *How to increase reading ability: A guide to diagnostic and remedial methods*. New York, NY: Longmans and Green.

Hartman, D. K., & Davis, D. H. (2008). Edmund Burke Huey: The formative years of a scholar and field. In Y. Kim, V.J. Risko, D.L. Compton, D.K. Dickinson, M.K. Hundley, R.T. Jimenez, K.M. Leander, & D. Wells Rowe, (Eds.). *57th Yearbook of the National Reading Conference* (41-55). Oak Creek, WI: NRC.

Hoffman, J. V., & Alvermann, D. (2016, December 1). A genealogical analysis of Smith's *American Reading Instruction*. Paper presented at the annual conference of the Literacy Research Association, Nashville, TN.

King, J. R. (1991). Collaborative life history narratives: Heroes in reading teachers' tales. *Qualitative Studies in Education*, *4*, 45-60.

King, J. R., & Stahl, N. A. (2012). Toward a systematic study of the history and foundations of literacy. *Reading Psychology*, *33* (3), 241-268.

Lamoreax, L. A., & Lee, D. M. (1943). *Learning through experience*. New York, NY: Appleton-Century-Croft.

Latour, B. (1999). *Pandora's hope: Essays on the reality of science studies*. Cambridge, MA: Harvard University Press.

Leander, K. M. & Wells-Rowe, D. (2006). Mapping literacy spaces in motion: A rhizomatic analysis of a classroom literacy performance. *Reading Research Quarterly*, *41* (4), 428-460.

Lyons, C., Pinnell, G.S. & Deford, D. (1993). *Partners in learning: Teachers and children in Reading Recovery*. New York, NY: Teachers College Press.

Manguel, A. (1996). *A history of reading*. New York, NY: Viking-Penguin Books.

Masny, D., & Cole, D. R. (2012). *Mapping multiple literacies: An introduction to Deleuzian literacy studies*. New York, NY: Bloomsbury Academic.

Mathews, M. (1966). *Teaching to read: Historically considered*. Chicago, IL: University of Chicago Press.

Mervis, C. (1980). Category structure and the development of categorization. In R. Spiro, B. Bruce, & W. Brewer (Eds.) *Theoretical issues in reading comprehension: Perspectives from cognitive psychology, linguistics, artificial intelligence, and education* (pp. 279-307). Hillsdale, NJ: Erlbaum.

Monaghan, E. J. (1991). Family literacy in early 18th century Boston: Cotton Mather and his children. *Reading Research Quarterly*, *26*(4), 342-370.

Monaghan, E. J., & Barry, A. L. (1999). *Writing the past: Teaching reading in colonial America and the United States 1640-1940, The catalog*. Newark, DE: International Reading Association.

Moore, D. W., Monaghan, E. J., & Hartman, D. K. (1997). Values of literacy history. *Reading Research Quarterly*, *32*(1), 90-102.

Murphy, G. (1982). Cue validity and levels of categorization. *Psychological Bulletin, 91*, 174-177.

O'Mara, V., Blanton, V., & Stoop, P. (2015). *Nun's literacies in medieval Europe: The Kansas City dialogue*. Turnhout, Belgium: Brepols.

Pearson, P. D., Barr, R., Kamil, M. L., & Mosenthal, P. (Eds.), *Handbook of reading research*. New York, NY: Longman.

Rosch, E. (1973). Natural categories. *Cognitive Psychology, 4*(3), 328-350.

Rosch, E., Mervis, C., Gray, W., Johnson, D. & Boyes-Braem, P. (1976). Basic objects in natural

    categories. *Cognitive Psychology, 8* (3), 382-439.

Sears, L. A., Hartman, D. K., & Monaghan, E. J. (2010a). *Connecting to others who do research*

    on the history of literacy. Retrieved from *www.historyliteracy.org/publications.html*.

Sears, L. A., Hartman, D. K., & Monaghan, E. J. (2010b). *Disseminating research on the history*

    of literacy. Retrieved from *www.historyliteracy.org/publications*.

Sears, L. A., Hartman, D. K., & Monaghan, E. J. (2010c). *Locating data for research on the*

    history of literacy. Retrieved from *www.historyliteracy.org/publications*.

Smith, N. B. (2002). *American reading instruction* (special edition). Newark, DE: International

    Reading Association.

Spiro, R. J., Bruce, B. C. & Brewer, W. F. (Eds.) (1980). *Theoretical issues in reading*

    comprehension: Perspectives from cognitive psychology, linguistics, artificial

    intelligence, and education. Hillsdale, NJ: Erlbaum.

Stahl, N. A. (2002). Comparative reading. In B. J. Guzzetti (Ed.), *Literacy in America: An*

    encyclopedia of history, theory, and practice. (Vol. 1, pp. 82-85). Santa Barbara, CA:

    ABC-CLIO.

Stahl, N. A., & Hartman, D. K. (2011). Historical research. In N. K. Duke & M. H. Mallette

    (Eds.). *Literacy research methodologies* (2nd ed.), (pp. 213-241). New York, NY:

    Guilford.

Stahl, N. A., & King, J. R. (2000). Preserving the heritage of a profession through California

    Reading Association oral history projects. *The California Reader*, *34*(1), 14-19.

Stauffer, R. G. (1965). A language experience approach. Editor J.F. Kerfoot. *First grade reading*

    programs, Perspectives in reading (5) Newark, DE: IRA

Stauffer, R. G. (1970). Language experience approach to the teaching of reading. New York,

NY: Harper & Row.

Suarez, M. F., & Woudhuysen, H.R. (2013). *The book: A global history*. Oxford, UK: Oxford

University Press.

Tovani, C. (2000). *I read it but I don't get it*. Denver, CO: Stenhouse.

Van Allen, R. (1962). Three approaches to teaching reading. *Challenge and experiment in

reading: Proceedings of the International Reading Association*, *7*, 153-154.

Van Allen, R. (1976). *Language experiences in communication*. Boston, MA: Houghton Mifflin.

Van Allen, R., & Halvorsen, G. C. (1961). The language experience approach to reading

instruction. *Contributions in Reading*. Boston, MA: Ginn.

Van Orden, K. (2015). *Materialities: Books, readers, and the chanson in sixteenth-century

Europe*. New York, NY: Oxford University Press.

Veatch, J. (1973). *Keywords to reading: The language experience approach begins*. Columbus,

OH: Merrill.

Venezky, R. L. (1984). The history of reading research. In P. D. Pearson, R. Barr, M. L. Kamil,

& P. Mosenthal (Eds.), *Handbook of reading research* (pp. 3-38). New York, NY:

Longman.

Venezky, R. L. (1987). A history of the American reading textbook. *Elementary School Journal*,

87, 248-265.

Wise, M. O. (2015). *Language and literacy in Roman Judaea: A study of the Bar Kokhba

documents*. New Haven, CT: Yale University Press.Wyatt, M. (1992). The past, present,

and future need for college reading courses in the U.S. *Journal of Reading*, *36*(1), 10-20.

Preparing Future Teachers to Teach Literacy in the 21st Century: Utilizing Digital Literacies in

Literacy Coursework to Foster Applicable Classroom Practices

Chrystine Mitchell

Pennsylvania State University: Berks Campus

Introduction

Preparing future teachers to face the unique challenges of teaching in the 21st century is becoming not only an area of great prominence for teacher educators, but it is also becoming a professional responsibility. The changing demands of our classrooms and the incorporation of digital devices transforms how teachers navigate a space where there is a shared place for both traditional classroom practices and those that require knowledge of digital literacies and multimodal texts. These "new" literacies are socially accepted means in which people, "generate, communicate, and negotiate meanings, as members of Discourses, through the medium of encoded texts... and include examples such as, blogging, manga producing, podcasting, along with (traditional examples) like letter writing, reading literary novels, and so on" (Lankshear & Knobel, 2006, p. 50). We need to consider how we are preparing pre-service teachers to teach in the 21st century and how to equip them with the tools and experiences to make a successful transition into the classrooms.

Researchers recognize that literacies are continually changing and adapting and therefore the relationship between literacies and technology is transactional (Leu, Kinzer, Coiro, & Cammack, 2004). When quantifying "new literacies" Coiro, Knobel, Lankshear and Leu (2008) describe that, "new literacies are identified with an epochal change in technologies and associated changes in social and cultural ways of doing things... literacies are new in a more abiding sense of being a part of a historical phenomenon that is not fleeting" (p. 7). To adequately prepare students for a world in which our definition of literacy continues to change, we need to fully understand the means in which we communicate and how these practices shape current and future classrooms. The responsibility is then thrust on universities, colleges and

teacher educators to help prepare future teachers for this changing literacy landscape where the population of pre-service teachers are fully versed and experienced in digital literacies and multimodal textual experiences.

The purpose of this study was to investigate pre-service teachers' perceptions of technology integration in elementary classrooms and determine how their experiences with using technology help or hinder their general conceptions of teaching in the 21st century. In particular, the investigation looked at the role of a partial immersion approach to teaching literacy through technology with modeled and integrated use of classroom technological applications. Immersion is imperative for a greater understanding of the technological tools (Mason, 2000), and this study investigated an approach to elementary literacy instruction that resulted in the pre-service teachers becoming proficient at multiple modalities of technology and equally adept at using technology in class and in their field placements. Throughout the 3-course literacy block the pre-service teachers utilized multiple mediums of technology. Various web sites and applications were modeled and explored through classroom activities and assignments and then implemented during concurrent field experience placements. Central to this work were the culminating final assessments: a student research inquiry project studying elements of chosen technology integration in elementary classrooms and a classroom vision statement aimed at understanding their views of technology integration for their own classrooms.

The primary research question that informed this study is: How do pre-service teachers perceive technology integration in teaching literacy in elementary classrooms? Three underlying questions also helped to clarify pre-service teachers' perceptions regarding technology integration and their role in future classrooms. Those research questions are: 1) What inspires and contributes to their belief systems? 2) What experiences help to shape their perceptions of

technology integration? and 3) What are the pre-service teachers' perceptions regarding the

incongruities between technology integration at the university level versus technology

integration in elementary classrooms? Since the coursework, experiences, and preparation is

significant to consider how those various components work in tandem and also isolation to help

contribute to the pre-service teachers' perceptions, the research questions were designed to

understand these various elements.

Theoretical Framework

The relevant research paradigm explored the pre-service teachers' perceptions regarding the use

of technology, their experiences using different types of technology and how their coursework,

assignments, exploration and field experience may have shaped their vision for teaching. Social

constructivist and interpretivist paradigms guided the research design, methodology, data

gathering and analysis processes. The study is grounded in research from the fields of pre-service

teacher beliefs and vision (Haverback, 2009; Mercado & Turner, 2010; Parker & Brindley, 2008;

Vannatta, 2010), the growing body of literature regarding technology integration among pre-

service teachers (Abbitt, 2011; Anstey, 2002; Cervetti, Damico & Pearson, 2006; Hixon & So,

2009; Koehler & Mishra, 2009; Vannatta & Beyerbach, 2000), and how the TPACK framework

(Mishra & Koehler, 2006) grounds our understandings of technology integration. Pre-service

teachers develop visions of classroom and pedagogical practice through experiences as students,

education course work, and field placements (Parker & Brindley, 2008), which can be shaped

and expanded as they acquire new strategies (Mercado & Turner, 2010).

Processing time, reflective thinking and examining one's beliefs are a powerful means for

understanding teachers' classroom practices and behaviors (Hart, 2004). Additionally, action

research has aided pre-service teachers in their inquiry and evaluation of teaching practices

(Hagevik, Aydeniz, & Rowell, 2012; Hulse & Hulme, 2012). Pre-service teachers often struggle to integrate technology in their field experiences due to the pedagogical complexities and educational contexts (Dawson & Dana, 2007). Yet, researchers found that opportunities for pre-service teachers to utilize technological tools in field experiences encourages technology integration and helped to shape their perceptions and attitudes toward technology integration (Mason, 2000). Pre- service teachers need to learn about technology through modeling and engagement and they need to embrace technology rich environments (Cervetti, Damico & Pearson, 2006; Vannatta, 2000). Most importantly, if pre-service teachers can navigate the technological landscape they can help their students understand how to draw upon various modes to meet the challenges of the twenty-first century (Borsheim, Merritt & Reed, 2008).

The TPACK (Mishra &Koehler, 2006) is a framework to consider the necessary knowledge a pre-service or practicing teacher must have in order to effectively deliver instruction where technology enhances learning. The framework was developed from Shulman's (1986) conceptualization of pedagogical content knowledge (PCK); the knowledge teachers need to teach content effectively. The TPACK framework describes the coinciding areas of knowledge that are integral to teachers being able to teach content effectively with digital mediums and applications. Although the TPACK is an encompassing construct that helps to identify a useful lens to examine teacher knowledge, several researchers have enriched this conceptualization by adding other important considerations. For example, Vaerenewyck, Shinas & Steckel (2014) describe what they call the TPACK+ which is a bi-theoretical framework encompassing the TPACK but also adding sociocultural theory to extend the construct to include socially situated learning within authentic contexts. Similarly, Wilson, Zygouris-Coe, Cardullo & Fong (2013) formulated the M-TPACK that widens the TPACK by incorporating metacognition

and teacher dispositions. M-TPACK describes how teacher dispositions (attitudes, perceptions or beliefs plus personal characteristics) especially toward technology is important to how teachers are able to incorporate technology, their confidence, and their self-efficacy. These constructs illustrate the need for considering not only the knowledge necessary to carry out effective instruction, but also the personal and social influences that are integral to make teaching with technology meaningful and sustainable.

These frameworks are important to practicing teachers and illustrate the many areas of knowledge a teacher must have in order to be successful in teaching content with technology. For a pre-service teacher these areas of expertise are just developing. They are only beginning to understand how to teach content and pedagogical methods to work best in different classroom situations. Therefore, it would seem extremely important to help these new teachers to have ample time, practice and opportunities to explore how to integrate technology. It is almost like learning a new language with an immersion approach, where a new language learner learns the oral, written and conceptual understandings at the same time. By immersing pre-service teachers with opportunities to incorporate technology into their literacy teaching, they should be able to assimilate into this culture of learning.

Methodology

Social constructivist and interpretivist paradigms guided the research design, methodology, data gathering and analysis processes. This method allowed the analysis of the pre-service teachers' contextual worlds through the experiences they shared. I employed a qualitative research design to collect data that answered my research questions (Patton, 2002), and this was an exploratory approach to understanding how pre- service teachers perceive technology integration in teaching literacy in elementary classrooms and what helps to shape their conceptions of technology

integration for future practice.

Partial Immersion Approach to Technology Integration

The literacy education methods coursework is taken together, all during one semester in students' junior year. During the 3-course literacy block numerous opportunities for modeling, exploration, and application were given to the pre-service teachers for both instructional and assessment purposes. Students explored various web sites and applications through classroom activities and assignments. The Substitution, Augmentation, Modification, Redefinition (SAMR) model is utilized throughout the design and implementation of the coursework. The premise is to outline the importance of redefining tasks to ensure students are not just being asked to substitute one outdated literacy practice for another simply by using technology (Puentedura, 2006). In order to design this kind of meaningful instruction, much time and consideration is given to the applications that should be shared and the assignments to demonstrate both proficiency in literacy teaching and technology integration.

The assignments were incorporated into the concurrent elementary field experience placements where the pre-service teachers provided a limited amount of instruction to children and used classroom experiences to implement class assignments in those field placement classrooms. A few of the class assignments included: 1) the creation of a content area video associated with a picture book using iMovie; 2) utilizing wix.com to create an interactive author study web page; 3) the development of a digitalized literacy instruction photo journal representing the gradual release of responsibility model; and 4) the culminating technology-focused action research inquiry projects. This approach was developed because of the need to include technology in pre-service teaching experience. Currently, no integrated technology or educational technology courses exist for students to take as education majors.

Class assignments and projects were integral to the immersion model; however, it was also imperative to use class time for students to play and explore web and tablet applications to understand their use and to begin thinking about their pedagogical implications. Examples of just a few of the web applications that were used during the semester include: 1) Arounder.com where students can take virtual field trips and build background knowledge related to children's literature and informational books; 2) Popplet.com used for organizing thoughts and mind mapping; 3) Pixton.com, an online comic-making tool used as assessment of course concepts; 4) Shadow Puppet, a storytelling app used for creating short videos integrating art, literacy, and technology, and 5) Sock Poppets, an iPad app used to show how to help students creatively work on fluency. The above list is not exhaustive but illustrates a few of the ways in which pre-service teachers were exposed to different tools to expand on literacy objectives using technology.

Selection of Participants

All participants selected to participate in this study were former students enrolled in the literacy block courses. Three cohorts of pre-service teachers comprised the participants of this study, with ten to twelve students in each cohort. The first cohort was conducted as a pilot study. The total number of students included in this investigation was 44. The pre-service teachers were asked to participate in the investigation following their junior-year coursework. During the literacy methods block, each of the juniors take three 3-credit literacy courses: Teaching Reading in the Elementary School, Teaching Language Arts in the Elementary School, and Teaching Children's Literature. The juniors are also simultaneously enrolled in a suburban field placement where they work with a cooperating teacher two mornings per week in a classroom. The suburban school where they are placed has wide access to digital tools including Smart Boards,

Chromebooks, iPads, and multiple computers for daily use in the classroom. The school has a

one-to-one initiative so each of the students has access to their own device.

The pre-service teachers then enter their senior year, with a year-long placement in a

large, urban school with a high poverty rate that coincides with all remaining methods

coursework. In the fall semester they are in courses three days a week and in their placements

for two full days. During the spring those seniors are solely in their placement classrooms. It is

during the students' senior year when they are asked to complete the questionnaire and take part

in focus group interviews. This field placement is in stark contrast to the suburban placement

from the previous year. Each classroom in the schools where they are placed has only two to four

computers available and they are from the late 1990's-early 2000's. The only current technology

consistently available in each of the classrooms is Promethean boards.

Data Sources

Consistent with qualitative research design, various methods of data collection are used in this

study. Anecdotal records, artifact analysis, questionnaires and focus group interviews were the

methods of data collection used. Anecdotal records taken during class sessions recorded

observations of the pre-service teachers' reactions, discussions and overall use of the

technological tools. A baseline reflection was collected in the beginning of the semester that

asked students their beliefs about the role of technology on literacy instruction. The pre-service

teachers also had numerous opportunities in class to discuss and create a teaching vision to guide

future practice. These vision statements were later analyzed to identify patterns about

perceptions, experiences, and beliefs regarding teaching in the 21st century.

A questionnaire adapted from Schmidt, D., Baran, E., Thompson, A., Koehler, M.J.,

Shin, T, & Mishra, P. (2009) was distributed to each of the cohorts of students following their

first semester in their senior year. The questionnaire included survey items taken from Schmidt et al. (2009) to look for specific characteristics related to the TPACK framework that sought to understand the pre-service teachers' experiences and perceptions about integrating pedagogy, content and technology. The questionnaire also included several open-ended questions to give the students an opportunity to elaborate on their ideas, insights and experiences. The questionnaire had 15 survey items using a Likert scale and five open-ended questions.

The focus group interviews captured a more thorough understanding of the artifact analysis and provided an in-depth discussion of the pre- service teachers' perceptions of the role of technology in literacy instruction and assessment. Students who completed the survey were asked to participate in focus group interview. Five students from each cohort were randomly selected to participate in the focus group interviews. The focus group interviews were semi-structured, using the same 15 questions, with follow-up questions being asked when appropriate. The importance of the pre-service teachers' beliefs and perceptions was an attempt to more profoundly understand the phenomenon being investigated.

Data Analysis

I analyzed the data with specific strategies and across multiple sources in an ongoing and systematic manner using content analysis (Taylor-Powell & Renner, 2003) to identify categories and patterns of how pre-service teachers perceive teaching in the 21st century and their conceptions of what that means. Assertions generated from across all data sources and findings, and interpretive commentary connected the assertions. Merriam (2002) described content analysis as analyzing interviews, field notes, and documents so that the researcher can seek to find themes and reoccurring patterns of meaning. Content analysis is also defined as a systematic, replicable technique for compressing words in text into fewer content categories,

based on explicit rules of coding (Stelmer, 2001).

Taylor-Powell and Renner (2003) defined the five steps of content analysis as follows: (1) Get to know your data, (2) Focus the analysis, (3) Categorize information, (4) Identify patterns and connections within and between categories, and (5) Interpretation— bringing it all together.   The students' systematic analysis of the quickwrites, classroom artifacts, anecdotal records, and vision statements helped to create patterns and then themes to generate findings associated with the investigation. Descriptive statistics were used for the survey items to analyze the pre-service teachers' responses and look for patterns in their perceptions and feelings about teaching with technology. Focus group interviews were also recorded, transcribed, and analyzed. Creswell (2009) advocates the need validate the data. The data was triangulated using the analysis and comparison of multiple data sources including the artifact analysis, questionnaire analysis, and interview data. The multiple sources confirmed interpretive accuracy and helped to validate the themes. The evidence was collected and analyzed to understand whether experiences with technology helped to shape pre-service teachers' conceptions of using technology to enhance literacy practices.

Role of the Researcher

Data collection took place throughout the semester with one course instructor. I am both the course instructor and the researcher in this study. The role of the qualitative researcher ranges on a continuum from a fully-present researcher and a co-participant, to a researcher who experiences the investigation, without being fully involved in the events around him or her (Rossman & Rallis, 2003). I had an active role in the study because I am the course instructor implementing the partial immersion approach to literacy instruction. I tried to extricate myself as the center of this work by collecting data following students' coursework and by also allowing

them to speak freely about their experiences. Creswell (1998) suggests that the qualitative researcher often takes on the role of the active learner and tells a story from the participants' point of view, rather than an expert passing judgment. The researcher's role as an active learner is especially important in today's literacy classrooms. Often, the researcher's own knowledge, within the context of observation or study, constraints or broadens what he/she can observe, and, therefore, is in a position to explain and theorize (Steinkuehler, Black, & Clinton, 2005).

Findings

Pilot Study Findings

The first cohort of students served as the pilot study for this investigation. At this early point in the investigation the data collection only involved artifact analysis of the quickwrites, anecdotal records, and the students' vision statements. The data mined from this analysis revealed not only important findings in a general sense, but also provided a foundation from which the exploration could be expanded. Three general themes emerged from the data that converged and helped to clarify the pre-service teachers' perceptions. Those themes were: 1) New learning about technological tools were understood and assimilated; 2) Students had a perceived boost in confidence in using technological tools, and 3) The students' perceived immersion approach as a contributor to their new learning and offered a means to incorporate technology into their future classrooms. Data analysis generated important considerations that led to a wider knowledge base about the pre-service teachers' perceptions regarding the role of technology and its use in elementary classrooms.

First, the pre-service teachers felt the different modalities of technology integration offered them experience using tools they may not have explored on their own. Cervetti, Damico, and Pearson (2006) differentiate between new literacies, which typically involve new

technologies and multiple literacies that extend the many literacies beyond print. The pre-service teachers reported having experience with both kinds of literacies and that each helped shape their conception of how they can be used in an elementary classroom. For example, one pre-service teacher remarked, "The website 'wix' is a new favorite of mine. I could find multiple ways to bring this into the classroom. The students could make their own website about an author or about an historical event. I would also like to incorporate some kind of blog so the students can start learning to be professionals on the computer." Another pre-service teacher discussed how to hopefully keep parents engaged in student learning by saying, "As a teacher I will utilize online bulletin boards, blogs, and webpages to keep parents involved in classroom lessons and events." The analysis revealed the pre-service teachers' beliefs regarding the application of many of the web sites and technological tools. They shared the benefits, challenges and insights about how the tools could be used effectively.

The pre-service teachers also reported an increase in their confidence regarding the use of the tools and how they aided them in teaching literacy. One pre-service teacher remarked, "I feel good about integrating technology into my classroom because of having the chance to use it in our class and see it being used in the second grade classroom." A pattern emerged through the analysis illustrating their desire to continue to use technological tools in future classrooms and to explore new applications to guide their literacy instructional practices.

Finally, the pre-service teachers discussed that the immersion in a technology- saturated classroom positively impacted their ability to engage the students in their field placements. At the beginning of the semester the pre-service teachers reported a minimalistic role on literacy instruction, assessment and student engagement. Following the literacy block the pre-service teachers reported that technology has a significant role on their ability to teach literacy, engage

students and assess content knowledge in meaningful ways. For example, one student suggested, "Making movies on the computer makes information more personal, interesting, and funny... it draws the students' interest more." Another suggested that, "E-books have the potential to change the way our students read and consume texts." Someone said that, "I would want to use technology in my classroom because I firmly believe it can impact a students learning more than worksheets and posters." The pre-service students' comments helped to illustrate their own learning about technology, perceived confidence in utilizing technology, and their belief that the experience in the courses contributed to their learning about not only literacy practices but ways to incorporate technology into elementary classrooms to enhance literacy practices.

Findings from Larger Study

The larger study offered an opportunity to expand on the findings from the pilot study and understand the students' perceptions more profoundly outside of just their junior block experience. The questionnaires and focus group interviews took place during their senior year, while they were in a different school environment, with different cooperating teachers, and had new methods instructors. The same three themes emerged, but the students offered rich and sometimes divergent perspectives related to the identified themes. New themes generated new insights and contributed to the larger study and helped to clarify the students' perceptions, regarding the preparation of future teachers using technology. The themes presented below that expand and enhance the previous findings are: 1) New learning about tools and technology is not always transferable, 2) Pre-service teachers' perceived confidence was contingent on applicable technological practices, 3) Literacy block learning helped provide essential T-PACK experiences, 4) Limited access prohibits meaningful student technology integration, and 5) University practices did not mirror expectations for elementary students. The themes illustrate

the patterns that emerged from the pilot study and were broadened during the larger study.

New learning about tools and technology is not always transferable. The first major

understanding that the students shared was the disconnect between what they learned the

previous year and what they had anticipated using in their senior- year placements and beyond.

They quickly realized that some of that new learning about technology was how *not* to use it.

One of the more insightful perspectives was that teaching with technology does not

automatically mean the learning will be better and the artifacts will be meaningful. The teachers

as the suburban school used technology much differently than those at the urban schools. The

students identified that technology-use was more meaningful. They discussed the student

artifacts as the focus and how those artifacts were entrenched in some kind of literacy practice.

Yet, their current placements in the urban school illustrated that the focus of technology

integration is linked to programs that are purchased by the district and sometimes have no

purpose other than to be an "add-on." They are also sometimes just linked to the basal program

the district is using. Jaime mentioned, "We use programs like Reading Eggs... but it doesn't get

linked to anything else we do" where Donna said, "We put on videos and then just move on to

something else." They understood enough about how technology should be used in classrooms

that they are concerned about the issues they are seeing. Felicia remarked, "Throwing students

on centers on the computers because the school paid for it doesn't make it meaningful." They

noticed that the learning from their previous year could not be used in the classrooms where they

are currently placed. They cannot use sites like arounder.com or powtoons.com because their

cooperating teachers do not have knowledge or comfort using these tools.

The one tool that was not demonstrated or used over the course of the literacy block was

a Promethean Board. They had to jump in and learn how they are used once arriving at their

placements. The students discussed their concern for how the board technologies are being used in their senior-year placements. One student shared, "We use the Promethean Boards but there are so many other things we can probably do that would be meaningful and make it more engaging." They have major concerns about what the other students are doing when only one student is at the Promethean Board and the others are at their seats. They discussed that teachers should be providing meaningful ways of interacting with the content. Ideas shared were whiteboards, magnetic letters and trays, and other tools that students could be manipulating at their seats while the one student is manipulating the Promethean Board. One of the major findings is that the learning that took place during their junior year was not yet applicable during their senior year; however, they all had enough learning to know what they are seeing is not an effective use of technology integration and they instead are trying to create ways and ideas to make the technology more meaningful for students.

Pre-service teachers' perceived confidence was contingent on applicable technological practices. Although the pre-service teachers in the pilot study found a perceived confidence boost, the findings from the larger study are similar but with the caveat that their confidence hinges on the belief that they have relevant technological knowledge. The questionnaire asked the pre-service students to use a Likert 5-point scale to rate their perceived confidence using the following statement: I have an increased confidence to use technology following the LLED course block. The mean score of the participants was a 4.25. They felt much less confident is being able to provide leadership to others related to technology integration. The mean score for the following statement was only a 3.17: I can provide leadership in helping others to coordinate the use of content, technologies, and teaching approaches in their teaching.

They realized that what was learned in their literacy block was only a small portion of the

tools and resources that can be incorporated into classrooms and they want to make sure they have the most current, relevant knowledge possible in their future careers. Stella shared, "If I am in a school that does not provide me with PD with the technology they use I don't know how confident I will be." Felicia followed that by saying, "Last year I felt confident but this year I am a bit doubtful of my own abilities because the only experience we had with technology was in our literacy courses." Fortunately, Laura had a number of technology-rich experiences in her field placements and said, "I feel confident because I have seen so many different things being done in different placements. I have a number or experiences to draw from." They all felt that they had knowledge and expertise they could draw from, but felt as though their experiences during senior year focused on a programmatic connection and did not help them increase their understandings. It is through their own knowledge and the disconnect they see that they realize the importance of focused professional development relative to how technology will be used in the districts where they will be teaching.

Literacy block learning helped provide essential T-PACK experiences. The pre-service teachers remarked about their experience in the literacy block and believed it was helpful to them in order to think about how and what ways technology could be integrated into elementary literacy instruction and assessment. For example, Talia remarked, "Before I thought technology hinders education more than it enhances, but now I think that meaningful uses with technology can help make instruction more focused." The pre-service teachers spoke specifically about the assignments they had to complete for class such as the iMovie and the technology inquiry project. They also discussed the applications that were used in class like sock puppets, shadow puppets, and blendspace, and described the activities in detail, explaining how it illustrated meaningful literacy applications. The questionnaire also revealed their perceptions

about the literacy block and illustrated that the pre-service teachers valued their experience in their literacy block courses relative to the integration of technology. It allowed the students to be exposed to different ways of using technology and it allowed them time to explore different approaches.

Limited access prohibits meaningful student technology integration. Access continues to be a primary issue for meaningful technology integration, and it is exemplified through the words of the pre-service teachers in this study. Access to resources, professional development and time were the three issues discussed by the students. The need for continued professional development was discussed during the focus group interviews. They specifically talked about the importance of professional development related to meaningful technology integration. They saw the program and basal program focus and describe the need for districts to provide meaningful professional development for teachers to enhance learning with technology. One of the survey items asked the participants to select their view of technology integration. The item chosen by over 85% of the participants was, "Collaboration is essential." The only way to make this possible is to provide teachers time to collaborate. Many of the pre- service teachers expanded on this during the interviews saying how limited their collaboration time is and that technology does not seem to be a district focus and therefore there is no time for collaborative conversations among grade levels about this topic.

Time is essential, as are resources. With budget cuts both of these things are harder to ascertain but the pre-service teachers noted the importance of having access to these things. Stella shared, "I think about the inquiry project I did last year with blogging... I would never be able to do that in my current placement because they only have 6 laptops available." Laura also iterated, "We had the space to do the inquiry projects... we had opportunity, guidance, feedback

and time." The time and the resources are integral to being able to try anything and take risks with something new. Technology integration is new for everyone, seeing as it is continually changing. Time and resources need to be offered to teachers and pre-service teachers in order for them to experiment with current technology. The pre-service teachers recognize this and having access to resources, professional development and time as essential.

University practices did not mirror expectations for elementary students. One of the research questions of this study relates to pre-service teachers' perceptions regarding the incongruities between technology integration at the university level versus technology integration in elementary classrooms. I would be remiss as a researcher if I was not interested in what teacher educators can do differently to help prepare pre-service teachers for teaching in elementary classrooms. Several ideas were shared that are worth communicating as part of the findings from this study. First, the students discussed a mismatch between what and how pre-service teachers are expected to teach and what they are being taught. For instance, the university currently has a MacBook requirement for education majors (that is currently being revised). The students often find that thy are being asking to use technology and find ways of incorporating it into elementary classrooms, yet university faculty are still asking them to put their technology away in the classrooms instead of teaching them how to use it appropriately during lectures and classroom activities. Similarly, students need time to put it all together. They need to process how technology is being used (and not used) in classrooms and time to share that information with each other. University faculty should provide time for them to share and problem solve regarding what they are seeing and offer tools to allow them to feel more equipped to face the challenges they are confronting.

An important consideration Laura raised is that both university faculty and teachers/pre-

service teachers have an assumption that just because students grew up with technology they know how to use it. While is it a common understanding that these groups of students were raised with technology, they are not shown how to use technology in meaningful ways and to enhance learning. That becomes the job of the teacher educators and for future teachers to model and provide experiences with tools that will enhance learning. Finally, instructors teach with many different digital tools, websites and applications in decontextualized situations different from a typical classroom setting and often miss more simplistic, practical applications. For instance, it was realized that the pre-service teachers know how to work with fluency apps, create iMovies and websites, and yet they never learned skills they need on a more immediate basis, like how to create flipcharts on Promethean Boards and how to analyze data using Excel spreadsheets. An assumption was made about what students knew and could do and unfortunately a needed skill set was missed.

Limitations

Several limitations exist in this work that should be discussed. The small number of participants and the relatively short time period for interview periods might be considered limitations; however, they suited the limited scope of this investigation and the chosen methodology. If continued, this study will have more information to share about the pre-service teachers following graduation when they are in their own classrooms.

Additionally, a major limitation of this study is my role in the study and my own bias toward a technology-immersion approach to teaching literacy education courses. I am apt to believe the students would gain something from being part of the literacy block coursework and I have the ability to tune into their voices and understand them as future teachers. My use of codes and my method of data analysis allowed me to reduce any of my own previous biases and

allowed me to be able to drill down to a deep level of understanding.

A final limitation is my own knowledge base and expertise about technology and integrating technology. Although I stay as current as possible, technology is continually changing and I can only know a finite amount of information relative to how to integrate technology effectively. I do not know whether what I have deemed the most appropriate or relevant means of integrating technology is the most effective, although I continue to reflect on my practices, survey students, and change my approaches to reflect the students whom I teach.

Conclusion

This study is important to literacy educators because it identifies a growing area of research due to changes in modes and resources related to technology. Given modeling, a chance for exploration, opportunities for application and a means to demonstrate their growing knowledge of literacy methods through technological approaches, pre-service teachers are able to identify the importance of their role in delivering literacy instruction utilizing technological mediums. Through communication and dialogue occurring between groups of pre-service teachers they gleaned important insight, shared relevant challenges for technology integration and described how to make it meaningful. This work illustrates how immersion in technology-based literacy education can prepare elementary teachers for the changing climate of schools. It is equally important to researchers and literacy teacher educators to illustrate how using technology can help provide experience, opportunity, confidence and a means to engage students.

References

Abbitt, J. T. (2011). Measuring technological pedagogical content knowledge in preservice teacher education: A review of current methods and instruments. *Journal of Research on Teaching in Education, 43(4),* 281-300.

Berg, B. L. (2007). *Qualitative research methods for the social sciences (6*[th] *ed.).* Boston: Pearson, Allyn and Bacon.

Borsheim, C., Merritt, K., & Reed, D. (2008). Beyond technology for technology's sake: Advancing mulitliteracies in the twenty-first century. *The Clearing House, 82(2),* 87-90.

Cervetti, G., Damico, J., Pearson, P. D. (2006). Multiple literacies, new literacies and teacher education. *Theory into Practice, 45(4),* 378-386.

Coiro, J., Knobel, M., Lankshear, C., & Leu, D. J. (2008). Central issues in new literacies and new literacies research. In J. Coiro, M. Knobel, C. Lankshear, and D. J. Leu. *The handbook of research on new literacies. (1-22).* Mahwah, NJ: Erlbaum.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five designs*. Thousand Oaks, CA: Sage.

Dawson, K. & Dana, N. F. (2007). When curriculum-based, technology enhanced field experiences and teacher inquiry coalesce: An opportunity for conceptual change? *British Journal of Educational Technology, 38(4),* 656-657.

Hagevik, R., Aydeniz, R., & Rowell, C. G. (2012). Using action research in middle level teacher education to evaluate and deepen reflective practice. *Teaching and Teacher Education, 28(5),* 675-684.

Hart, L. C. (2004). Beliefs and perspectives of first-year, alternative preparation, elementary teachers in urban classrooms. *School Science & Mathematics, 104(2),* 79-88.

Haverback, H. R. (2009). A fresh perspective on preservice teacher reading efficacy beliefs.

Reading Improvement, 46(4), 214-220.

Hixon, E., & So, H. J. (2009). Technology's role in field experiences for preservice teacher

training. *Educational Technology & Society, 12(4),* 294-304

Hulse, B., & Hulme, R. (2012). Engaging with research through practitioner enquiry: the

perceptions of beginning teachers on a postgraduate initial teacher education programme.

Educational Action Research, 20(2), 313-329.

Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge?

Contemporary Issues in Technology and Teacher Education, 9(1), 60-70.

Lankshear, C., & Knobel, M. (2011). *New Literacies (3rd ed.).* New York, NY: McGraw Hill.

Leu, D. J., Jr., Kinzer, C. K., Coiro, J., Cammack, D. (2004). Toward a theory of new literacies

emerging from the Internet and other ICT. In R.B. Ruddell & N. Unrau (Eds.),

Theoretical Models and Processes of Reading, Fifth Edition (1568-1611). Newark, DE:

International Reading Association.

Mason, C. L. (2000). Online teacher education: An analysis of student teachers' use

computer- mediated communication. *International Journal of Social Education, 15(1),*

19-38.

Mercado, R. & Turner, J. D. (2010, April). *New teachers' visions of culturally responsive*

reading instruction. Poster presented at the 55th annual convention of the International

Reading Association, Chicago, IL.

Merriam, S. (2002). *Introduction to qualitative research.* San Francisco, CA: Jossey- Bass.

Parker, A., & Brindley, R. (2008). Exploring graduate elementary education preservice teachers'

initial teaching beliefs. *The Professional Educator, 32(2).*

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. Thousand Oaks, CA: Sage

Publications.

Puentedura, R. R. (2006). Transformation, technology and education. Retrieved from

    http://hippasus.com/resources/tte/

Rosen, L. (2011). Teaching the iGeneration. *Educational Leadership, 68(5),* 10-15.

Rossman, G. B., & Rallis, S. F. (2003). *Learning in the field: An introduction to qualitative*

    research (2nd ed.). Thousand Oaks, CA: Sage.

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009).

    Technological Pedagogical Content Knowledge (TPACK): The Development and

    Validation of an Assessment Instrument for Preservice Teachers. *Journal of Research on*

    Technology in Education, 42(2), 123-149.

Shulman, L. S. (1986). *Those who understand: Knowledge growth in teaching*. Educational

    Researcher, 15(4), 4-14.

Steinkuehler, C. A., Black, R. W., & Clinton, K. A. (2005). Researching literacy as tool, place,

    and way of being. *Reading Research Quarterly 40(1),* 95-100.

Taylor-Powell, E. T. & Renner, M. (2003). *Analyzing qualitative data*. University of Wisconsin-

    Extension.

Vannatta, R. A. (2000). Integrating, infusing, modeling: Preparing technology-using educators.

    Journal of Computing in Teacher Education, 16(2), 6-14.

Vannatta, R. A., & Beyerbach, B. (2000). Facilitating a constructivist vision of technology

    integration among education faculty and preservice teachers. *Journal of Research on*

    Computing in Education, 33(2), 132-148.

Van Vaerenewyck, L.M., Shinas, V.H. & Steckel, B. (December 2014). TPACK+ in the preK-12

    classroom: Examining teachers' technology-integrated instruction. Paper presented at the

    Annual Literacy Research Association Conference, Marcos Island, FL.

Wilson, N. S., Zygouris-Coe, V., Cardullo, V., & Fong, J. (2013). Pedagogical frameworks of

mobile learning technologies in education. For publication in S. Keengwe (Ed.),

Pedagogical applications and social effects of mobile technology integration (pp. 1-24).

Preservice Teachers' Interpretation of the Equals Sign as Multiliteracies

Jennifer Schellinger, George L. Boggs, Ian Whitacre, Zachary Champagne, and
Robert C. Schoen

Florida State University

Abstract

This paper explores multiliteracies of two preservice teachers with respect to a mathematical symbol, the equals sign. Mathematics education research has placed great importance on the development of relational conceptions of the equals sign, while educational standards also emphasize contextual awareness in reading and literacy. We explore interview findings from a larger study related to preservice elementary teachers' context-dependent, multiliterate reading practices of social media and formal mathematical texts. Analysis of interview transcripts suggest the importance of integrating concept development and multiliterate reading goals. The equals sign represents one among many examples of symbols that are or may be re-purposed in novel situations. The multiliterate use of the equals sign presents a microcosm of opportunities and challenges for content area teachers and students.

Keywords: equals sign; mathematics literacy; multiliteracies; operations; teacher education

Recent education reform efforts such as the Every Student Succeeds Act and Common Core State Standards Initiative call for an interconnection of ideas that engage students in skills that will help them become college and career ready and literate across disciplines, with special emphasis on math and literacy. The *Common Core State Standards* (CCSS) present student literacies as the abilities to read, write, listen, and use language to "respond to the varying demands of audience, task, purpose, and discipline" and to "come to understand other perspectives and cultures" (National Governors Assoc., 2010). The math standards are replete with expectations that students recognize and represent equivalence as a fundamental skill and prerequisite for manipulating fractions, algebraic thinking, and geometric problem solving. The competencies highlighted in the Standards depend, with few exceptions, on flexible conceptions of sameness, equivalence, comparison, and multiple equivalent representations. This orientation toward context-dependent interpretation is important. The blending of symbols, expressions, and thinking from formal to informal uses and from school to non-school contexts is a feature of 21st century life in an era in which writing has become a dominant form of mass literacy (Brandt, 2014). Signs and texts are always up for grabs, ready to be carried into new contexts.

A multiliterate view of mathematical language may help resolve emerging challenges facing mathematical literacy. In this paper, we bring a multiliteracies perspective to the task of analyzing ways of using and interpreting a ubiquitous symbol—the equals sign (=). We regard the equals sign (=) as a crucial context for developing mathematical thinking and as a microcosm of the domain of words and symbols used in various ways in mathematics and in a wide variety of ways outside explicitly mathematical settings. We believe that competent engagement in work, civic, and social activities requires that people make sense of the varied ways in which specialized signs are used in and across particular contexts. We also believe that successful

navigation of multiple intersecting languages is the rule rather than the exception for adults and children as the rise of writing as a form of mass literacy intensifies and democratizes evolutionary processes shaping language.

As we consider the development of specialized mathematical understanding for academic and other purposes, we focus on the understandings and interpretations of the equals sign produced by two preservice elementary teachers (PSTs). Elementary teachers typically teach multiple subjects and are thus positioned to help students learn to navigate multiple intersecting academic and nonacademic languages. The diverse contextual possibilities for symbols such as the = underline the importance of guiding children's appropriation of meaning-making tools.

Purpose of the Study

Existing literature in mathematics education does not represent this multiliteracies perspective and, instead, places an inadequate détente or limit on "contextual understanding" regarding multiliteracies, and perhaps much else, if out-of-school expressions of signs and symbols remain out of view. The tendency is to focus on children's orthodox *use* of =, a somewhat anachronistic view given the ubiquity of = in mass writing in social media and advertising. Some researchers have acknowledged that there is more complexity to the issue of how students view signs and text, attending to more detailed distinctions between students' knowledge and use of different representational types (Baroody& Ginsburg, 1983; Jones & Pratt, 2012; Matthews, Rittle-Johnson, McEldoon, & Taylor, 2012). In this paper we argue that conflict between disciplinary norms and transdisciplinary educational goals can be resolved through a multiliterate view of mathematical problem solving. Specifically, we are interested in how = is used and interpreted contextually in settings ranging from school classrooms to advertising and social media. We contextualize interpretations of = as features of "stratified, socio-ideological

languages" (Bakhtin, 1986, p. 196) in which speakers communicate by drawing on prior situated uses of signs and symbols. Reading and writing = manifests ever-present and competing tendencies toward unitary or orthodox meaning and heteroglossic or multi-voiced divergence (Bakhtin, 1981).

Previous mathematics education literature focused on orthodoxy: Ways of using and understanding = generally are related as hierarchies of the kinds of thinking that underpin more and less successful interpretation of school-based mathematical tasks. In particular, researchers have contrasted *operational* versus *relational views* of the equals sign: A superior, *relational view* entails interpreting the expressions on both sides of = as mathematically equivalent. An inferior, *operational view*, by contrast, involves viewing = as one-directional, or as an instruction to perform the operation indicated on the left side and to write the answer on the right side (Baroody & Ginsburg, 1983; Jacobs et al., 2007; Kieran, 1981; McLean, 1964). Students' mathematical development motivates concern over the prevalence of the inferior operational view of = among school children (Falkner, Levi, & Carpenter, 1999; Kieran, 1981; Knuth, Stephens, McNeil, &Alibali, 2006) compared with a more sophisticated relational view that correlates with success in solving algebraic equations (Knuth et al., 2006). In this paper, we argue that such a blinkered view is unrealistic and inappropriate given the broader cultural contexts that students (as well as teachers and others) inhabit. The fact is that literate adults read and write = in varied and situated ways. Instruction, therefore, should recognize these varied ways and focus on helping students attend to contextual clues, so that they become better equipped to use and interpret = appropriately, depending on the context.

Theoretical Perspective

A theory of multiliteracy informs this research by focusing attention on a paradigm shift, pedagogically, from inculcating standard forms of expression to promoting flexible, adaptive reading and writing practices (New London Group, 1996). The following anecdote from a mathematics education course for PSTs illustrates how we view writing and reading = as a feature of contemporary life characterized by intersecting social languages (Bakhtin, 1981). During an activity in which PSTs made sequences of computations with the goal of obtaining a target number, Carol (pseudonym) had used the numbers 7, 3, 10, 1, and 8 to obtain her target number of 2. Presenting her work to the class, Carol used the following written notation to complement mental computations and verbal account of problem solving: $7 \times 3 = 21 - 11 = 10 - 8 = 2$. Following the suggestion of another PST in the class, Carol also wrote the equation $[(7 \times 3) - (10 + 1) - 8 = 2]$ to record her work. Carol's first inscription reinforced the *story* of narrated calculations. The story was composed via multiple complementary modes as an ephemeral mathematical performance legible to her audience *in its multimodal totality*. Her second inscription seemed to serve a different purpose: It represented the set of computations as an orthodox formal expression—an equation—that was mathematically true independent of any other narrative. Students in the class seemed to readily understand both presentations. The first version had the advantage of emphasizing the sequence of computational steps performed, while the second version represented *fit* with understood norms of formally structured equations and revealed a detail that was not apparent in the first version (i.e., that the 11 had come from 10 + 1).

The two presentations *fit* socio-mathematical languages with quite different norms. In both cases, Carol designed information to evoke particular responses from her audience by

drawing liberally on shared repertoires of semiotic tools that listeners could ostensibly recruit effectively with the guidance she provided. Those interpreting Carol's statements indicated they understood Carol's inscriptions contextually and were aware that Carol was free to communicate via ephemeral, heterodox mathematical expressions, yet capable of expressing herself within the limits of orthodoxy. Most importantly for our study, Carol and her peers seemed to understand implicitly that these expressive and interpretive capacities could at least coexist without diminishing one's capacity to access higher status formal mathematics language. Peers interpreted the meaning of the equals signs based on the context of its use in each completed statement, and they flexibly accepted the speaker's use of multiple, intersecting languages. The languages intersect in several places, especially in their use of =, where both Carol and her peers were able to generate meaning *about an act of mathematical thinking* for the sign effectively while preserving the distinctiveness of the sociolinguistic contexts in which it appeared.

A multiliterate treatment of the use of = depends on recognition of interplay among audience, sign, and speaker. For the Russian sociolinguist Bakhtin (1981), whose work substantially influences research in multiliteracies, all three components of this triad are subject to dialogic histories shaping audience's meaning making repertoires, sign's meaning potential in relation to past uses, and speakers' plans in relation to these evolving histories. In this view, reading and writing become social negotiations or transactions that reach backward in time to access certain meaning possibilities as they reach forward in anticipation of audience response.

- Expressions perceived as containing mathematical language, whether explanations or "problems" per se, seek to elicit particular responses from audiences. Some utterances are more restrictive in terms of their expected response.
- Mathematical problem solving and thinking exist in response to prior expressions.

- Mathematical symbols have meaning potential linked, but not restricted, to former uses.

In our experience, examples like the anecdote above occur frequently—not only in courses for PSTs, but in various school and non-school contexts. We believe such episodes can be understood from a perspective of multiliteracies (New London Group, 1996), in which readers and composers navigate multiple languages and forms of expression.

As seen in the anecdote, multiliterate approaches to mathematical expressions draw attention to genre as a way of understanding possibilities for making meaning through the use of mathematical symbols—particularly when math education is seen as one community among many with access to mathematical signs. There are genres, that is, standard and conventional ways of using words and symbols within the mathematical community that are endorsed by textbooks, academic journals, and established mathematical websites and authorities. At the same time, people readily write, read, and speak many of these words and symbols elsewhere, following other genre rules with varying degrees of adherence to 'original' formal uses. Examples of varied ways of using = appear in statements such as "Dave = awesome" and "Bad week + shoe shopping = regret" and "mail + box = mailbox." The equals sign has been exported from both informal and formal contexts in these examples, dragging its genre-based prior meanings with it into new contexts that become part of its future meaning potential. If readers of this article can make sense of such statements, then they too participate in multiliterate interpretations of = as mathematical language is appropriated for new social purposes.

Background

There is a history of mathematics education research concerning students' understanding of the equals sign focusing on the contrast between operational and relational views. Researchers have documented the prevalence of the relational view of the equals sign among school children

(Falkner et al., 1999; Kieran, 1981; Knuth et al., 2006). For example, Falkner and colleagues (1999) found that no more than 10% of the students in Grades 1–6 correctly solved 8 + 4 = □ + 5. Knuth and colleagues (2006) found that fewer than half of students in Grades 6, 7, and 8 showed evidence of relational views of =.

Saenz-Ludlow and Walgamuth (1998) studied how third graders' views of = evolved from operational to relational during a teaching experiment. They documented how students' participation in class discussions and activities influenced their views as they adopted a language of sameness (e.g., reading = as "is the same as"). Mann (2004) advocates activities involving a seesaw, or balance scale, to promote relational views of =. While, Molina and Ambrose (2008), following prior work in this area, suggest the use of true-false equations to engage students in discussions of the meaning of = and to promote relational thinking.

Some authors have acknowledged that there is more complexity to the issue of how students view =. Baroody and Ginsburg (1983) acknowledged complexity in children's understanding of =. They reported, "About half (44%) of the participants were inconsistent in evaluating exposed, a typical equation forms as sensible" (p. 206). In other words, children would sometimes invoke one view and sometimes invoke another. This finding suggests that different conceptions of = coexist as communicative resources. Jones and Pratt (2012) found that students flexibly recruit relational and substitution meanings of = to complete task associated with the creation of arithmetic puzzles. Matthews and colleagues (2012) took a step to expand the relational-operational hierarchy to accommodate flexible conceptions by introducing a construct map for knowledge of =, consisting of the following four levels: *rigid operational* (the lowest level), *flexible operational, basic relational,* and *comparative relational* (the highest level). This model builds on previous research concerning operational and relational views, while

attending to more detailed distinctions between students' knowledge of =. These flexible conceptions of = are unsurprising, considering the various ways in which the equals sign is used.

As illustrated above, math education literature has begun to recognize that views of = are not necessarily mutually exclusive; however, the literature remains narrowly situated within the context of school mathematics. We propose an amendment of operational and relational views of = that takes into account sociolinguistic diversity in an age of mass writing. This view has implications for efforts to assess human understanding of words and symbols, since understanding and language use occurs in a variety of contexts. We consider how people who have ready access to relational views of = in explicitly mathematics-oriented discussions are using = in other stratified, socio-ideological languages. We consider the meanings they invoke to make sense of statements involving = as evidence of the multiliterate environments making demands of today's active and engaged sensemakers.

Method

We planned an investigation to explore the way elementary two PSTs read the equals sign. Our investigation presented PSTs with an opportunity to describe how and whether they engage in multiliterate reading of the equals sign. The design involved conducting an interview with two PSTs to generate data about their processes of reading the equals sign-bearing expressions following the administration of a survey. The survey consisted of a collection of utterances extracted from social media and formal mathematical texts put = to work in a variety of ways. We do not report on survey results here, instead, we explain the nature of the survey as it served as a reference point for the interviews. The quasi-clinical design of this research challenged the two PSTs to re-situate utterances displaced from 'native' contexts, stripped of many clues that might guide how to read a particular statement. To successfully answer

interview questions, we anticipated that PSTs would have to re-situate the texts.

To generate data suggesting PSTs multiliterate reading practices, we asked

1. What multi-literate practices support PSTs interpretation of various statements involving =?

Below, we describe our specific methods of data generation and analysis related to this question.

The Survey

During Spring Semester 2015, we administered a survey to the PSTs who were enrolled in an elementary mathematics education course at a large, public university in the southeastern United States. The survey included 12 statements, consisting of two from each of the five most prominent categories identified in the Twitter data, together with two arithmetic equations. The 12 statements include:

1. one retweet = one vote

2. hair = mess

3. 500 - 199 = ___

4. fresh sheets = sound sleep

5. four wheeler + snow ice = fun

6. CIA = chillin' is awesome

7. today = epic

8. taking off makeup = least fav activity of the day

9. last 24 hours = 0 followers and 2 unfollowers

10. a perfect relationship = two people supporting each other and never giving up

11. $59.99 USD = $75.43 CAD

12. 8 x 3 = 6 x 4

For each of these 12 statements, participants were asked to translate the statement into their own

words and to describe what = meant in the context of the statement. They were also asked whether or not the way of using = was familiar to them and whether or not it made sense to them. Following these responses, participants were asked to look back over all 12 examples and to categorize them. They were free to categorize the statements however they wanted, based on similarities and differences that they noticed.

Interviews

A week after administering the survey, we conducted an interview to investigate PSTs' processes of reading the equals sign. The interviewer invited two PSTs to reflect upon, confer about, and expand upon their questionnaire responses. The interviewer, a faculty member in Elementary Mathematics Education and the third author on this paper, was positioned as a representative of the mathematics education community and an outsider to the world of social media. He inquired specifically about the interviewee's interpretations and descriptions of each of the statements on the survey. He also invited the interviewees to reflect on how they had noticed = being used in social media in their own experience.

The interview transcript (9,300 words) was analyzed to identify patterns in the interpretive practices participants used to make sense of statements involving equal signs drawn from a variety of settings, including formal mathematical expressions. We noted themes in participants' responses indicative of interviewees' reading and writing practices involving =.

Findings and Discussion

We focus on PSTs' interpretations and processing of statements involving = identified from the interview responses centered on the survey they had completed the week before.

PSTs Process of Reading =

The interview provided an opportunity to explore PSTs multiliterate reading of =. Themes emerging in the interview transcript identified patterns in PSTs elaborations on their reading of equal sign expressions in the somewhat constrained environment of the survey. Themes, subthemes, and corresponding experts from the interviews are provided in Table 1 and these themes and subthemes are discussed in more detail below.

Table 1

Themes, Subthemes, and Exemplars from Follow-up Interview

Elaborations on prior survey responses	*Proposing alternative readings by real and potential audiences*	"My mom might be okay with it. My grandpa, he'd want to…bring it back to math which is associated with the equal sign" "They would be like, 'You can't use the equal sign. The equal sign is only for math.'" "When I was really into Twitter…I thought it was the cool thing to use symbols and stuff."
	Connecting to orthodox mathematical language	"It's important for [children] to understand something is applicable in more than one way. It's just another form of abstract thinking…. That might be something they need to think about." "It's asking them to take something they've seen used one way and find ways to correctly apply it to other situations and to do so accurately…. Ask them about it." "This may help them understand that the equal sign can mean 'the same as'." "I feel like if they were able to understand that it could mean that this is the same, then they might be able to think about whether [numbers or expressions] might equal each other."
Reconstructions of context necessary for interpreting expressions	*Situating equal sign expressions in time*	"…in a specific amount of time …. It's just like 'hair equals mess.' It's not like a permanent thing." "Fresh sheets equals sound sleep. I said 'leads to'." "Yeah, you would have to look at the time stamp behind to see. If it was like ten in the morning, she probably slept well. But if it's three in the afternoon she probably wants clean sheets."
	Interpreting technical use of equal sign	"it's sort of more of a pictograph and not a word" "using it in place of a lot of words" "wanting to do stuff as fast as you can"
Multiliterate composition practices	*Situating expressions*	"I use it when I'm texting and I'm lazy and I'm being very informal" "No one would post that…. I would never post taking off my makeup was my least favorite part of the day." "I know I've done it. It's common. It's just the common way to put something. The exact thing might not be what you always mean, but it's similar." "It helps [children in school] use their grammar knowledge of sentence structure and being able to say this is this, as opposed to this equals this."
	Noting divergent meaning	"Either that, or [a person might intend—], I've seen it like, 'She slept well.'" "It made sense, it's just kind of a weird way to put it." "the meaning of that one could probably be more confusing"

possibilities based on context	"That [equal sign expression, "four wheeler + snow ice = fun"] was confusing because I was like, that doesn't sound very fun. It sounds more like disaster waiting to happen." "Now that I've talked about it, I think it means something different than I put down." "I think it always depended on the context." "There's no way to be sure unless you had context." [One interviewee to the other] "My 'sayings' are your 'describes.'" [Referring to a formal mathematical expression as if it may have been posted on social media] "But I don't know Twitter makes me think like, 'Why were they doing that? Were they meaning something to think about?'"

Elaborations on Survey Responses

Interview questions prompted participants to describe in greater detail the responses they supplied in the survey. Transcript data presented numerous elaborations that went beyond conveying the meaning of =. One interviewee proposed a genre-based explanation, shifting the discussion from the meaning of the symbol to the social and symbolic contexts of its appropriate use.

Participant 1: I almost want to say the equals sign is a meme in and of itself because they're just using this one image. Even though it's not a photo, it's still an image. It's a sign, and they're just using the sign to convey meaning without having to say it (Girl on the left shakes her head in agreement).

Interviewer: So, what kind of things have you noticed about how they're using it?

Participant 1: Like in what way?

Interviewer: Are there consistent ways that you see people using it? Is it one way? Different ways?

Participant 1: Definitely like, I feel like it's used in a lot of ways.

Participant 2: Yeah, they're kind of using it in whatever suits their purpose like this makes or equals or sustains.

Participant 1: Or leads to. My day equals terrible…

Participant 2: Using it like was…

Participant 1: Yeah!

Participant 2: They're using it in place of a lot of words.

Interviewer: Does that work? Like does it make sense?

[Both participants nod their heads]

Participants 1 & 2: Yeah, it makes sense.

Participant 1: I don't know if that's because the equals sign has so many definitions or if

we're just so used to seeing it because our day and age of Twitter.

PSTs based many such elaborations on their recognition of the context-appropriate, widespread use of =. These elaborations reflect their capacities to view = as a flexible communicative tool whose meaning is negotiated among composers, readers, and contexts.

Proposing alternative readings by real and potential audiences. Along similar lines, participants specifically dramatized the act of reading expressions containing = by describing how *others* might read, write, and respond to such expressions. Multiple explanations of these alternative reading experiences were proposed, with numerous factors from age to technological changes presented as reasons for emerging variety. Participants ability to shift from one reader position to another suggests an important foundational element of the multiliterate nature of reading =: Readers are aware that how one reads the equals sign "all depends on your family and your circumstances."

Connecting to orthodox mathematical language. The ability to shift among possible reader positions as part of the act of reading = in a variety of expressions drawn from formal mathematical and popular culture settings is related to participants' awareness of a relation between "new literacies" and children's development of flexible understanding of formal uses of

=. Participants expressed a sense of urgency and opportunity facing young readers who may encounter both formal and "new" uses of =. "It's important for them to understand something is applicable in more than one way," said one interview participants, "That might be something they need to think about." Participants connected what we describe as multiliteracy with important developmental changes useful for mathematical thinking.

Reconstructions of Context Necessary for Interpreting Expressions

Much data generated by questions prompting interviewees to describe their definitions of = is comprised of reconstructions of context eliminated in the experiment process. Interviewee's efforts to recover, imagine, and convey a context-driven interpretation of the expressions are important indicators of multiliterate flexibility that allows them to make sense of a variety of expressions. The transcript excerpt below exemplifies how PSTs employed a flexible repertoire of context-based possible readings to explain equal sign expressions:

Interviewer: So, how would you categorize this, number two hair=mess?

Participant 1: I said "describing."

Participant 2: I said "sayings" because I've seen it on like shirts and stuff.

Interviewer: So that's a specific saying?

Participant 2: I think so. That's like one of those things like "I can't adult. Please don't make me adult." I've seen it on a couple of tank tops.

Interviewer: Okay, I haven't heard that one. I get it, adult is a verb now.

Participant 1: I can't adult.

Interviewer: So you said, it was like describing?

Participant 1: Mmm-hmm. So it's like, table = hard [presses down on table]

Interviewer: So does that make sense?

Participant 2: Yeah, like if you ran into something like that and somebody said, "Ow!"

Participant 1: Yeah, like, door = ouch.

Participant 2: It's like my mom's stove top = hot and she's like "No, no way"

> [sarcastically]

Participant 1: Don't touch the stove top.

Interviewer: So you're not just saying that as a casual observation. It means something

> happened.

Participant 2: Yes, when you do that you're kinda saying, "yeah I just stuck my hand on

> the stove top and burnt myself."

The quasi-clinical setting of the survey and interview dramatizes the embodied, contextualized reading practices PSTs employ routinely.

Situating equal sign expressions in time. Just as in the early anecdote in which Carol used = in both temporal and extra-temporal ways, interview data includes numerous examples of participants reconstructing the temporal circumstances they deem necessary to logical interpretation of equal sign expressions. In some cases, they presented a plot or narrative of which = expression was a snapshot. In other cases, they used temporal situations to color the meaning of a generic expression such as hair = mess in ways that go beyond explaining the meaning to explaining why the statement was published in the first place.

Interpreting technical use of equal sign. One aspect of participants' efforts to reconstruct the use of = involved awareness of the technical and linguistic affordances and constraints of the alphabetic and digital technologies at hypothetical speakers' disposal. Participants described the location of = on cellular phones of a certain vintage. They also described the symbolic relationship of = to the alphabet. These technical explanations were not

prompted by the expressions themselves or the interviewer, but rather they emerged as participants explained why they did or did not use equal signs in one context or another.

Multiliterate Composition Practice

Throughout the interview, participants underlined their awareness of and access to multiliterate composition practices. For example, an interviewee contrasted social media communication, which they understand readily, with *their* composition practices on social media:

Participant 1: But if I read it, I know what it means or know what someone's trying to say. But personally, I don't feel like I use it a lot.

Interviewer: So does it go along with you with all the other abbreviations? Like, Idk?

Participant 1: Yeah, I would associate the equals sign with an abbreviation.

Interviewer: What about you?

Participant 2: Um, I am really anal about typing everything out on Facebook. I'm that person that uses a semicolon on Facebook. Um, I've done it more than once. But I use it when I'm texting and I'm lazy and I'm being very informal. I don't want to text a long message so I'll text my best friend and say "day=fail" and she'll know that my day has sucked and that I want to talk about it but not right now.

Interviewer: I feel like I do it as kind of a joke now, because I've noticed these ways of people using it. Like with my friends, especially if I have talked to them about this then they'll know.

Participant 1: I've, um, there's been situations when like the "idk, my bff Jill, xoxo, ttyl" like I don't do that, but I've done it.

Their awareness of multiple languages intersection and coexisting on social media and their

ability to use = and other digital communication tools ironically underline the multiliterate nature

of the reading practices they bring to the equals sign.

   Situating expressions. Participants' explanation of uses of = regularly resulted in their

application of categories based on situation, following a pattern of "People do this" or "I do this

when." This awareness of situational categories even allowed participants to exclude possible

meanings, as evidenced by one speaker's conclusion, "No one would post that…. I would never

post [that] taking off my makeup was my least favorite part of the day." It is important to note

that these authoritative expressions often dealt with fine-grained distinctions governing the

propriety of certain interpretations. In other words, participants used experiential, situational

categories to make specific determinations about the meaning of an equal sign expression.

   Interviewer: So what does = mean in this one, four wheeler + snow ice = fun mean?

   Participant 1: For this one. Now that I've talked about it, I think it means something

       different than I put down. I think it means 'overall,' kind of. Like, because

       this happened and this happened, overall, I had a fun day.

   Participant 2: People do this a lot with food, too. Like way more for food than anything

       else. I mostly use that for food.

       Interviewer: How would you use it for food?

   Participant 2: Something like, "mini-cake + chocolate milk = win." Something like that.

       Like, I have food, my food is good, be jealous of my food.

This transcript excerpt exemplifies interviewees' ability to situate expressions presented in a list

cut off from their original social media sources. In this case, Participant 1 took liberty to situate

the expression in terms of its genre added that similar expressions were "more for food" than for

the purposes she attributed to the statement under consideration.

Noting divergent meaning possibilities based on context. Alongside the use of experiential categories to situate the meaning of equal sign expressions, participants noted divergent possibilities for meaning, at times based on depth of experience and at times based on lack of experience they viewed as relevant. "We don't see snow in Florida" is offered as a reason for taking an agnostic position on an expression combining all-terrain vehicles and frozen bodies of water. In many cases, discussions of uncertainty included conclusive statements such as, "I think it always depended on the context," and "There's no way to be sure unless you had context." Participants' insistence that context is important both in the context of "readable" and unreadable statements is significant to our discussion of the role of multiliteracy in reading = and developing flexible, context-dependent understandings in mathematics education.

Conclusion

This study offers a nuanced view of meanings of = in multiple contexts and responds to expert calls to understand how text and textual representations, such as symbols, are used in different disciplines (Shanahan, Shanahan, & Misisichia, 2011). The two PSTs in this study interpreted = as a context-dependent communicative tool, while being aware of some of the symbol's history and how that history and current writing practices intersect in particular social settings, times, and places. The variety of interpretations expressed by the PSTs point towards a multiliterate reading of = and aligns with the emphasis on contextualized meaning in recent educational reforms.

It is noteworthy that the statements that we presented in the survey could be categorized as distinctly operational or relational ways of using =. Previous research on conceptions of = has tended to focus on only students' reading and disciplined production of orthodox mathematical

utterances related to these distinctions. Research in this area has largely been concerned with whether or not students correctly read within boundaries of an orthodox mathematical meaning of = (i.e., relational view). We are concerned that such a view may result in a perceived need among teachers of "guarding the tower" of proper reading and writing (Shaughnessy, 1976, p. 234). In this study, we have taken a broader perspective, recognizing that = occurs widely in a variety of ways in people's multiliterate lives, a perspective that offers particular power to mathematics teacher educators.

From this perspective, it appears unproductive to view conceptions or ways of using = as decidedly correct or incorrect. Furthermore, qualitative characterizations or models that specify levels of understanding focus narrowly on certain kinds of mathematical tasks at the exclusion of other relevant meanings of = that PSTs (and other students) may draw upon. The implications for instruction that follow from a multiliteracies perspective suggest that teacher educators focus on helping PSTs to recognize situated meanings and to navigate contextually appropriate meaning. Rather than construing levels of understanding of = as narrowly defined, research should instead distinguish students' abilities to recognize various meanings and the appropriateness to the contexts in which they appear.

We do not claim that the two PSTs who participated in this research are representative of all U.S. PSTs. Nonetheless, our findings challenge the dichotomous presentation of human understanding of the meaning of equal sign prevalent in the extant corpus of research. We find that = is used in many different ways in the world today and that PSTs are well adept at recognizing the multiple meanings of =. Indeed, this recognition positions PSTs to better understand their world, and it is pointless to deny the socio-ideological tensions among possible meanings of =. The advantages of the relational view notwithstanding, an anachronistic view of

= does not help children who must navigate a variety of other complicated socio-ideological language barriers, boundaries, traditions, and transitions. Our claim is that children are already navigating complicated socio-ideological language transitions, and that multiliteracy is a powerful asset, not a liability. We conclude that it behooves PSTs (as it does adults of varied vocations) to be able to arrive at sensible interpretations of = and explicit awareness of how it is used in different contexts so that they might provide students with guidance, rather than a "guarding the tower" (Shaughnessy, 1976, p. 234).

References

Baroody, A. J., & Ginsburg, H. P. (1983). The effects of instruction on children's understanding

    of the "equals" sign. *The Elementary School Journal, 84*(2), 198–212.

Bakhtin, M. M. (1981). Discourse in the novel. (C. Emerson & M. Holquist, Trans.). In M.

    Holquist (Ed.), *The dialogic imagination: Four essays by M. M. Bakhtin* (pp. 259–422).

    Austin, TX: University of Texas Press.

Bakhtin, M. M. (1986). The problem of speech genres. (V. McGee, Trans.). In C. Emerson & M.

    Holquist, (Eds.), *Speech genres and other late essays* (pp. 60-102). Austin, TX:

    University of Texas Press.

Brandt, D. (2014). *The rise of writing: Redefining mass literacy*. Cambridge, UK: Cambridge

    University Press.

Falkner, K. P., Levi, L., & Carpenter, T. P. (1999). Children's understanding of equality: A

    foundation for algebra. *Teaching Children Mathematics 6,* 232–236.

Jones, I., & Pratt, D. (2012). A substituting meaning for the equals sign in arithmetic notating

    tasks. *Journal for Research in Mathematics and Science Education, 43*(1), 2–33.

Kieran, C. (1981). Concepts associated with the equality symbol. *Educational Studies in

    Mathematics, 12*(3), 317–326.

Knuth, E. J., Stephens, A. C., McNeil, N. M., & Alibali, M. W. (2006). Does understanding the

    equal sign matter? Evidence from solving equations. *Journal for Research in

    Mathematics and Science Education, 37* (4), 297–312.

Mann, R. L. (2004). The truth behind the equals sign. *Teaching Children Mathematics, 11*(2),

    65–69.

Matthews, P., Rittle-Johnson, B., McEldoon, K., & Taylor, R. (2012). Measure for measure:

What combining diverse measures reveals about children's understanding of the equal

sign as an indicator of mathematical equality. *Journal for Research in Mathematics*

Education, 43(3), 316–350.

McLean, R. C. (1964). Third-graders and the equal sign: report of an experience. *The Arithmetic*

Teacher, *11*(1), 27-27.

Molina, M., & Ambrose, R. (2008). From an operational to a relational conception of the equal

sign. Third graders' developing algebraic thinking. *Focus on Learning Problems in*

Mathematics, *30*(1), 61-80.

National Governors Association Center for Best Practices, Council of Chief State School (2010).

Common Core State Standards. National Governors Association Center for Best

Practices, Council of Chief State School Officers, Washington D.C.

Saenz-Ludlow, A., & Walgamuth, C. (1998). Third graders' interpretations of equality and the

equal symbol. *Educational Studies in Mathematics*, *35*(2), 153-187.

Shanahan, C., Shanahan, T., & Misischia, C. (2011). Analysis of expert readers in three

disciplines: history, mathematics, and chemistry. *Journal of Literacy Research*, *43*(4),

393-429.

Shaughnessy, M. P. (1976). Diving in: An introduction to basic writing. *College Composition*

and Communication, *27*(3), 234-239.

Strauss, A., & Corbin, J. (1998). Basics of qualitative research: Techniques and procedures for

developing grounded theory (2nd ed.). Thousand Oaks, CA: Sage.

The New London Group. (1996). A pedagogy of multiliteracies: Designing social futures.

Harvard Educational Review, 66(1), 60–92.

Redefining Literacy in the Digital Age

Nance S. Wilson, State University of New York at Cortland

Victoria Cardullo, Auburn University

Vassiliki Zygouris-Coe, University of Central Florida

Introduction

Learning requires the construction of meaning utilizing various metacognitive processes and self-regulation. Metacognition is key to helping students become proficient readers and high academic achievers (Wang, Haertel, & Walberg, 1993). Metacognitive readers are aware of their thinking and learning and are able to identify tasks, monitor performance, choose appropriate strategies, and solve problems. Metacognition is the intentional thinking process used to regulate learning. Some definitions of metacognition include self-regulation, others have it as a separate construct. For the purpose of this paper, the definition of metacognition includes both the learner's awareness of his or her thinking and the self-regulation that occurs to accomplish a learning goal.

In the paper and pencil world, the construction of meaning may have included reading a single print text, multiple print texts, static images, and videos all presented separately. In this world, we know that "strong learners can explain which strategies they used to solve a problem and why, while less competent students monitor their own thinking sporadically and ineffectively and offer incomplete explanations" (Pellegrino & Hilton, 2012, p. 92). Thus, the strong learner is metacognitive and can both regulate and share his or her metacognitive processes.

When reading digitally, multiple texts are often presented within a single webpage, a learning module, and/or a search results page. Research has identified the manner in which texts are presented plays an influential role on student monitoring and regulation of understanding (Singer & Alexander, 2017; Wilson, Zygouris-Coe, & Cardullo, 2014) and that effective online research requires critical comprehension skills

as students learn how to effectively engage in online research (Coiro, 2011; Leu et al., 2014). Current shifts in the medium of text and the strategies utilized for learning have changed what it means to be a learner in the age of digital texts. In our view, we also must reconsider the metacognitive processes learners use in today's learning and teaching contexts. Yet, how do we begin to understand what learners do in order to construct meaning in the digital age?

This paper examined a methodological approach to uncovering the metacognitive processes learners used when they engaged in an educational task on an iPad. This research was significant because "what we don't know outweighs what we do know about how people [students] comprehend text on a digital screen rather than on the printed paper" (Sawchuk, 2017) and schools have been adopting technology, including the iPad, without a full understanding of how these devices change the metacognitive processes needed for learning. Therefore, uncovering the metacognitive strategies used during learning can help teachers prepare students to critically engage with hypermedia text. The study of metacognition has often included two approaches, survey of metacognitive actions and on-line trace methodologies.

Readers' metacognitive awareness and use of reading strategies have been examined using metacognitive inventories which are self-report instruments that ask readers to identify strategies used as they interact with text. The surveys are based on verbal protocols and prior knowledge of metacognitive and self-regulation processes. In these surveys respondents are often asked questions such as, "I have a purpose in mind when I read" (Mokhtari & Reichard, 2002). Although, these self-report instruments have a limited correlation to reading comprehension (Veenman, 2005) they do inform teachers

and researchers as to the participants' thoughts regarding what actions they should take when learning.

Currently few instruments are available to measure learners' metacognitive processes used during digital learning. Yet, the increased complexity of metacognition required in this environment means it is critical for identifying strategies used as students interact with digital text(s). The iPad Metacognitive Awareness of Reading Strategies Inventory (*i*-MARSI) (Cardullo, Wilson, & Zygouris-Coe, forthcoming), a self-report survey of metacognition when learning using an iPad, is a 39-item inventory used to assess the awareness and perceived use of reading strategies while reading and learning on an iPad. The *i*-MARSI uses a Likert-type scale, which ranges from 1 (I never or almost never do this) to 5 (I always or almost always do this). The consistency reliability coefficient for the two subscales Device-Supported Metacognitive Strategies (DSMS) .93 and Self-Monitoring Metacognitive Strategies (SMMS) 0.94 overall the *i*-MARSI has a .932 internal consistency reliability alpha coefficient for all items.

The second technique for understanding the metacognition used by learners includes online trace methodologies. These include, but are not limited to, video and audio recording, eye tracking, and think aloud protocols. Each of these techniques allows researchers a glimpse into the internal metacognitive processes that readers employ to create meaning. Think aloud protocols have learners share their thinking as they engage in a task. This helps to capture their understanding or reasons behind the actions taken to assess the metacognitive processes. Video recordings of learners' actions can capture the actions and, when directed the learners' think alouds. Whereas eye-movement tracking helps to assess where a reader's eyes go during learning. Each of these processes attempt

to capture the metacognitive processes learners use, yet, no single technique captures the full extent of the metacognitive processes (Azevedo, Moos, Johnson, & Chauncey, 2010).

Although each aforementioned technique for understanding metacognitive processes has a different purpose and means by which to "capture" metacognition, they both offer critical insights to the field about the complexity of the topic and the need for continued research that will inform researchers and educators.

Methods

This study analyzed the phenomenon of engaging in an academic task using an iPad in a semi-controlled setting to generate an understanding of the metacognitive practices and strategies used. An academic task with an iPad is the act of constructing meaning using an iPad. The participants used an iPad to complete six unique tasks: 1) Access and use email using the Mail APP; 2) Complete two surveys (*i*-MARSI and background information survey) accessed through the Mail APP; 3) Access Google Docs to read directions; 4) View videos on photosynthesis using Khan Academy; 5) Write using Google Docs; 6) Share information generated using Google Docs.

The study utilized two methodological techniques a metacognitive survey and video observation. The *i*-MARSI, a metacognitive survey was chosen because it is the only survey that assesses students' perceptions of the metacognitive tasks necessary for learning when using the iPad. In addition, online trace video observation was chosen because it allows the researcher to capture the actions the learner takes when engaging in the academic task when reading on an iPad. The videos were analyzed using a video observation protocol developed for the iPad. These two methods for assessing the metacognition of learners when using an iPad permitted the researchers to understand

both the perceived use of metacognitive strategies as well as the actual metacognitive processes used by learners.

The participants in the study were considered expert readers. An expert reader is an active, strategic reader who applies metacognitive strategies to construct meaning (Duffy, Roehler, Herrman, 1988; Ertmer & Newby, 1996; Shanahan, Shanahan, & Misischia, 2011). Each of the participants in the study had attained advanced degrees in science and/or education, their successful completion of advanced degrees indicated the ability to construct meaning and identified them as expert readers. Using convenience sampling (Glaser & Strauss, 1967), the researcher contacted expert science readers already known for this study. The contact was done through email informing them about the study and attaching the informed consent. Each participant had advanced degrees in science but differing levels of experience and expertise in iPad usage. Participant 1 never used an iPad or iPhone prior to the study. She is a science education professor with a Ph.D. with more than 20 years of experience at the college level. Participant 2 uses an iPhone and the iPad for some work-related tasks. She is currently working on a Ph.D. in science education. Participant 3: Uses and iPad and iPhone for work and pleasure and rates his knowledge at the highest levels and teaches a teacher education course that requires students to have and use an iPad.

The study sought to answer two research questions. (1) *What metacognitive behaviors and literacy practices do expert readers engage in when using an iPad for the purpose of academic reading and writing in science?* (2) *Which factors (i.e., iPad, metacognitive behaviors, and literacy practices) result in expert readers' metacognitive awareness of device supported and self-monitoring metacognitive strategies?*

Using online trace video observation of the participants we were able to observe what metacognitive behaviors and literacy practices expert readers used as they engaged in academic reading and writing in science on the iPad. They actively engaged in a multi-step science learning task using an iPad. The task included checking email for directions, communicating about learning, reading on-line science texts, and watching science videos. As the expert reader completed the task, they were videotaped. To identify metacognitive behaviors and literacy practices we used constant comparison of the participants' responses to the *i*-MARSI (Cardullo, Wilson, & Zygouris-Coe, 2015) and the observation protocol developed and refined for this study.

Data Analysis

The data was analyzed in three distinct steps. The first was the analysis of the *i*-MARSI data. Next was the video analysis. Finally, the *i*-MARSI data was compared to the video analysis.

Analysis of the *i*-MARSI results

The *i*-MARSI has two factors that assess metacognitive knowledge and judgement when engaging in academic tasks on the iPad. Factor 1 is composed of Device-Supported Metacognitive Strategies (DSMS), which can be thought of as supportive tools aimed at addressing ones' metacognitive knowledge and judgements on how learning is supported when using an iPad. Examples include setting a purpose, looking at the accuracy of information, previewing text for content by scrolling, paying attention to text features (hyperlinks, bold, color or italicized text), making decisions in relation to what to read carefully or closely to enhance reading comprehension. Factor 2 is comprised of Self-Monitoring Metacognitive Strategies (SMMS). These include the

metacognitive judgements and possible self-regulation steps learners use when learning

and using an iPad. Examples include taking notes electronically, using features of the

iPad to listen to the text annotations, using discussion tools (chat, wikis, or blogs) to

discuss text with others, using reference tools, electronic dictionary, adjust font size,

using search feature to look for key terms and navigate through the electronic text using

features in the e-book or i-Pad to support reading comprehension. Overall scores in each

sub scale indicate how often one uses the given strategy when they read academic or

school- related materials such as textbooks, library books, etc. using an iPad. The mean

average for each subgroup shows which group of strategies are used more often or least

often when reading on the iPad. And the overall mean average is used to identify the

overall level of strategy usage.

Analysis of the Video Observation data

Throughout this research trace online video observations were transcribed using

code time stamps. Coding was a defining component of this study. Thomas (2006)

described five key features of codes. He explained that a category or a code needs an

identifier, typically a short word or phrase. Codes were identified using short phrases

that provided strong implications for the meaning of the codes. Each code had an

operational definition that further defined the code. In the initial codebook, major themes

were defined using operational definitions.   The initial codebook (Figure 1) was

developed using open coding. Holton (2007) stated open coding is a necessity as it allows

all data to be interpreted allowing underlying themes to emerge. All transcriptions were

evaluated by two or more researchers to enhance credibility and trustworthiness. Each

transcription was analyzed and thoughts or ideas were divided into segments which were

then scrutinized for commonalities. Strauss and Corbin (1998) stated in order to identify the concepts one should "open up the text and expose the thoughts, ideas, and meanings contained therein" (p.102). Using multiple itineration's, the second phase of coding looked at breaking down each segment, analyzing, comparing, labeling, and categorizing the data. Using the time stamped data, the individual units were analyzed and sorted using constant comparison. The video data were key to this process. By watching the videos from multiple perspectives, the actions of the participants provided a glimpse into the metacognitive processes that were being used during the learning process.

Figure 1. Initial Codebook.

Major Theme/Code	Sub-Theme/Code	Major Theme/Code	Sub-Theme/Code
Device Supported Metacognitive Strategies	Scrolls up, down, left to right	Annotation	Underline
	Combines information in multiple websites		Circles
	Evaluates if content fits purpose		Comments
	Skims text for length and organization		Highlights
	Distracted by popups or advertisements		Other
	Focused and ignores popups or advertisements	Text Features	Tables
	Other		Figures
Self-Monitoring Metacognitive Reading Strategies	Take notes electronically		Photos
	Take notes using paper and pencil		Hyperlinks
	Other		Other
Pays Attention to:	Bold	Navigation	Flips back and forth between: Text and Text
	Italics		Flips back and forth between: Websites and Websites

	Colored		Flips back and forth between: Text and website(s)
	Clicks on Words to look up definition		Flips back and forth between: Learning Management System (Directions) and other
	Other		Flips back and forth between: App and other
Uses features of the iPad	Find		Other
	Audio Narration	Tasks	Reading
	Book Mark		Video Watching
	Other		Note Taking
Tasks	Learning Management System		Video making
	Presentation Software		Web search
	Other		Response system

During this process, we compared incidents or units of analysis. We continually sorted the data integrating categories. We identified nine themes and 44 codes during this phase. The themes that emerged were device supported strategies, self-monitoring strategies, navigation, annotation, text features, features of the device, attention to, task management, and task oriented. Multiple codes (44) emerged as well and we often felt codes were not mutually exclusive and they often overlapped considerably. For example, the task of notetaking and annotation overlapped. Taking notes using paper and a pen; scrolling up and down, skimming text for length and organization. Taking notes using paper and pen indicated monitoring of the learning process. Scrolling up and down could indicate searching for information, monitoring of learning, answering personal questions regarding the design of the page, etc. Skimming the text could indicate that the reader was setting a purpose for reading. Although, the reasons for these actions are assumed,

as the readers did not engage in the think aloud protocol, they do capture the actions that were completed in the process of learning.

In the third phase of coding the video data, axil coding reduced the number of codes. Our intent was to refine the codes and to show a relationship among the codes. During this process, we worked to reduce the data and combine pieces or units of information. During this itineration, the themes and codes were reduced to 3 themes and 13 codes (Figure 2). The three themes that emerged after sorting and reducing the number of codes using axil coding were (1) uses features of the iPad to construct meaning while accomplishing an academic task; (2) uses features of an app on an iPad to construct meaning while accomplishing an academic task; (3) evidence of problem solving. Throughout the analysis of the video data, notes were made in conjunction with the codes assigned about the task, the readers actions, and verbal comments were made to begin capturing the metacognitive processes used to learn with an iPad.

Figure 2. Final Codes.

Uses iPad features to construct meaning while accomplishing an academic task	Uses features of an App on an iPad to construct meaning while accomplishing an academic task	Evidence of problem solving
- scrolling - navigation (including switching between apps) - taking screenshots - book marking - other	- annotate - electronic notes - learning management software - presentation software - other	- self-monitors or chooses a specific app or feature outside of task directions after recognizing a problem - takes paper and pencil notes - pauses between tasks indicating processing

Comparing the Video Observation and *i*-MARSI data

The data from trace online video observation and the *i*-MARSI were compared using the constant comparative method for analysis to see if the actions of the participants matched the responses to the survey instrument. This comparison revealed that participants' scores on the *i*-MARSI were higher than the actual coded data of their video-taped actions. It is important to note that one of the limitations of self report-type instruments is social desirability and at times inflated responses. Other possible reasons for this difference between the *i*-MARSI scores and the analysis of the video-taped participant actions is the researcher factors. Although a strong reliability was established in the identification of the codes, researcher bias and the human factor may also play a role.

Results

Participant 1 demonstrated strong knowledge of Device-Supported Metacognitive Strategies (mean average 4.0) and average knowledge of Self-Monitoring Metacognitive Strategies (mean average 2.7) on the *i*-MARSI however when applying knowledge to complete the task assigned she ran into multiple issues, including but not limited to application of strategies, navigation between applications, and use of a hyperlink. Since the iPad was new to her she responded to the questions on the *i*-MARSI with what she believed a learner should do when using the device.

Participant 2 also demonstrated strong knowledge of Device Supported Metacognitive Strategies (mean average 4.1) and low average of knowledge of Self-Monitoring Metacognitive Strategies (mean average 2.1) on the *i*-MARSI. When applying these skills to the task on the iPad, he used navigation strategies; but had issues

with some of the features. Participant 3 also demonstrated strong knowledge of Device

Supported Metacognitive Strategies (mean average 4.3) and had a high average of

knowledge of Self-Monitoring Metacognitive Strategies (mean average 3.8) on the *i*-

MARSI. When applying these skills to the task on the iPad, she used features beyond the

task to help construct meaning; but over relied on one technique throughout the meaning

making process. Overall scores for all three participants are as follows: 3.3 participant

one; 3.1 participant two; and 4.0 participant three, indicating participant one and two

have an average overall score and participant three has a high overall score.

The results indicated there is a gap between the results on the *i*-MARSI and the

actual regulation of these strategies during implementation as the participants constructed

meaning using the iPad. During the construction of meaning, it was clear that the

learners' metacognition, self-regulation, and epistemology toward both the iPad and the

task affected the participants' learning. Participant 1 did not have self-regulation or

problem solving strategies on the iPad; but while watching the videos or reading the text

required of the task, she continually evaluated the content and addressed the ideas

presented with confirming movements or comments. She did not get very far in the task

due to problems that arose in the navigation and operation of the iPad. Despite her lack

of metacognition and self-regulation with the iPad, the fact that she had the epistemic

belief that she could learn on the iPad and engaged metacognitively with the content of

the task, there is some evidence of learning.

Participant 2 was strategic in the use of the iPad and regarding the task to produce

learning. When engaging with the iPad, he was able to tap, scroll, and navigate between

tasks while also taking notes using Google docs to record his learning. His use of the

iPad demonstrated that his score on the i-MARSI for DSMS did not match what was observed in the video as he had difficulty with some of the features of the iPad. When engaging with the content of the task, he also made comments and movements that demonstrated evaluation of the content while commenting on the ideas presented as being factual. This participant demonstrated metacognition, self-regulation, and an epistemic belief towards learning regarding both the iPad and the task. He completed more of the task than participant 1and demonstrated learning of the content.

Participant 3 exhibited strong strategic actions with the iPad, she took screen shots of text, scrolled during the videos to see the text of the video and easily navigated between Applications. However, she did not spend more than 15 seconds focused on a video. Thus, illustrating a mismatch between the Self-Monitoring Metacognitive Strategies identified on the i-MARSI and the actions taken by the participant. She did not monitor each task for learning. When completing the final task, a quiz, she continually commented on how she should have taken more screen shots because she couldn't find the answers to the questions. So, in spite of her high level of skill with the iPad, she lacked metacognition, self-regulation, and the epistemic beliefs to learn the content of the task. Thus, her engagement in the task did not lead to learning.

Challenges

Throughout the process of this exploratory study many challenges were encountered, both during the data collection and analysis.

Challenges during the data collection

The challenges during data collection relate to both the task and the instructions provided to the participants. Regarding the task, for the purpose of the study the task was

a Khan Academy module on photosynthesis. The module was chosen because it fulfilled the requirement of being a focus of each participant's content area specialty and when reviewing the videos and tasks the module should take about 40 minutes. However, the task did not have any hyperlinks, a key feature of on-line learning, nor did the task take the time calculated. The lack of hyperlinks was a problem because they are an integral part of many websites and online texts that are used for academic learning. Furthermore, research demonstrates that when students have static metacognitive behaviors when engaging in hypermedia learning environments learning is negatively affected (Tuysuzoglu & Greene, 2015). The time of the task was an issue because the participants were only asked to give 1 hour of their time. The time of the task actually took an hour and thirty minutes. Participants did not schedule the full amount of time, to complete the task. Therefore, participants 1 and 2 did not have time to fully complete the task. Thus, it was impossible for any of the participants to completely finish the task. Furthermore, it was a goal of the study to collect some retrospective think aloud data from the participants regarding the reasons behind their actions.

The instructions for the task were also a complication of the study. The instructions for the task were originally mostly on the iPad. The written instructions told the participants to go to the mail app and to access the Google Docs document with further instructions, including links to the survey and the Khan Academy, link and access instructions. This led to a lot of moving back and forth within the iPad that did not lead to task accomplishment. Participant 1 and 2 had to search for the Google Docs application repeatedly throughout the study. Participant 3 solved the issue by taking screen shots of the directions and referring to them in the Photos App, thus illustrating a

device supported strategy. Thus, the format of the directions caused difficulties for the participants. These difficulties did inform us as to the participants' knowledge of the iPad functions, as well as, how the navigation between applications affects learning on the iPad. Furthermore, the instructions did not ask the participants to engage in think alouds when engaging in the task. This led to challenges during the data analysis.

Challenges during data analysis

The lack of think alouds collected during the study forced the analysis of the video to be limited to informal comments made by the participants and viewable actions. This was a problem because it was difficult to determine the purpose of the actions taken by the participants. For instance, was the action of navigating back to the Google Doc with directions, self-monitoring of task completion, engagement in the task (responding to a question in the Google Doc or reviewing the Google Doc question), or construction of meaning regarding the purpose of the task.

Another challenge that arose during data collection dealt with coding. The original code book was based off the questions of the iMARSI, the focus on the iMARSI was a good starting point but limited the coding process. The coding taught us that in future research we need to delineate between macro/micro metacognitive processes. Macro processes are items such as planning and monitoring. A microprocess under planning, would be the articulation of a sub-goal or restating a goal. A microprocess under monitoring includes content evaluation and the feeling of knowing (Tuysuzoglu & Greene, 2015). Future codes need to delineate between the use of the iPad features for problem solving and the learner's actions/thinking around problem solving. This is important because the problem solving around the device, applications, etc. are separate

from the problem solving around learning. In fact, the metacognitive problem solving used when negotiating the iPad, Applications, and/or computer programs are key to helping students become learners in the digital age. The final issue that arouse during the coding came about with the operational definition of metacognition. Throughout the study metacognition did not include the epistemic beliefs of the participants. The data hinted that epistemic cognition may affect metacognition during a prescribed learning task. Hofer (2004) identified the effect of epistemic cognition on metacognition, as a learners' beliefs about knowing, about the self as knower, the nature of knowledge, and the reasons for knowing all play a role in how the learner thinks about her learning and thus effecting her metacognition. In this research, the third participant completed each task of the study, however, she consistently referred to screen shots for information. From these actions, it can be inferred that she was not interested in learning the information but was interested in completing the task.

Next Steps

This study was the first step in examining the actions expert adult learners take when engaged in an academic task using an iPad. The study addressed a need in the literature to learn more about how learners engage with digital devices to read and comprehend. Next research steps include the following: (a) revise the academic task to include hyperlinks and written directions; (b) expand the operational definitions to include both the macro and micro processes of metacognition.; (c) expand the online trace methodologies to include think alouds; and, (d) develop a survey of the participants' epistemic beliefs and possibly one of their self-efficacy regarding the topic, the device,

and the task to assure that all variables that could affect the metacognition are accounted for.

Comprehension and metacognition are complex, abstract processes. Metacognition refers (a) to a learner's awareness and control of cognitive processes as it relates to tasks or to other people and (b) the monitoring of cognitive processes and the ability to regulate cognition through the use of strategies to repair comprehension when meaning drops. The complexity of reading and comprehending digital texts in digital environments calls for further exploration of the processes involved. Identifying ways to gauge learners' needs as they engage in academic tasks using an iPad may inform educators about how to instruct and assist students to critically engage with hypermedia text.

References

Azevedo, R., Moos, D. C., Johnson, A. M., & Chauncey, A. D. (2010). Measuring cognitive and metacognitive regulatory processes during hypermedia learning: Issues and challenges. *Educational psychologist*, *45*(4), 210-223.

Cardullo, V., Wilson, N. S., & Zygouris-Coe, V. (accepted). i-Pad metacognitive awareness of reading strategies: How do we assess*? Association of Literacy Educators and Researchers Yearbook.*

Cardullo, V., Wilson, N.S., & Zygouris-Coe, V. (2015, December). Strategies Used to Negotiate Reading Comprehension Using Digital Learning Tools. Paper Presented at American Reading Forum, Sanibel Island, FL.

Duffy, G. G., Roehler, L. R., & Herrmann, B. A. (1988). Modeling mental processes helps poor readers become strategic readers. *The reading teacher*, *41*(8), 762-767.

Ertmer, P. A., & Newby, T. J. (1996). The expert learner: Strategic, self-regulated, and reflective. *Instructional science*, *24*(1), 1-24.

Glaser, B., & Strauss, A. (1967). Grounded theory: The discovery of grounded theory. *Sociology The Journal Of The British Sociological Association*, *12*, 27-49.

Hofer, B. (2004). Epistemological understanding as a metacognitive process: Thinking aloud during online searching. *Educational Psychologist, 39*(1), 43-55.

Holton, J. A. (2007). The coding process and its challenges. *The Sage handbook of grounded theory*, (Part III), 265-89.

Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of educational psychology*, *94*(2), 249.

Pellegrino, J. W., & Hilton, M. L. Committee on Defining Deeper Learning and 21st
Century Skills (2012) Education for Life and Work: Developing Transferable
Knowledge and Skills in the 21st Century, Washington, DC: National Research
Council of the National Academies.

Sawchuk, S. (2017). "What We Still Don't Know About Digital Reading." *Education
Week - Curriculum Matters*, Education Week, 1 Aug. 2017,
blogs.edweek.org/edweek/curriculum/2017/08/what_we_dont_know_digital_read
ing_literacy.html.

Shanahan, C., Shanahan, T., & Misischia, C. (2011). Analysis of expert readers in three
disciplines: History, mathematics, and chemistry. *Journal of Literacy Research*,
43(4), 393-429.

Singer, L. M. & Alexander, P.A. (2017). Reading on paper and digitally: What the past
decades of empirical research reveal. *Review of Educational Research, 1-35.*

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques*. Sage
publications.

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation
data. *American journal of evaluation*, *27*(2), 237-246.

Tuysuzoglu, B.B. & Greeene, J.A. (2015). An investigation of the role of contingent
metacognitive behavior in self-regulated learning. *Metacognition and Learning,*
10, 77-98.

Veenman, M. V. J. (2005). The assessment of metacognitive skills: What can be learned
from multi-method designs? In C. Artelt, & B. Moschner (Eds.), Lernstrategien

und Metakognition: Implikationen für Forschung und Praxis (pp. 75–97) Berlin: Waxmann.

Wang, M. C., Haertel, G. D., & Walberg, H. J. (1993). Toward a knowledge base: Why, how, for whom?. *Review of Educational Research*, *63*(3), 365-376.

Wilson, N. S., Zygouris-Coe, V., & Cardullo, V. (2014). Trying to make sense of e-readers. *Journal of Reading Education, 39*(3), pp. 36–42.

Shifting the Focus: Supporting effective collaboration around disciplinary language instruction

Laura Lang, Ph.D.

University of Wisconsin-Madison

Donna Ogle, Ed.D. and Camille Blachowicz, Ph.D.

National Louis University

Abstract

This article discusses the institutional conditions and professional development moves necessary for supporting high quality vocabulary instruction within and across the disciplines. Situated within recent research around language learning and the context of three distinct university -K12 collaborations, the following questions are discussed: 1) How does a shared vision of instruction and student learning support cross-disciplinary collaboration around academic language instruction? 2) What structures support effective higher ed-K12 collaborations around academic language? 3) How can collaborations privilege teacher voice and choice? Finally, we discuss what we learned from these collaborations about supporting high-quality disciplinary language instruction.

Consider the following situation: You're in the emergency room at your local hospital, anxiously listening to the medical resident as she reads your test results: "Depressed lateral fracture of the tibial plateau (TPF), partial meniscus tear." All you hear is: Surgery required. Long recovery. And your heart drops. You love science, particularly Biology, but you've never heard of the tibial plateau before. At that moment, you have no idea how much medical jargon you'll need to learn during the next few months to regain movement in your knee, to be able to walk again. As I (Laura; first author) write this paragraph, 11 months after a high-speed collision in a soccer game, I marvel at the sheer volume of words, phrases and questions that I needed to learn – quickly – in order to be an active participant and self-advocate during my recovery. In ways I least expected, I was forcefully thrown (literally!) into a new discourse community, one which required me to quickly adopt new ways of thinking and communicating. I consulted experts, conducted my own research and participated in a closed Facebook group, learning from others who had also suffered from a TPF.

While the specific context of Laura's interaction with a new discourse community might be unique, language learning requires that we are attentive to context, access experts within those communities and have sustained opportunities to engage with and interact around language (Krashen, 2011; Moje, 2015). In this article, we detail the institutional conditions and instructional moves necessary for supporting university-K12 collaborations around academic language instruction within and across the disciplines.

Our discussion is grounded within our experiences working with teachers and schools through the Authentic Intellectual Work framework, the Striving Readers project, and the Multi-faceted Comprehensive Vocabulary Instruction Program. These university-K12 collaborations span elementary and secondary classrooms, and they place an emphasis on high-

quality, reflective work with classroom teachers. Through a discussion of these collaborations, we will explore the following questions: 1) How does a shared vision of instruction and language development support cross-disciplinary collaboration 2) What structures support effective higher ed-K12 collaborations around academic language? 3) How can collaborations privilege teacher voice and choice? We conclude by exploring the lessons learned and the implications for future collaborations around academic language instruction.

Research and theoretical grounding

In 2000, the National Reading Panel asserted "there is a great need for the conduct of research on these topics [vocabulary instruction] in authentic school contexts, with real teachers, under real conditions" (p. 4-27). In recent years, much has been written about disciplinary literacy instruction (Buehl, 2011, Carnegie Council on Advancing Adolescent Literacy, 2010; Moje, 2015), academic vocabulary instruction (Blachowicz & Fisher, 2000; Nagy & Townsend, 2012; Ogle et al., 2015) and about the unique language features of academic subject areas (Fang & Schleppegrell, 2010; Schleppegrell et al, 2004). However, less has been written about the ways in which university-K12 collaborations can support teacher learning around academic language. Because the Common Core State Standards have brought heightened attention to disciplinary literacy and language instruction, there is an increased urgency to support teachers in this work. This article, then, is designed to build upon and extend the extant research base on disciplinary language instruction and the design of high-quality, authentic literacy and language experiences within "authentic school contexts, with real teachers, under real conditions."

Though our projects with K12 teachers developed independently, we (the authors) have collaborated in various capacities during the past twenty years. Currently, Donna and Camille are both emeritus professors at National Louis University in Chicago, Il and Co-Directors of the

Reading Leadership Institute. They have spent their careers exploring the role of literacy in student classroom learning, with a particular focus on disciplinary literacy and vocabulary practices. Laura first met Camille and Donna twenty years ago, when she was their student within the Reading Specialist master's degree program at National Louis University. Since then, Laura has taught high school English and reading, serving both as a reading specialist and a secondary literacy coach. After completing her doctoral research study of secondary literacy coaches, Laura now teaches and serves as an instructional coach at the University of Wisconsin-Madison. During the past twenty years, we have worked together on a variety of literacy projects where the development of academic vocabulary has been a central component.

As a result of these collaborations, we share fundamental beliefs about what constitutes high quality disciplinary literacy instruction, and we are committed to partnering with teachers in order to implement that instruction. We all share the core beliefs that are well-articulated by the Wisconsin State Reading Association: Research grounds us, expertise matters, and literacy is a complex process requiring a comprehensive approach and a mindset shift (http://wsra.org).

Research (and Theory) Grounds Us

The three projects that we will describe attend to Gee's contention that discourse communities have unique ways of thinking, talking, and writing (Gee, 2010). These discourses, which Gee refers to as "big D" discourses, are socially situated, acknowledged ways of using language, acting, behaving and thinking (2011). In school settings, students negotiate multiple Discourses during their day as they move in and out of different social and academic contexts. They interact with their peers, with adults and with the discursive demands of multiple academic subject areas. Because each academic discipline values distinct ways of thinking, talking and writing (Fang & Schleppegrell, 2008), teachers should provide students with opportunities to

explore, question and experiment with the unique language demands they encounter (Blachowicz et al., 2006; Moje, 2015). Furthermore, since disciplinary language and vocabulary are essential to disciplinary learning (Nagy & Townsend, 2012; Shanahan & Shanahan, 2008), attention to language learning is necessary if students are to engage deeply with disciplinary content.

Expertise Matters

As facilitators of these projects, we believe that to engage deeply with disciplinary content and become independent learners, students need to be apprenticed into the discipline-specific ways of communicating that they engage with during the school day (Fang & Schleppegrell, 2008; Moje, 2015). This requires a commitment to focused, reflective professional development for teachers, professional development that helps establish a clear vision of literacy and language instruction, honors and develops teacher expertise, and provides tools to support their work.

In addition, we believe that the goal of effective instruction is the development of student independence in their learning. Research indicates that much strategy instruction can become an end in itself rather than a tool for students' ownership of vocabulary learning (Duke et al., 2011). Subsequently, each project promotes instruction that is efficient, effective and motivating, aiming to shift the focus from teaching decontextualized strategies to empowering students to become independent vocabulary and language learners (Blachowicz et al., 2013a; Blachowicz et al., 2013b; Ogle et al., 2016). We also agree with Brozo et al (2013) and Shanahan's (2012) contention that both cross-discipline and discipline-specific literacy strategies play a role in supporting effective literacy instruction, and we believe it is essential for teachers to understand the rationale behind the approaches they implement. This requires that building student and teacher expertise, not mastering a singular strategy, becomes the focus of professional

development.

Literacy is a complex process requiring a comprehensive approach and a mindset shift. To sustain a focus on building teacher and student expertise, a school-wide commitment to shared literacy and vocabulary development is essential. The partnerships described here are grounded within that assumption and, in different ways, try to lay the foundation for school-wide conversations and shared beliefs about the how and why of disciplinary language instruction. They lay that foundation by creating, developing and nurturing departmental, interdisciplinary and school wide collaborations that involve teachers, coaches and administrators. These collaborations draw upon principles of enduring professional learning. Learning must be significant, ongoing and supported (Darling-Hammond et al, 2009); it should involve teachers and leaders engaging in collaborative, reflective inquiry (Cochran-Smith & Lytle, 1999; Joyce & Showers, 2002; Ogle, 2007); and it should be responsive to the unique context and needs of participating schools and teachers (Newmann, Carmichael & King, 2016).

Authentic Intellectual Work: Establishing a Shared Vision of Instruction

Laura currently works as a university-based instructional coach, helping schools and districts implement the Authentic Intellectual Work (AIW) framework. AIW (Newmann & Associates, 1996; Newmann, Carmichael & King, 2016) has been used in districts across the United States to help teachers develop intellectually rigorous, authentic instruction within K-12 classrooms. AIW coaches work with interdisciplinary, and often cross-grade, teacher teams for at least 3 years; we build teachers' and administrators' collective capacity to provide meaningful and challenging learning experiences for their students. We accomplish this by assessing instructional artifacts (teacher tasks, written or oral student performance and videotaped or observed instruction) that teachers bring to a series of professional collaboration meetings, using

scoring rubrics that help define what AIW looks like in the classroom. A team's dialogue around the instructional artifacts and AIW rubrics help them develop shared understanding of common language about the goals of classroom instruction.

The AIW framework establishes a shared vision of what all instruction should be working towards, for all students within a building. Specifically, it posits that all students should engage with instructional activities that allow them to "[*construct] knowledge*, through the use of *disciplined inquiry*, to produce discourse, products or performances that have *value beyond school*" (aiwwisc.org). The italicized terms reflect the three core criteria that constitute the AIW framework: construction of knowledge, disciplined inquiry (conceptual understanding and elaborated communication) and value beyond school. Figure 1 visualizes the three criteria and their relationship to student learning.

Figure 1. Authentic Instructional Work Framework
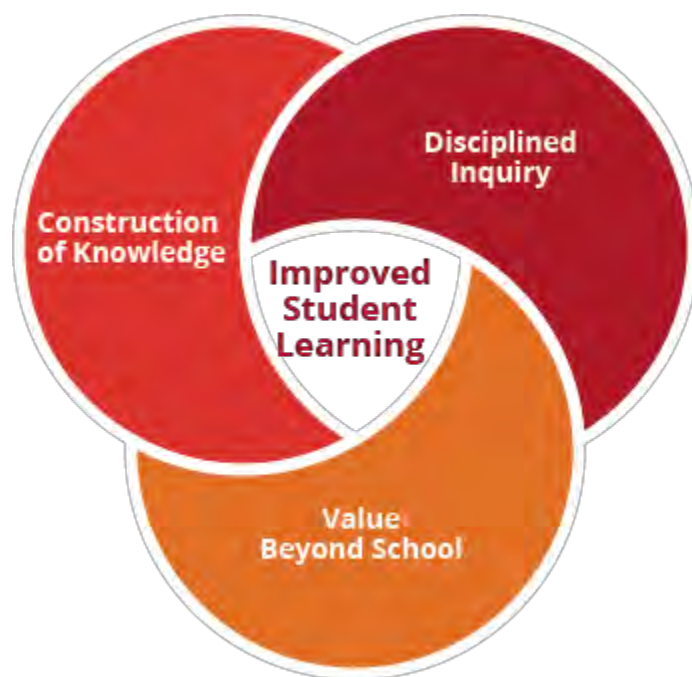
Though not solely focused on language development, AIW privileges the real-world activities, processes and tools that are central to each discipline. Within our partner schools and districts, the AIW framework was implemented to increase the rigor of classroom instruction and to support high-quality teacher collaboration. One such district is the Green Lake School District (GLSD), a small, rural district in Wisconsin that provides an International Baccalaureate curriculum to all students in grades Pre-K-12.

AIW's concurrent focus on both value beyond school and disciplined inquiry necessitates that teachers consider how to engage disciplinary vocabulary practices. In addition, unlike many instructional initiatives, our cross disciplinary teacher teams involve teachers from all subject areas within a school building, not just the core academic subjects. Consider, for example, one interdisciplinary, cross-grade AIW team meeting at GLSD. A physical education teacher shared multiple examples of the personal fitness plans her grade 7 students had just completed. As we scored these student artifacts using the AIW rubrics, we discussed the extent to which each personal fitness plan demonstrated a student's understanding of the concepts central to the unit. The team agreed that some of the student samples demonstrated both understanding and application of concepts such as metabolic rate, resting heart rate, and body mass index among others. When a thorough, accurate understanding of these concepts was not evident within an individual student's personal fitness plan, the team discussed how changes to the assignment, additional teacher or peer modeling and targeted instruction could improve the students' work.

During another team meeting, an art teacher shared examples of 11th and 12th grade art students presenting their original artwork to their class. After watching one videotaped presentation, her AIW team discussed the level of discourse demonstrated by the presenting student and her peers. During the question and answer period that followed the student's

presentation, other students posed questions about her use of art concepts such as texture, form, color, etc. We agreed that the students demonstrated that they were gaining fluency in the conventions of art critique and analysis. Within the AIW framework, this is referred to as Elaborated Communication. When scoring student performance using the Elaborated Communication rubric, an AIW team's discussion centers around the extent to which "the elaboration provided [by the student] is consistent with extended forms of communication in the field being studied" (Newman, King & Carmichael, 2009, p. 68). In order to support this conversation with her AIW team, the art teacher needed to clearly articulate the disciplinary language practices that she hoped students would demonstrate at the conclusion of this particular unit.

In the two examples above, the AIW framework and its accompanying rubrics provided a vision of what constitutes rigorous disciplinary instruction that has value beyond school. This vision helps shape powerful team conversations about disciplinary language, and when enacted within teacher's instruction, it requires that students demonstrate their mastery of the vocabulary and language conventions that are central to a particular discipline.

The next section explores how Camille and her team designed a study that involved teacher participants in the development and enactment of professional development around vocabulary development.

Structures and Processes of the MCVIP Project: Windows on Teacher Development

The Multifaceted Comprehensive Vocabulary Instruction Project (MCVIP) was a three-year, multi-site formative-design study funded by federal Institute of Education Sciences. A collaboration between the University of Missouri, National Louis University and the University of Wyoming, MCVIP sought to achieve the following outcomes: 1) Expand existing knowledge

about vocabulary teaching and learning in upper elementary grades across the discipline, 2) implement the 4-component model articulated by Graves and others, 3) see if and how teachers can address these components effectively in their classrooms and 4) develop transferrable processes and tools for staff development and instruction.

James Baumann was the principal investigator of the project, and Camille headed the Illinois team from National Louis University; this team worked closely with four 4th and 5th grade teachers in a large, multi-lingual elementary school near Chicago, IL. Using the principles of formative-design research established by Reigeluth & Frick (1999), the MCVIP team began by sharing the project goals with participating teachers. These teachers were asked to consider their thoughts/reactions about these goals and bring these thoughts to their first meeting. In addition, the research team interviewed each teacher to learn more about their questions and concerns regarding vocabulary instruction. Table 1 below displays sample teacher interview responses, as well as potential implications for the ensuing professional development work.

Table 1. Sample Interview Data and PD Response

Teacher Comments	Theme	PD Response
"I know some things about vocabulary but I am not sure I know the right things."	Lack of confidence about knowledge base	Focus on building current knowledge of research based practices and developing a shared perspective and vocabulary
"We have had a lot of PD in our district (in vocabulary) but it is all kind of swirling around in my head."	Lack of framework	Use of component framework to organize knowledge and practice
"Where will I find time for these things and what will I have to give up?"	Concern about time	Explicit suggestions for where to incorporate components; based on observation and discussion and ideas for freeing up time; focus on disciplines

The data collected during these interviews were shared at the first meeting, and the group decided, collectively, how they should meet and work together. In this way, the project goals were translated into action.

As seen in Table 1, teacher interview data revealed the absence of a coherent vision, or framework, for comprehensive vocabulary instruction. Central to MCVIP was the development of a research-based framework validated by the iterative processes described below that anchored the team's work. Based on the four component model created by Graves (2006) and consistent with work of Baumann (Baumann, Kammenui & Ash, 2003) and her own research with Peter Fisher (2000; Blachowicz, Watts-Taffe & Fisher, 2006), the framework detailed four elements of effective, sustained vocabulary instruction: 1) Foster word consciousness, 2) Teach Individual Words, 3) Teach Word Learning Strategies and 4) Provide rich and varied language experiences.

In order to build teacher capacity for engaging with these four components, the team devoted time to building knowledge and practice, applying their new learnings in their classroom contexts and documenting and disseminating their new learnings. Each bi-weekly or monthly meeting included a presentation of knowledge and instructional modeling, followed by a formal solicitation of the teachers' responses to that new knowledge. Table 2 lists the questions that helped to solicit the teachers' responses at different points during the MCVIP team meetings.

Table 2. Formative Processes and Feedback

Team Process	Activities	Questions to solicit refinements to process
Knowledge and Practice-building and sharing (Bi-weekly or monthly)	Knowledge presentation Instructional modeling	What response do you have to this? What questions or objections? What suggestions? How shall we move forward?
Application- in-Practice	Teachers all tried the same approach in their classrooms. Brought logs, videos and student work to share with team.	What did you try? How did it work? What would you do to improve what happened? What other comments/suggestions do you want to make?
Documentation and Dissemination	Built a "tool" set	What do we have to share? How can we share it?

These iterative discussions refined the models of instruction that the teacher-researchers developed with their teams. A major outcome of the documentation and dissemination of the "tool set" within the school, the district and the larger educational community by the teachers was the culminating accomplishment of this MCVIP site.

Striving Readers

In contrast to Laura and Camille's discussions of their work with a small rural district and one school, Donna worked as the senior literacy consultant with the Chicago Public School system (CPS). The Striving Readers (SR) project was a four year, federal government-funded collaboration between the Chicago Public Schools' Office of Literacy and National Louis University. A central goal of SR was to enhance teachers' attention to academic reading and vocabulary instruction for middle grade students in urban, low-achieving schools in Chicago.

The grant application was based on a successful middle grades project involving eight schools. That project had focused on developing strong building-level literacy teams (lead literacy teachers, building reading specialists, and building principals) supported by Office of Literacy coaches.

Participants and Processes. The Striving Readers grant extended the work that had been accomplished by the Middle Level Reading Project. A SR Project Director, the senior consultant, Donna, and four district literacy coordinators were charged with creating the design and process for the multi-year year research effort. Schools serving the lowest income students were eligible to apply to be part of the SR Project. From the pool of applicants, 16 schools were selected to be part of the first cohort. At the start of year two, a second cohort was added, bringing in 15 more schools. Each SR school designated one Literacy Intervention Teacher (LIT) to coordinate work at the school level and to provide intervention instruction to Tier 2 students. In total, over 300 teachers and principals were part of the effort. This meant that finding times to meet with participants in smaller groups was essential. Monthly meetings with principals, bi-monthly meetings with teacher groups, and weekly school meetings of the literacy teams led by the LITs, and meetings of the SR leadership team become the contexts for discussion of research instructional approaches and for sharing on-going school implementations.

In trying to reach a large number of teachers in all of the Striving Readers schools while simultaneously educating the SR coaches and building leaders, the SR team decided to focus on the development of and professional support for new integrated instructional units. These unit guides would demonstrate how to provide supportive literacy instruction while teaching content. In addition, new supplementary materials would make this process more appealing to teachers. The SR coordinators and director worked with Donna to develop two instructional units for each

grade level for social studies and science. Mathematics was added later. These units were designed to help classroom teachers attend more deeply to the disciplinary literacy demands of their content areas. Figure 2 provides an example of one of these integrated Unit Guides.

Figure 2. Sample of integrated Unit Guide
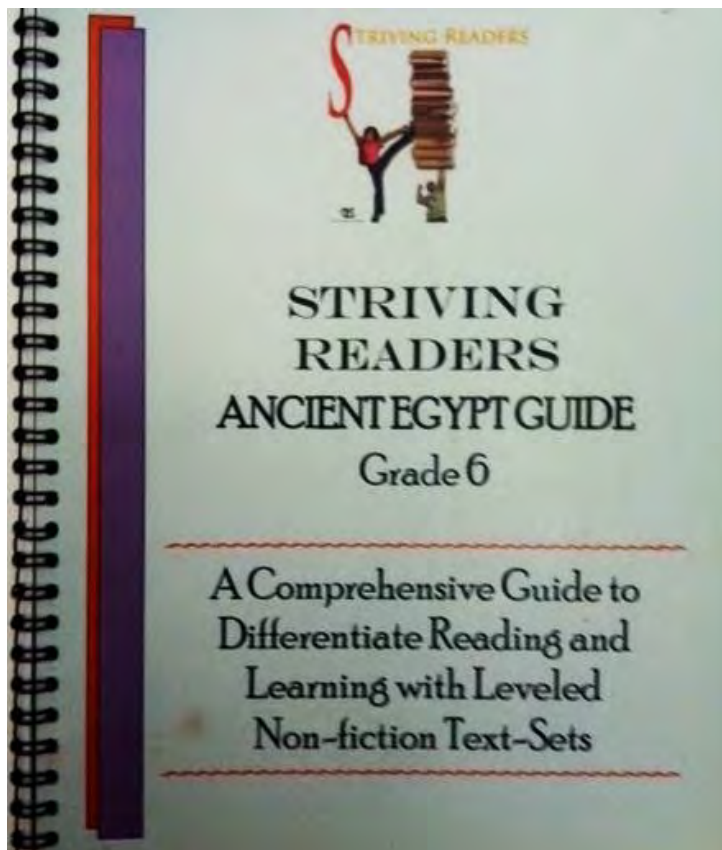
The guides followed the model of activating prior knowledge, building new understandings, and consolidating learning (Ogle & Lang, 2007).

Attention to academic vocabulary was central: the vocabulary in potential texts was analyzed to ensure the texts supported the goals of the curriculum; short pre-assessments of students' knowledge that asked them to sort terms according to categories of information were developed; and activities to help students build knowledge of important terms and concepts were included. Figure 3 shows a concept cluster that was used to introduce the unit on Ancient Egypt.

Figure 3: Example of Concept Cluster

Concept Cluster – Pre-Post Knowledge Check
ANCIENT EGYPT
Choose words from the lists below and put them under the appropriate category or concept. Use as many of the words as you know and only use the word once.

Africa	Archaeologist	Architect	Astronomer	Decomposing	Egypt
Embalmer	Hieroglyphs	Desert	Nile River	Pharaoh	Preserved
Pyramid	Quarries	Sarcophagus	scribe	Silt	tomb

IMPORTANT LOCATIONS

_____

_____

_____

_____

_____

MUMMIFICATION

_____

_____

_____

_____

Ancient Egypt

PEOPLE

_____

_____

_____
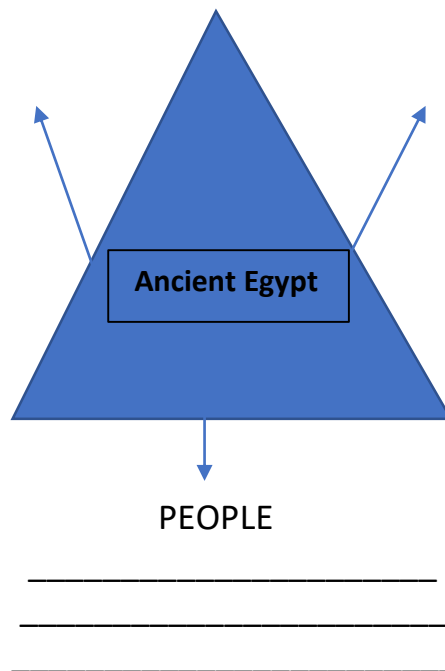
Because of the wide range of reading levels in these schools, we chose to supplement the basic instruction with collections of short books at a range of reading levels that were highly visual and interesting.

These were the focus of staff development sessions with teachers after school and on Saturdays. Receiving a set of books was an incentive and reward. The coordinators and building-level LIT followed up on the larger group meetings with weekly meetings in individual buildings. They also conducted demonstration lessons to further support the lesson assessments

and activities explained in the Unit Guides. These meetings provided opportunities for ongoing

learning and experimentation among teachers. Other components of the project focused on ways

instruction for Tier 2 readers could be enhanced.

Within the range of schools in the SR project there were significant variations in

implementation and success (Tunik & Simon, 2011). The most successful schools shared several

characteristics: true teaming was visible among teachers, the project maintained a central

position within the school despite competing priorities, the SR building meetings became venues

for discussion of student learning and instructional issues, and the principals were actively

involved and regularly attended the monthly principal meetings.

What We've Learned

The Value of Participant Voice and Choice

While the three partnerships described above differ in scope and process, they have

revealed important lessons about how university educators can support disciplinary language

instruction. First and foremost, university partners must position themselves as true partners and

co-learners as they engage with teachers and administrators. In the context of Camille's work

with MCVIP, that meant developing a formative design approach that was responsive to the

needs of the participating K12 educators. Teachers played a crucial role during all aspects of the

study; they contributed as informants and co-researchers and, later, co-disseminators of the

findings.

While the AIW framework articulates a clear, detailed vision for instruction, participating

teachers and administrators determine what artifacts are brought to the team scoring sessions, In

addition, they articulate what kinds of feedback they would most like to get from their peers and

from the AIW coach. As an AIW coach, Laura honors the existing initiatives, funds of

knowledge and successes already in place within a school or district. In the Green Lake School District, this meant that the scoring sessions had to be responsive to the requirements/demands of the International Baccalaureate curriculum. In other words, Laura needed to be explicit about how AIW could support – not supplant – and improve – not ignore – the IB units and assessments that teachers were creating.

Donna and the leadership team developed the foundational text sets and created the Unit Guides giving teachers clear, practical examples of what they could do to support content literacy instruction. The process of discussing the types and range of books to include in the text sets, deciding on the assessments that could be used to help teachers focus their instruction appropriately, and building a set of instructional activities for each unit was a rich form of shared professional development; these processes allowed the team to share and build knowledge of practice together. Throughout the project, regular meetings in schools and with the leadership team provided ongoing forums for reflecting on what was working in classrooms and what needed adapting or expanding.

A Clear, Coherent Vision and/or Framework

Often, K12 staff are barraged by a myriad of instructional programs and professional development initiatives with competing or incongruent visions of effective instruction and student learning. This results in a lack of coherence exists between these programs (Newmann, King & Youngs, 2000). In some cases, higher ed partnerships can add to the incongruence that many teachers experience. However, when we position ourselves as critical friends and partners, and when we remain responsive to schools' and teachers' realities and stated needs, we can help lay the foundation for increased coherence.

One way of accomplishing this is to establish a clear, coherent vision of what all

instruction within a school should be working towards. The Authentic Intellectual Work framework accomplishes this by articulating the following goals for all classroom instruction: students should be engaged in the *construction of knowledge* and *disciplined inquiry* to explore questions, content and discourses that have *value beyond school.* This shared vision, developed within team scoring sessions, requires teachers to discuss the disciplinary demands of particular content areas.

Crucial to the MCVIP's success was the development of a framework for vocabulary learning; this research-based framework guided the participants' work, and it responded to the teachers' expressed need for a common language around what constitutes effective vocabulary instruction.

Clearly stated goals and frameworks were articulated in the funding proposal that gave rise to the Striving Readers project. Bringing these goals to life and finding the way to model for teachers across a disparate set of schools took many forms and evolved over time. The clear project design and a vision shared by consultants and partner helped enormously. However, early on the project suffered from a multitude of conflicting priorities in the schools, turnover of staff, and district changes that resulted in alterations that diverted effort from the project

Extended, protected time for collaboration

The multi-year nature of each of these collaborations also was an essential ingredient in their success. Our partnerships depended on our ability to help cultivate respectful, safe and trusting professional relationships; these evolved over time. We each reflected about how difficult some of the relationships were during the first year of our projects and how grateful we felt that we were able to find ways to reach out and bond with our colleagues; often it was the unexpected and personal serendipities that brought us together: a colleague's celebration,

attending a conference together and having time for meals, or a new position to support. This also required being flexible and listening to each other share our collaboration-building efforts.

Implications for Future Collaborations

We hope to embark on new partnerships around disciplinary literacy and language in the coming years. Our presentation at the American Reading Forum conference, on which this paper was based, afforded Camille, Donna and Laura the opportunity to come together and discuss the common challenges and successes that we encountered as we engaged with K12 teachers, coaches and administrators. These continued reflections and critical conversations are essential, as these projects can be simultaneously stressful, challenging and inspiring.

We spoke often about the need to engage with this work as inquirers. Entering partnerships with hypotheses and experimental designs, not answers, makes the possibility of their success much more likely. Teachers don't like to be the objects of someone else's grand design; most want to be contributors and experimenters. Finding the stance that makes this orientation clear is so valuable.

Ultimately, Michael Fullan's (2002) words resonate deeply with us. "The single factor common to every successful change initiative," he writes, "is that relationships improve. If relationships improve, things get better. If they remain the same or get worse, ground is lost. Thus leaders must be consummate relationship builders with diverse people and groups,". Only then can one have a true learning community dedicated to the complex, exciting challenges that attention to disciplinary literacy requires.

To Learn More

Authentic Intellectual Work

http://aiwwisc.org

Multi-faceted Comprehensive Vocabulary Instruction Project

http://international.slo.nl/bestanden/Ch02.pdf/ https://www.literacyworldwide.org/get-

resources/ila-e-ssentials/8027

References

Baumann J. F., Kame'enui E. J., Ash, G. (2003). Research on vocabulary instruction: Voltaire redux. In Flood J., Lapp D., Squire J. R., Jensen J. (Eds.), *Handbook of research on teaching the English language arts, 2ⁿᵈ ed.* (pp. 752–785). Mahwah, NJ: Lawrence Erlbaum.

Blachowicz, C.L.Z., Baumann, J.F., Manyak, P. & Graves, M. (2013a) Flood, Fast, Focus: Integrating Vocabulary in the Classroom. IRA E-Essentials -Reading, What's New? Newark, DE: International Reading Association. https://www.literacyworldwide.org/get-resources/ila-e-ssentials/8027

Blachowicz, C. L. Z., & Fisher, P. (2000). Vocabulary instruction. In R. Barr, P. Mosenthal, P. S. Pearson, & M. Kamil (Eds.), *Handbook of reading research* (Vol. III). White Plains: Longman.

Blachowicz, C.L.Z., Fisher, P., Ogle, D. & Watts-Taffe, S. (2006). Vocabulary questions from the classroom. *Reading Research Quarterly*, *41*(4), 524-539.

Blachowicz, C.L.Z., Fisher, P., Ogle, D. & Watts-Taffe, S. (2013b). *Teaching Academic Vocabulary K-8: Effective Practices across the Curriculum*. New York: Guilford Press.

Blachowicz, C. L. Z., Watts-Taffe, S., & Fisher, P. (2006). *Integrated vocabulary instruction: Meeting the needs of diverse learners in Grades 1-5*. Naperville, IL: Learning Point Associates.

Brozo, W.G., Moorman, G., Meyer, C., Stewart, T. (2013). Content Area Reading and

  Disciplinary Literacy: A Case For The Radical Center. *Journal of Adolescent & Adult*

  Literacy. 56(5), 353–357.

Buehl, D. (2011). *Developing Readers in the Academic Disciplines*. Newark, DE: International

  Reading Association.

Carnegie Council on Advancing Adolescent Literacy (2010). *Time to act: An agenda for*

  advancing literacy for college and career success. New York: Carnegie Corporation of

  New York.

Cochran-Smith, M. & Lytle, S. (1999). Relationships of Knowledge and Practice: Teacher

  Learning in Communities. *Review of Research in Education, 24*, 249-305.

Darling-Hammond, L. Chung Wei, R., Alethea, A., Richardson, N., & Orphanos, S. (2009).

  Professional Learning in the Learning Community: A Status Report on Teacher

  Development in the United States and Abroad. National Staff Development Council.

Duke, N.K., Pearson, P.D., Strachan. S. & Billman, A. (2011). Essential Elements of Teaching

  and Fostering Reading Comprehension. In Samuels, S.J. & Farstrup, A.E.(Eds). *What*

  Research Says About Reading Instruction. Newark, DE: International Reading

  Association.

Fang, Z. & Schleppegrell, M.J. (2008). *Reading in secondary content areas: A language -based*

  pedagogy. Ann Arbor, MI: The University of Michigan Press.

Fang, Z., & Schleppegrell, M. J. (2010). Disciplinary literacies across content areas: Supporting

  secondary reading through functional language analysis. *Journal of Adolescent and Adult*

Literacy. 53(7), 587-597.

Gee, J.P. (2010). *An Introduction to Discourse Analysis: Theory and Methods*. New York, NY:

Routledge.

Joyce, B. & Showers, B. (2002). *Student Achievement Through Staff Development, 3rd Edition.*

Alexandria, VA: Association for Supervision and Curriculum Development.

Krashen, S. (2011). Academic Proficiency (Language and Content) and the Role of Strategies.

TESOL Journal, *2*(4), 381-393.

Moje, E.B. (2015). Doing and Teaching Disciplinary Literacy with Adolescent Learners: A

Social and Cultural Enterprise. *Harvard Educational Review*, *85*(2), 254-278.

Nagy, W. & Townsend, D. (2012). Words as Tools: Learning Academic Vocabulary as

Language Acquisition. *Reading Research Quarterly, 47*(1), 91-108.

National Reading Panel Report (2010). Retrieved on May 1, 2017 from:

https://www.nichd.nih.gov/publications/pubs/nrp/Documents/report.pdf

Newmann, F.M. & Associates (1996). *Authentic achievement: Restructuring schools for*

intellectual quality. San Francisco: Jossey-Bass.

Newmann, F.M., King, M.B. & Youngs, P. (2000). Professional Development that Addresses

School Capacity: Lessons from Urban Elementary Schools. *American Journal of*

Education, *108* (4), 259-299.

Newmann, F.M., King, M.B. & Carmichael, D.L. (2009). *Teaching for Authentic Intellectual*

Work: Standards and Scoring Criteria for Teacher's Tasks, Student Performance, and

Instruction. Minneapolis, MN: Tasora Books.

Newmann, F.M., King, M.B. & Carmichael, D.L. (2016). *Authentic Intellectual Work:*
   Improving Teaching for Rigorous Learning. Thousand Oaks, CA: Corwin.

Ogle, D. (2007). *Coming Together as Readers*, *2nd ed*. New York: Corwin.

Ogle, D., Blachowicz, C. Fisher, P., Lang, L. (2016). *Academic Vocabulary in Middle and High*
   School: Effective Practices Across the Disciplines. New York: Guilford.

Ogle, D. & Lang, L. (2009) Best Practices in Adolescent Literacy Instruction in Gambell, L.,
   Morrow, L & Pressley, M.(Eds.)   *Best Practices in Literacy Instruction* (pp. 127-156).
   New York: Guilford.

Reigeluth, C.M. & Frick, T.W. (1990). Formative Research: A Methodology for Creating and
   Improving Design Theories. In C.M. Reigeluth (Ed), *Formative Research. Instructional-*
   design Theories and Models: A New Paradigm of Instructional Theory (pp. 633-650).
   New York: Routledge.

Schleppegrell, M. J., Achugar, M., & Oteíza, T. (2004). The grammar of history: Enhancing
   content-based instruction through a functional focus on language. *TESOL Quarterly,*
   38(1), 67–93.

Shanahan & Shanahan (2008). Teaching Disciplinary Literacy to Adolescents: Rethinking
   Content- Area Literacy. *Harvard Educational Review, 78*(1), 40-59.

Tunic, J. & Simon, A.J. (2011). *Chicago Public Schools Striving Readers, Year 5 Evaluation*
   Report. New York: Metis Associates.

Text-Based Tools and Routines for Academic Vocabulary Development and Reading Comprehension with Adolescent ELL's and Other Word-Weak Readers

Archer Israel, Volusia County Schools

Abstract

This action research study presents an instructional approach for both ELL's and English-only students for whom lack of academic word knowledge is the critical barrier to text comprehension. The on-going study of academic vocabulary development and reading comprehension of complex text has been implemented over nine years with sixth through twelfth grade students in Reading, ELA and content area classes.

The instructional approach is characterized by "massive" vocabulary support for complex text, implementing text-specific vocabulary scaffolds called core word lists, before-reading and after-reading routines that frontload reading and writing to text with oral rehearsal, during-reading student-centered peer collaborative interactions to create a comprehensible text reading, and morphological analysis of text-based vocabulary. Specific components of the approach include word consciousness routines, teacher-led interactive reading routines, student-led interactive reading routines, digital and interactive vocabulary tools, developing depth of vocabulary tools and routines, and text dependent questioning. Both qualitative and quantitative findings suggest that the approach has merit in increasing academic vocabulary and reading comprehension with both English-only and English language learners.

Purpose

This article shares findings from an action research project on an instructional approach developed and implemented to increase both academic vocabulary and reading comprehension of secondary level, striving adolescent readers, both ELL and English-only. There is a paucity of research that addresses vocabulary development with secondary level students, and even fewer studies have proposed solutions for older striving readers. This project responds to several areas of historic need (Allington, McCuiston & Billen, 2015; Lesaux, N.K., Kieffer, M. J., & Faller, S. E. 2015; Nagy, Townsend, Lesaux & Schmitt, 2012), which include:

- Comprehensive vocabulary approaches for *secondary level students*
- Instructional routines that maximize collaborative student interactions
- Opportunities for academic language learning within the context of its use
- Language interventions that support both English-Only and ELL's

Background/Context

The goal of this school-based action research project has been to two-fold. First, to identify and develop supports that increase achievement in reading of complex academic text by secondary level students—supports we have found to be inextricably connected to academic language acquisition for both English-Only speakers and ELL's. Second, to test the effectiveness of these supports for word-weak adolescent readers.

Historical baseline data highlighting the need for a language-based approach to literacy development came from multiple sources—high stakes achievement test scores, standardized vocabulary measures, curriculum based assessments, teacher observation including anecdotal records, and informal student interview —all pointing to weak language skills as a recursive factor limiting academic success of our striving adolescent readers. Lack of access to complex language is particularly disastrous for English language learners, bi-dialectic, or economically disadvantaged students for whom vocabulary development already lags behind their grade level peers, compounding the Matthew Effect (Stanovich, 1986) whereby the word-rich get richer and

the word-poor get poorer. Lesaux, Kieffer & Faller (2015 describe the exponential impact of

word knowledge on *metacognition* in this way:

> "…students who know more words have more abstract language at their
> disposal with which to be strategic while reading, and students with developed
> understanding of language and strategies to manipulate language will learn words
> more successfully." (Lesaux, N.K., Kieffer, M. J., & Faller, S. E., 2015 p. 197)

Nagy and Townsend (2012) further elaborate on the relationship of cognitive development to

academic language:

> "Academic thinking involves the cognitive processing of disciplinary concepts and
> phenomena, which would be near impossible without academic language." (Nagy &
> Townsend, 2012 p. 92)

Over the course of this longitudinal study, and supported by research in both adolescent

reading development and second language acquisition, we, (the reading coach and a small cohort

of teachers), have developed a set of routines and text-specific vocabulary scaffolds to support

striving adolescent readers with the complex texts of school with *explicit and extensive attention*

to academic word meaning-- in teacher and student-led read-alouds, text discussions, shared

reading in book groups, word study, and writing to text.

Theoretical Framework: A Cross Pollination of Literacy and Language Acquisition

The theoretical framework for this study draws on research from both adolescent literacy

development and second language acquisition—which has created a reorientation in our thinking

about reading as one of four interconnected language domains-listening, speaking, reading,

writing, rather than as a separate academic study.

Relevant Research in Second Language Acquisition

In a very real sense, the academic language of schooling represents a second language for

word-weak students, who must master listening, speaking, reading, and writing in academic

discourse to participate in literacy tasks across the curriculum. Findings from the research in

SLA clearly dovetailed with what we observed in our struggling ELL and English-Only readers,

problems we initially classified as reading difficulties, and which we have come to re-vision as challenges of language acquisition. We found a framework for strategy development in the research on developmental stages of second language acquisition: receptive or preproduction, early production, speech emergence, intermediate, and advanced language proficiency (Echevarria & Short, 2008-2014; Krashen, Terrell, 1983)—which very strongly parallel our observations of learning behaviors among striving readers grappling with complex academic language—across language domains. This foundational understanding shaped the overall taxonomy of supports in our instructional design: frontloading expressive language demands with receptive language input. In developing instructional contexts, we acknowledge Cummins' (1980) distinction between basic interpersonal communicative skills (BICS) of conversational language, and cognitive academic language proficiency (CALP) required for success in school tasks. The former is acquired through interaction in casual contexts, the latter requiring direct instruction in both form and use.

Opportunity for extensive reading is additionally identified throughout the research in SLA as key to vocabulary development in second language acquisition, (Hu, M., & Nation, I. S. P. 2000; Krashen, 2004, 2012, Nation, 2006; Nation & Waring, 1997), as well as the positive impact of multiple meaningful exposures on word learning (Cobb, 2000-2015; Joe, 2010), so both of these elements—extensive reading and multiple meaningful exposures to academic vocabulary—were built into the reading routines. Research findings on the effect of *breadth* and *depth* of vocabulary knowledge on text comprehension (Ehsanzadeh, 2012; Laufer, 1989, 1992, 1997; Marzban & Hadipour, 2012; Wesche, M. & Paribakht, T.S., 1996) influenced the development of instructional materials to support both of these dimensions. Research suggests that depth of vocabulary, as much as breadth, influences text comprehension, and so we developed several routines requiring students to apply morphological analysis to recently

acquired academic words. In this way students applied the new (the understanding of word parts), to the known (the recently acquired vocabulary) with evidence of significant transfer to other, related, unfamiliar words.

Other theoretical principles from second language acquisition incorporated into instructional design include the affective filter hypothesis –which influenced both the teacher-led language previews and collaborative design of student interactions-- and the comprehensible input hypothesis (Krashen, 1982), which influenced our development of explicit vocabulary lists to scaffold the <u>comprehensible reading</u> of complex text. The taxonomy of language systems discussed by Emig (1977): that listening and speaking are first order processes, and reading and writing are second order processes, influenced the ordering of our language activities and tasks, whereby reading and writing tasks are preceded by oral rehearsal in speaking and listening tasks. Finally, research in the assessment of vocabulary growth influenced our data collection instruments and methods in considering both breadth and depth of word knowledge (Anderson & Freebody, 1981; Cobb 2000-2015; Nation, 2012).

Relevant Research in Literacy Development

Studies that have influenced the framework and instructional design of this project fall into eight interrelated areas of literacy research, and mesh well with the findings from second language acquisition. These include: positive correlations of vocabulary/word knowledge to reading comprehension (Baumann, 2005; Carver, 1994; Elleman, Lindo, Morphy, & Compton, 2017; Kamil, M.L., 2004; Perfetti & Stafura, 2016; Robb, L. & Ganske, K.,2014), the positive impact of reading volume on vocabulary development, (Anderson & Nagy, 1991, 1992; Hirsh, 2003; Krashen, 2004, 2012) the necessity of supporting academic language learning within the context of its use in reading and writing tasks (Nagy, Townsend, Lesaux & Schmitt, 2012; Perfetti and Stafura, 2016), the need for multiple (fourteen or more) meaningful exposures for

word learning (Beck, 2002, Biemiller, 2006; Biemiller & Boote, 2006; McKeown, Beck, Omanson & Pople, 1985; Schmidt, Jiang & Grabe, 2011; Stahl, 2003, 2005;) parallels in academic language development challenges for both ELL's and English-Only students, (Lesaux, Kieffer, Faller, & Kelley, 2010; van Steensel, Ooostdam, Gelderen, Schooten, 2016), that effective instructional components for vocabulary learning should include rich and varied language experiences, developing word consciousness, explicit instruction of individual words, and word learning strategies (Beck, McKeown & Kucan, 2002; Biemiller & Boote, 2006; Cervetti & Hiebert, 2015; Graves, M.F., 2009; Graves, M.F & Watts-Taffe, S.M., 2002; Stahl, 1983), and revisioning reading as language acquisition (Nagy, Townsend, Lesaux & Schmitt, 2012; Uccelli, Galloway, Barr, Menses & Dobbs, 2015)

Unquestionably, features other than vocabulary contribute to challenges of text comprehension-including sentence structure, coherence, organization, and learner features-- such as heritage language, culturally influenced "ways with words" (Heath, 1983) and background knowledge (Hiebert, 2012; Shanahan, Fisher, and Frey, 2012). Uccelli et al, (2015) identify six core academic language skills (CALS) necessary for comprehension of complex text: unpacking complex words, comprehending complex sentences, connecting ideas logically, tracking participants and themes, organizing analytic texts, and recognizing academic register. However, we believe that the prerequisite for development of these six core skills is explicit and extensive academic word knowledge. This lexical paradox (Cobb, 2007) presents a profound challenge to word-poor students (italics added):

> the lexis of texts, at least in languages like English, is far more extensive than the lexis of conversation or other non-textual media. *Thus prospective readers of English must bring to reading the same knowledge they are intended to get from reading.* 2007, p. 1

When we administered the Vocab Size Measure Test (Nation, 2012) to students enrolled in Intensive Reading classes, the average number of known word families was just 8000 in all

subgroups: African American, white, and ELL. This comprises slightly more than 50% of the word families necessary for independent academic reading of complex text, and a fraction of the 40,000 word families English-only 12th graders were estimated to know three decades ago (Nagy & Anderson, 1984; Nation and Waring, 1997). Small wonder our Intensive Reading students failed to achieve with complex text.

Research Design

The research design was determined by the locus of activity—initially taking place in a public sixth through twelfth grade comprehensive school, and continuing at a public high school, with all of the de facto constraints of place and time and personnel.

This was, and is, an action research project that grew out of concern regarding the failure of our Intensive Reading students to meet the grade level benchmarks on the annual high stakes State literacy assessments. Each scholastic year, the challenge of passing the Florida State Assessments-FSA (formerly the Florida Comprehensive Achievement Test-FCAT) assumes a greater and greater urgency, as graduation from high school requires a passing score in both reading and math on the FSA. So very simply—our initial emphasis was to systematically develop and put into play "what worked" to move our students toward that benchmark. The power of action research is in the responsiveness it allows the researchers and participants to modify and refine the process to best support student achievement, and over time, "what worked" has gradually become a refined and particular set of tools and routines that have consistently scaffolded student success as measured by the FCAT and FSA, Vocabulary Size Measure (Nation, 2012), District Interim Reading Assessments (modeled on the FSA), and teacher-created curriculum-based tests.

Method

Participants

Teachers and students from two schools have been involved in the research study, as they were the workplace of the primary researcher (the school-based reading coach), and have contributed substantially to the development of the instructional routines and materials.

Figure 1.

Academic Years	School Type	Grades	Classes	Approximate # of Students	# of Teachers
2007-2008 2008-2009 2009-2010 2010-2011 2011-2012	Comprehensive Rural	6th through 12th	Intensive Reading ELA Law Studies	600 600 700 400 400	7 5 10 5 5
2012-2013	High School Urban	9th and 10th	Intensive Reading World Geography	600	5
2013-2014 2014-2015 2015-2016	High School Urban	9th and 10th	Intensive Reading	500	5 5 5

Instructional Design

Over the course of the school year, students in single block Intensive Reading classes were introduced to twelve routines to support text comprehension and academic vocabulary development.

Figure 2. Twelve Routines for Text Comprehension and Vocabulary Development

Before Reading	Word Work
Developing Word Consciousness	**Developing Breadth of Vocabulary**
Routine 1-Look and Listen	Routine 8-Student Generated Core Word Lists
Routine 2 Echo	Routine 9- Digital Vocab Tools
Routine 3-Call and Response	• COMPLEAT Lexical Tutor-CLOZE
	• quizlet.live, Kahoot it
During Reading	**Word Work**
Interactive Reading	**Developing Depth of Vocabulary**
Routine 4-Teacher Led Oral CLOZE	Routine 10: Academic Word Problems
Routine 5-Whole Class Whip Around	Routine 11: Prefix & Root-Word Dictionary
Routine 6-Partner Read	Routine 12: Academic Word Builder Games
Routine 7-Four-Part Partner Read	• Academic Word Builder Uno

	• MorphoGram (Word-Part Banana Grams)
	• Prefix-Suffix Bingo

We deliberately structured our student-active reading routines to explicitly address factors we observed to inhibit literacy learning of our adolescent students. These included lack of social interaction in typical reading tasks, student inattention to unfamiliar words (lack of word consciousness), reluctance to reveal fluency problems in shared reading, the tendency of students to inflexibly self-identify as either literacy novices or literacy experts, limited exposure to complex text across the curriculum, and a general lack of purpose or stamina for reading. In this endeavor we were influenced by practices in second language acquisition and literacy development (Cummins, 1980; Echevarria & Short, 2008-2014; Krashen, 1982) that frontload reading and writing activities with oral language practices emphasizing listening and speaking (Emig,1977). In addition to the vocabulary and reading routines—and in response to our data from the Fall 2015 Vocabulary Size Measure Test (Nation, 2012) indicating that the striving readers in our Intensive Reading classes knew fewer than 8000 word families-- we also developed text-specific scaffolds called Core Word Lists for each complex text students were required to read.

Core Word Lists

A Core Word List is a language support intended to scaffold the word-knowledge gap between reader and text by making the academic language of the complex text comprehensible (Israel, 2013). Therefore, it contains <u>all</u> the abstract and academic language we anticipate to be unfamiliar to our adolescent students. The criteria for Core Word List include:

- List each target word in the order in which it first appears in the text
- Create as close to a one-word definition as possible.
- Define the word as it is used in the text.
- Match the part of speech of the definition to the target word it defines.

Figure 3. Example Core Word List

A Course in Words: History of Freedom in America
EXCERPT: Lincoln's First Inaugural Address, (March 4, 1861)

ORDER	TARGETWORD	Meaning in Text	AWL	SAT/Off List
1	section	area or part	section	
2	extended	allowed to spread		
3	substantial	major, of weight or importance		
4	dispute	argument, disagreement		dispute
5	fugitive	runaway		fugitive
6	clause	phrase, sentence	clause	
7	Constitution	basic law of the US	constitution	
8	suppression	elimination, ending		suppression
9	foreign	overseas, from other countries	foreign	
10	enforced	carried out	enforced	
11	abide	live, tolerate		abide
12	legal	under the law	legal	
13	obligation	responsibility		obligation
14	ultimately	in the end	ultimately	

This method is effective for developing academic discourse "such as the use of related parts of speech: success, successful, succeed..." (Scarcella, 2008) as well the acquisition of both domain specific and general academic words:

> "Domain-specific terms, such as erosion, Newton's third law of motion, rhombus, and metaphor, are sure to receive instructional emphasis in today's classrooms. However, these words are usually surrounded by other essential but more general academic terms, such as exerts, estimates, determines, distributed, resulting, culminates, and classify. These words, every bit as much as those in the first list, are used in particular ways in the various disciplines and warrant instructional attention."
> (Shanahan, Fisher & Frey, 2012, p 58)

Implementing the Routines in Classroom Practice

Explicit how-to information on implementing the routines, and the rationale for their use can be found at www.dynamic-reading.com, under the *Course in Words* tab.

Figure 4. Instructional sequence.

Monday	Tuesday	Wednesday
		Routine 9-Digital Vocab Tools
Routine 1-Look and Listen Routine 2-Echo Routine 3-Call and Response	Routine 5-Whip Around Routine 6-Paired Reading Routine 7-4 Part Partner Read	

Routine 4- Oral CLOZE	*Text Dependent Questions*	
Thursday		**Friday**
Routine 10-AWL Problems Routine 6-Paired Reading *Writing to Text*	Routine 8: Student Generated Core Word List (as needed)	Routine 10- AWL Problems Routine 11-Affix/ Root-Word Dictionary *Text Dependent Questions* Routine 12-Word Builder Games

The instructional sequence for the routines is as follows. R1: The teacher introduces the academic language of the each text by providing an oral rehearsal of target words for the text selection under study for that day. R2 and R3: Students associate the target words to the meanings in text. R4: Students participate in a teacher-led reading, embedding the word meanings in text. R5, R6, and R7: Students read collaboratively embedding the meanings in text. R8: (used as necessary) Students learn how to make effective use of digital language reference materials, i.e the thesaurus, online etymology, to create student generated core word lists, R9: Students use digital web-based tools to develop breadth of vocabulary through multiple exposures to target words in interaction with peers, R10, R11, R12: Students use teacher-created materials to develop depth of vocabulary, to increase morphological awareness with newly acquired academic words, and to support knowledge transfer of word parts and affixes to other, related words.

Training

As the reading coach I have been uniquely positioned to facilitate this project. The District coaching contract requires academic coaches to be actively engaged with faculty in data collection and analysis, coaching conversations, modeling, side-by-side teaching and reflecting on practice. I employed modeling and side-by-side teaching to train teachers in the routines, using the gradual release model (Fisher, D. & Frey, N., 2008, 2014) to introduce, support, coach,

and refine teacher proficiency in implementation of the routines. Training typically spanned three to five consecutive days when teachers began a new complex text selection—the length of time somewhat dependent on the length of the text. I began by modeling the word consciousness routines for one or two periods with the teacher's students in his/her classroom. Typically I co-taught for an additional period, and then provided side-by-side coaching for another period until the teacher felt confident with the process. The teacher would then teach the remaining classes of the day independently and we would try to meet to debrief and reflect that afternoon or the following morning. The following day I would repeat the process with the interactive reading routines, which the teacher would then continue to implement over as many days as necessary to complete the text selection. The developing depth of vocabulary and word-building routines 8 and 9: Student-generated Core Word List and Digital Vocab Tools, were taught through PLC's and on-site professional development to both reading department faculty and other interested teachers. The same method of modeling, co-teaching, side–by-side coaching, debriefing and reflecting was employed for the developing depth of vocabulary routines 10, 11 and 12: Academic Word Problems, Affix/Root-Word Dictionary, and the Word-Builder Games. These were only implemented after students had completed the text readings, responding to text dependent questions, and writing to text. Additional training and support was also offered when I observed lack of fidelity to the routines. As is characteristic of action research, refinements and adaptations in the materials and routines came about through shared data collection and analysis, coaching conversations, and participation in PLC's.

Data Collection

In order to provide a cross section of teacher and student perception and interaction, sources of qualitative data include ethnographic observational data, student documents, and informal interviews with staff and students. Quantitative data include State assessments, school-

based assessments, and district test scores, in academic language and text comprehension.

In addition to collecting test scores, during daily coaching walkthroughs I observed routines in action, took field notes, and conversed with students and teachers on their progress in listening, speaking, reading, and writing with complex text. The reading department also meets weekly (as scheduling permits) in school-mandated professional learning communities which provides another forum for communication among the adult participants, and I scripted notes, or reviewed comments on pertinent agenda items from those weekly meetings as well.

Assessment Measures

Four types of assessments were used for data collection:

- State Assessments in ELA and Reading
- District Interim Reading Assessments (DIA's)
- Vocabulary Size Measure Test (Nations, 2012),
- Teacher and coach-created curriculum-based vocabulary tests

State assessments in ELA and Reading are annual exams tied to graduation-students must meet a benchmark score on the 10th grade assessment, or subsequent retakes offered twice a year. The DIA's are mandated district interim assessments, designed by the district reading staff using test bank questions to create a "mini" FSA. Comparative data analyses of student scores on the DIA and the FSA indicated that the DIA's have a high level of predictability regarding the likelihood of parallel performance. The Vocabulary Size Measure Test (Nation, 2012), is a multiple choice test designed to measure receptive reading vocabulary, and provides an estimate of word families known. The teacher created curriculum-based pre and post-tests used for this data collection are text-specific assessments of text-based vocabulary in a multiple-choice format. These also included text-dependent, standards-based questions requiring written answers.

Analysis of Data

FSA and FCAT data. In the early years of the research project, we focused on year-end

achievement test data to evaluate the overall success of our developing instructional approach.

The initial research site, labeled School T, was a comprehensive sixth to twelfth grade middle-

high school. The data chart illustrates the comparison of year-end scores <u>with</u> the project from

2008 until 2012, and without the project from 2013 until 2016. The percentage of 9th and 10th

graders meeting the benchmark during the years of implementation from 2008-2012 increased

for three years, with a noticeable dip in 2011 and 2012, giving a five-year average pass rate of

40.3 percent. In the four years since the project was discontinued, the average percentage of 9th

graders meeting the benchmark has dropped steadily to an average pass rate of 32 percent.   In

2010, the increase in the percentage of students passing the FCAT was eclipsed by an

astonishing 71% gain on the Reading FCAT in our lowest quartile of students-- fully 20

percentage points above any other school in the district. Paradoxically, this success sharply

reduced the number of students assigned to Intensive Reading, and resulted in the collapsing of

faculty to a single reading teacher responsible for grades 9-12. This lack of staffing for 2011 and

2012 curtailed our efforts to follow the instructional design of the project, which may explain the

drop in passing scores.

Figure 5. FSA and FCAT Data.

Grade 9-10 Reading			
Academic year	School	Assessment	Percent Passing
2008	SCHOOL D	FCAT	46
2009	SCHOOL D	FCAT	40
2010	SCHOOL D	FCAT	45
2011	SCHOOL D	FCAT	58.5
2012	SCHOOL D	FCAT	52.5
Average pass rate without project:			**48.4**
2013	SCHOOL D	FCAT	57.5
2014	SCHOOL D	FSA	57.5
2015	SCHOOL D	FSA	54.5
2016	SCHOOL D	FSA	53.5
Average pass rate with project:			**55.75**

In the last four years, the project site has been a ninth through twelfth grade high school, labeled School D. The data chart illustrates the comparison of year end scores <u>without</u> the project from 2008 until 2012, and with the project from 2013 until 2016. The percentage of 9th and 10th graders meeting the benchmark during the years of implementation jumped 5 percentage points and remained steady for two years, then dropped for the last two years, giving us an average pass rate of 55.1 percent. In the five years prior to the project, the average percentage of 9th and 10th graders meeting the benchmark fluctuated to an average pass rate of 48.4 percent.

During the first year of project implementation at School D in 2013, global analysis of the year-end data from the Florida State Assessment in English Language Arts (used to evaluate achievement in reading) showed that our student gains in reading outstripped all other content area gains, with significant growth of low achieving students.   What made this success unusual was the movement of our lowest performing students into the high performing quadrant

Historically we had seen *incremental growth* toward the benchmark of students in the lowest quartile, or had success moving 'bubble kids' from the cusp to the benchmark. We were

encouraged to think that this new growth pattern could be attributed in part to the instructional

emphasis with striving readers on developing text-based word knowledge.

Figure 6. FSA and FCAT Data.

Grade 9-10 Reading			
Academic year	School	Assessment	Percent Passing
2008	SCHOOL D	FCAT	46
2009	SCHOOL D	FCAT	40
2010	SCHOOL D	FCAT	45
2011	SCHOOL D	FCAT	58.5
2012	SCHOOL D	FCAT	52.5
Average pass rate _without_ project:			**48.4**
2013	SCHOOL D	FCAT	57.5
2014	SCHOOL D	FSA	57.5
2015	SCHOOL D	FSA	54.5
2016	SCHOOL D	FSA	53.5
Average pass rate with project:			**55.75**

DIA data. The District Interim Assessments were created by district personnel to parallel the

challenges of the ELA FSA, and district level analysis of the two measures indicated a high level

of reliability regarding DIA and FSA performance of individual students. 9th and 10th grade

students sit for these assessments three times year, in their English Language Arts classes. The

chart below illustrates the disaggregated DIA data for the 9th and 10th grade students enrolled in

Intensive Reading classes:

Figure 7. DIA Data.

2014-2015	9th Grade	10th Grade
DIA 1	40.67	42.6
DIA2	38.9	48.34
DIA3	42.6	36.72
2015-2016	9th Grade	10th Grade
DIA 1	47.33	52.1
DIA2	36.93	45.3
DIA3	40.85	43

There are three factors that limit the usefulness of the District Interim Assessments as a measure of performance. Each of the three annual DIA's is designed to address a different set of Florida English Language Arts standards, so student performance cannot be effectively compared across administrations of the test during the same year. Again, the same standards are not necessarily tested at the same point of the year in following years. While these assessments are historically considered "reading tests", the DIA's are administered in the ELA rather than Intensive Reading classes, which complicates data collection, as there is limited ownership of the DIA results.

Data analysis shows uneven student performance, with scores somewhat randomly rising and falling. However, the one consistency within this data is the increase in all three annual scores in the 2014-15 9th grade *cohort* as 10th graders in 2015-16. This does suggest a beneficial longitudinal impact from the reading routines on student performance.

VST data. As mentioned earlier, in the early years of this project, we focused on year-end achievement test data to evaluate the overall success of our developing instructional approach. However, it became clear that we needed more timely and more explicit data to guide instruction and more closely determine "what worked". We investigated various methods for determining overall vocabulary size (Anderson & Freebody, 1981; Cobb 2000-2015; (Ehsanzadeh, 2012; Nation, 2012; Marzban & Hadipour, 2012), with our ideal approach being to create a pre and

post assessment based on the specific corpus of academic words collected from the Core Word

Lists. The technical demands of developing such an assessment proved beyond our capacity at

the time, and led us to the Vocabulary Size Measure (VST), which uses random words selected

from frequency bands to determine breadth of vocabulary, up to twenty thousand word families.

Using this method, a one hundred word, multiple-choice test can determine the number of word

families a student knows. While originally designed for English language learners, the

assessment now has versions for monolingual speakers of English in pre and post-test formats.

We administered the VST to all the students in our 9th and 10th grade Intensive Reading

classes at the beginning and end of each school year. By matching pre and post test scores, we

were able to determine change in knowledge of word families. The effect size for both

combined grades was 1.19. The following chart illustrates the pre and post-test VST scores for

9th grade in 2014-2015.

Figure 8. 9th grade vocabulary measure.

9th Grade	Vocabulary Size Measure1 14K Date Taken: 9/14		Vocabulary Size Measure2 14K Date Taken: 5/15		
	Total Students	Raw Score	Total Students	Raw Score	Word Families Gain
TOTAL	173	43.23	166	54.48	1125
Economic Disadvantage	132	42.24	128	54.45	1221
Black/African American	51	40.38	53	60.5	2012
Hispanic	34	44.16	36	47.8	364
White	88	45.38	77	53.34	796
Female	87	44.34	84	55.78	1144
Male	96	42.39	82	53.6	1121
LEP	20	35.17	22	33.75	-142
Special Ed Indicator	48	39.62	46	46.95	733

In 9th grade, we saw significant gains in word families in almost every subgroup, ranging

from an increase of 364 word families among Hispanic students, to an increase of 2012 word

families among African American students. The only subgroup to demonstrate a loss of word

families was the LEP subgroup. The instructional approach we implemented, that is, a set of

routines and text-specific vocabulary scaffolds to support striving adolescent readers with the

complex texts of school, is intended to scaffold students from conversational language to

academic language. It seems likely that the 9th grade LEP students were still acquiring basic

English and did not yet have the language skills to acquire cognitive academic language

proficiency in English.

The following chart illustrates the pre and post-test VST scores for 10th Grade in 2014-

2015. In 10th grade, we saw significant gains in word families in every subgroup, ranging from

an increase of 1046 word families among students with Special Education Indicators, an increase

of 1498 word families among Hispanic students, an increase of 2278 word families in LEP

students, and an increase of 2483 word families among African American students.

Figure 9. 10th grade vocabulary measure.

10th Grade	Vocabulary Size Measure1 14K Date Taken: 9/14		Vocabulary Size Measure2 14K Date Taken: 5/15		Word Families Gain
	Total Students	Raw Score	Total Students	Raw Score	
TOTAL	171	39.79	167	58.39	1860
Economic Disadvantage	88	43.78	87	61.53	1775
Black/African American	62	34.25	61	59.08	2483
Hispanic	39	40.1	38	55.08	1498
White	70	44.43	68	61.42	1699
Female	82	41.98	80	62.23	2025
Male	89	40.55	87	61.33	2078
LEP	18	35.57	18	58.35	2278
Special Ed Indicator	30	37.67	31	48.13	1046

The following chart shows the pre and post-test scores for 9th grade 2015-2016. Again,

we saw significant gains in word families in every subgroup, ranging from an increase of 602

word families among Hispanic students to an increase of 1947 word families among African

American students.

Figure 10. 9th grade vocabulary measure.

9th Grade	Vocabulary Size Measure1 14K Date Taken: 9/15		Vocabulary Size Measure2 14K Date Taken: 5/16		
	Total Students	Raw Score	Total Students	Raw Score	Word Families Gain
TOTAL	175	41.42	164	51.08	964
Economic Disadvantage	143	39.98	139	49.5	955
Black/African American	56	41.65	53	61.12	1947
Hispanic	37	43.2	32	49.22	602
White	82	44.06	79	52.9	884
Female	79	45.45	72	55.06	961
Male	96	42.44	92	53.4	1096
LEP	20	39.75	16	42.67	292
Special Ed Indicator	41	34.85	39	44.63	978

This final VST chart shows a similar pattern of growth for the 10th grade in 2015-16, ranging

from an increase of 576 word families among LEP students to an increase of 1587 word families

among Economically Disadvantaged students. However, there are several other highly

significant gains. In each year-end administration, the gains made by African American students

consistently outstripped the gains of almost every other group, an outcome that suggests that bi-

dialectic students benefit significantly from this language focused approach to reading. The other

powerful gain is not within the grade year, but again, within the 2014-15, 9th grade *cohort* as 10th

graders in 2015-16. Every subgroup in the 9th grade cohort made additional gains in the second

year of data collection—as 10th graders. This data suggests that the effects of participation in the

language-scaffolded instructional approach had a positive longitudinal effect.

Figure 11. 10th grade vocabulary measure.

10th Grade	Vocabulary Size Measure1 14K Date Taken: 9/15		Vocabulary Size Measure2 14K Date Taken: 5/16		
	Total Students	Raw Score	Total Students	Raw Score	Word Families Gain
Total	145	44.71	140	55.03	1032
Economic Disadvantage	133	43.53	135	58.7	1517
Black/African American	46	48.7	46	61.57	1287
Hispanic	36	40.78	32	52.88	1210
White	63	48.9	62	57.19	829
Female	69	52.45	67	59.44	699
Male	76	49.04	73	58.68	964
LEP	15	36.57	11	42.33	576
Special Ed Indicator	32	37.76	31	49.45	1169

Teacher and coach created text-based vocabulary tests. We created mini versions of the

corpus approach to vocabulary assessment by creating a multiple-choice test using the Core

Word Lists, which we administered before and after implementing the reading routines. Each pre

and post-test consisted of 30 words from the Core Word List for the specific text under study.

Two exemplar texts illustrate the effect sizes of the reading routines on vocabulary acquisition:

the first a selection from the assigned textbook for 9th grade Intensive Reading, "Hip Hop as

Culture" (Smith, 2006), the second an excerpt from "Letter from Birmingham Jail" (King, 1963),

which we used as a stretch text in 10th grade Intensive Reading. In both cases the effect sizes are

significant: 1.13 for "Hip Hop as Culture," and 2.71 for "Letter from Birmingham Jail". The

difference in effect size is a function of the difference in the language complexity of the two

texts. Due to the limited complexity of the language of "Hip Hop in Culture", students had moderately high pre-test scores on the selection. Therefore, even though they scored well on the post-test, the difference between the pre and post scores, while resulting in a significant effect size, was relatively small. Due to the high complexity of language of a "Letter from Birmingham Jail," students had low pre-test scores; after instruction in the reading routines, they scored very well on the post-test, which resulted in the remarkable effect size of 2.71.

Discussion

The two goals of this project were to implement the text-embedded instructional routines and materials we developed to increase vocabulary acquisition and reading comprehension with striving adolescent readers, and to test their effectiveness with our secondary level word-weak students. To determine this we asked five questions in our review of the data:

- Were the explicit instructional routines easily replicated?

- Did we "push the river" of academic language proficiency beyond the canon of vocabulary acquisition which suggests a maximum acquisition of 15-20 words a week, for both ELL's and English Only students?

- Did the interactive reading with peers create the conditions for the sustained engagement with text necessary of language and literacy development?

- Did student implementation of the instructional routines with embedded word meanings in the text to increase both vocabulary acquisition and text comprehension?

- Did students demonstrate increased academic language proficiency across all, four language domains?

The instructional routines did become concrete practices easily replicated by multiple teachers, which I observed in modeling and co-teaching. However, consistency of implementation was not always observed. Some teachers implemented the routines with fidelity each time they introduced a new text, and regularly evaluated student mastery of the target vocabulary. Some teachers implemented only the teacher-directed routines, and one teacher

provided students with Core Word Lists for independent reading of texts, but did not explicitly teach or implement the routines.

Student participation in reading routines clearly increased academic vocabulary as indicated by multiple measures. The post-test scores on the VST showed remarkable gains in word families, well beyond any notions of ten or even twenty words a week. The outcome of the curriculum-based tests gave further support to the positive impact of implementing text-specific language scaffolds, where the complexity of the text provided a medium, rather than a barrier, for vocabulary acquisition. Even more encouraging is the data indicating greatest gains for African American and economically disadvantaged students, for whom initial language measures lagged significantly behind their grade level peers.

When the interactive reading routines were consistently implemented, they clearly contributed to creating classroom environments with high level of student autonomy, incorporating those elements that have been identified to contribute to increased student motivation--of ownership, self-efficacy, collaboration, social interaction with peers, and expectation of mastery (Dyson, A. H; 1993; McRae, A., & Guthrie, J.T., 2009). In those classrooms, once students had mastered the routines, they were self-directed (in small groups and pairs) for the majority of instruction, with the teacher largely operating as guide and facilitator. The impact of sustained self-directed practice was notable on improved student behavior and self-confidence.

Providing students with explicit reading routines and language scaffolds for complex text facilitated collaboration among unlike and typically unlikely student pairs. Students fairly willingly participated in shared reading activities with students we teachers recognized as significantly more or less skilled, a fact obscured to their peers by the frontloading of literacy tasks with pre-reading routines, and the availability of core word lists to scaffold text reading.

Every year I anticipate that some students will refuse to participate in the initial instruction of reading routines. It never happens. When given explicit rules for participation, the challenge of reading complex text, and provided with vocabulary scaffolds, sustained student engagement has been the consistent norm.

Teacher observation of participation in classroom discussions and projects, and informal student interviews strongly indicated to us that students had increased text comprehension. Scores on the DIA give some indication that students did improve in text comprehension measures, particularly the longitudinal data looking at the cohort performance of 9th graders at the end of their 10th grade year.

Observations of student interactions in class discussions as well as in writing to text gave us additional indicators of increased text comprehension. The rubric we used to evaluate writing included specific expectations for language use, including demonstrating an understanding of the author's words, restating the meaning of the text as part of the answer, and correctly using the target vocabulary of the text: the author's words. These expectations *could* fail to correctly identify text comprehension if a student correctly answered the question, but did not demonstrate the required academic language mastery in his answer. When we shared writing samples with a teacher in the International Baccalaureate program she commented that she did not think her own IB students could write as eloquently as many of our student samples.

The kinds of growth that I find the most exciting, however, are not so easily revealed by quantitative data, and I'd like to share an anecdote to illustrate how *exponentially increased word knowledge* impacts literacy behaviors. Developmental reading curricula are grounded in metacognitive theory, and the belief that the reading comprehension of striving adolescent and adult readers can be effectively scaffolded by direct instruction of comprehension strategies . For example, the Teacher's Edition of the standard curriculum for our Intensive Reading classes

identifies specific literary elements and strategies for each literature cluster, with "questions to prompt strategy application" printed in the margins of the student texts, cueing students to summarize, infer, question, and monitor comprehension (Harvey, S & Goudvis, A., 2000; Moore, D., Short, D.J., Smith, W. & Tatum, A., 2009). My observations of students' informal daily interactions reveal that they are already masters of these strategies, as they summarize the plot of the movie they saw last night in the few minutes between classes, infer who didn't make the basketball team with a glance at the body language of the athletes exiting the gym, pointedly question a best friend's claim that her prom dress is the best, lip-sync the slow dance lyrics of a music video, and reread the latest text from the cute boy or girl from biology class. It's not ignorance of summarizing, inferencing, questioning, slow reading, fast reading, and rereading the text (Newkirk, 2009), that confounds text comprehension for striving readers—it's the incomprehensibility of the very *words* of the text. What we consistently observe, is that when the language of complex text is supported with specific vocabulary scaffolds—when the text is comprehensible--striving readers are then able to seamlessly apply these cognitive strategies, transacting with the text in a reflective and insightful manner not so different from students sitting in AP and IB classrooms on the other side of campus. Responding to Mair's (1986) essay *On Being a Cripple*, an Intensive Reading student whom I had never previously observed to participate actively in class, made this comment (which I can only reconstruct from memory as I was too stunned by his voluntary participation to take field notes):

"You know how she say it take the same hopefulness that changed countries from…" (He paged through the text to find the sentence and read it out loud):

'…"undeveloped" to "underdeveloped," then to "less developed," and finally to "developing" nations. People have continued to starve in those countries during the shift...' (Mairs, 1986 p.1)

It's like you can call me African American, but if I got to go home to Spring Hill, [a local

de-facto racially-segregated neighborhood] I'm still just a n_ _ _ _er."

Conclusions/ Instructional Implications

The most common feedback I receive from teachers learning about and implementing this approach is, "finally, something that works! We know our kids don't know these words, but this is the first time we've seen anything that we can actually use." The extensive vocabulary scaffolds are not a panacea to reading difficulties, but they are a powerful tool for allowing striving readers access to school texts, and in supporting their literacy endeavors in listening, speaking, and writing to text. The routines and materials directly correspond to the recursive dilemma facing our word-weak students, of learning academic vocabulary to read complex text, and reading complex text to learn academic vocabulary.

> "...text comprehension depends heavily on detailed knowledge of most of the words in a text. However, it is also clear that the words that occur in texts are mainly available for learning in texts themselves" (Cobb 2007, p1).

References

Allington, McCuiston and Billen, (2015). What Research Says About Text Complexity
and Learning to Read. *The Reading Teacher*, 68, (7)

Anderson, R.C. & Freebody, P. (1981). Vocabulary knowledge. In J.T. Guthrie (Ed.),
Comprehension and teaching: Research reviews (pp. 77–117). Newark, DE:
International Reading Association.

Anderson, R.C., & Nagy, W.E. (1991). Word meanings. In R. Barr, M.L. Kamil, P. M
Rosenthal, & P.D. Pearson (Eds.), *Handbook of Reading Research, Vol. II*. White Plains,
N.Y.: Longman. *Handbook of reading research*. Vol. 2, (pp. 789 – 814. New York:
Longman.

Anderson, R. C., & Nagy, W. (1992). The vocabulary conundrum. *American Educator*,
16(4),14-18, 44-47.

Baumann, J. F. (2005). Vocabulary-comprehension relationships. In B. Maloch, J. V.
Hoffman, D. L. Schallert, C. M. Fairbanks, & J. Worthy (Eds.), *Fifty-fourth
Yearbook of the National Reading Conference* (pp. 117-131). Oak Creek, WI:
National Reading Conference.

Beck, I. L., McKeown, M. G., and Kucan, L. (2002). *Bringing words to life: Robust
vocabulary instruction.* New York: The Guilford Press.

Biemiller, A. (2006). Vocabulary development and instruction: A prerequisite for
school learning. In D. K. Dickinson & S. B. Neuman (Eds.), *Handbook of
early literacy research*. Vol. 2, (pp. 41-51). New York: Guilford Press.

Biemiller, A. & Boote, C. (2006). An effective method for building meaning vocabulary in

    primary grades. *Journal of Educational Psychology*. 98, pp. 44-62

Carver, (1994). Percentage of unknown vocabulary words in text as a function of the

    relative difficulty of the text: Implications for instruction. *Journal of Reading Behavior*,

    26 (4)

Cervetti & Hiebert, (2015). The sixth pillar of reading instruction: Knowledge

    development. *The Reading Teacher*, 68,(7).

Cobb, T. (2007). Computing the vocabulary demands of L2 reading. *Language Learning*

    & Technology, 11, 38–63.

Cobb, Tom. (2000-2015) Compleat Lexical Tutor. Retrieved from

    http://www.lextutor.ca

Cummins, J. (1980). The cross-lingual dimensions of language proficiency: Implications for

    bilingual education and the optimal age issue. *TESOL Quarterly, 14*(2), 175-187.

Cummins, J. (2008) BICS and CALP: Empirical and theoretical status of the distinction. In B.

    Street, B. & N.H. Hornberger, N. H. (Eds.). (2008). *Encyclopedia of Language and*

    Education, 2nd Edition, Volume 2: Literacy. (pp. 71-83). New York: Springer Science +

    Business Media LLC.

Dyson, A. H. (1993). *Social worlds of children learning to write in an urban primary*

    school. New York: Teachers College Press.

Echevarria & Short, (2008-2014). *Making content comprehensible for English learners:*

    The SIOP model. Boston: Pearson/Allyn and Bacon.

Ehsanzadeh, S. (2012). Depth versus breadth of lexical repertoire: Assessing their roles in

    EFL students' incidental vocabulary acquisition. *TESL Canada Journal, 29*(2), 24.

Elleman AM, Lindo EJ, Morphy P, Compton DL. (2009). The impact of vocabulary instruction

on passage-level comprehension of school-age children: A meta-analysis. *Journal of

Research on Educational Effectiveness*, 2(1), 1–44

Emig, J. (1977). Writing as a Mode of Learning. *College Composition and Communication*.

28(2), 122-128

Fisher, D. & Frey, N. (2014). *Better Learning Through Structured Teaching: a Framework for

the Gradual Release of Responsibility*. Alexandria, VA: ASCD.

Graves, M.F., & Watts-Taffe, S.M. (2002). The Place of Word Consciousness in a

Research- Based Vocabulary Program. In A.E. Farstrup, & S. Samuels (Eds.),

What Research Has to Say About Reading Instruction (pp. 140-165). Newark, DE:

International Reading Association.

Graves, M. F. (2009). *Teaching individual words: One size does not

fit all*. New York: Teachers College Press and IRA

Harvey, S & Goudvis A. (2000). *Strategies that work: teaching comprehension to

enhance understanding.* York, Me: Teahouse Publishers.

Heath, S. B (1983). *Ways with words: language, life, and work in communities and

classrooms*. Cambridge Cambridgeshire New York: Cambridge University Press.

Hiebert, E. H. (2012). Core vocabulary: The foundation for successful reading of

complex text (Text Matters 12. 2). Santa Cruz, CA: TextProject. Retrieved from:

http://textproject.org/teachers/text-matters/core-vocabulary/

Hirsh, (2003). Reading Comprehension Requires Knowledge—of Words and the World:

Scientific Insights into the Fourth-Grade Slump and the Nation's Stagnant

Comprehension Scores. *American Educator/AFT*

Hu, M., & Nation, I. S. P. (2000). Vocabulary density and reading comprehension.

  Reading in a Foreign Language, 23, 403–430.

Israel, A. (2013). The Dynamic-Text Approach. Retrieved from http://www.dynamic-

  text.com

Joe, A. (2010). The Quality and Frequency of Encounters with Vocabulary in an English for

  Academic Purposes Programme. *Reading in a Foreign Language, 22*(1), 117-138.

Kamil, M. L. (2004). Vocabulary and Comprehension Instruction: Summary and I Implications

  of the National Reading Panel. In P. McCardle & V. Chhabra, (Eds.). *The Voice of*

  *Evidence: Bringing Research to the Classroom (*pp.213-234). Baltimore, MD:

  Brookes Publishing.

King Jr., Martin Luther. (1963). *Letter from Birmingham jail: why we can't wait.*

Krashen, S. (1982). *Principles and practice in second language learning and acquisition*.

  Oxford: Pergamon.

Krashen, S.D. & Terrell, T.D. (1983). *The natural approach: Language acquisition in the*

  classroom. London: Prentice Hall Europe.

Krashen, S. (1997). *Foreign language education the easy way*. Culver City, Calif:

  Language Education Associates.

Krashen, S. (2004). *The Power of Reading: Insights from the research.*

  Portsmouth, NH: Heinemann.

Krashen, S. (2012). Direct Instruction of Academic Vocabulary: What About Real Reading?

  Reading Research Quarterly, 47(3) (pp. 233

Laufer, B. (1989). What percentage of text-lexis is essential for comprehension? In C.Lauren &

  M. Nordman (Eds.), *Special language: From humans to thinking machines* (pp. 316–

  323). Clevedon, England: Multilingual Matters.

Laufer, B. (1992). How much lexis is necessary for reading comprehension? In P. J. L. Arnaud &
       H. Beʹjoint (Eds.), *Vocabulary and applied linguistics* (pp. 126–132). London:
       Macmillan.

Laufer, B. (1997) The lexical plight. In J. Coady and T. Huckin (Eds.)
       Second Language Vocabulary Acquisition. Cambridge, England: Cambridge Press

Lesaux, N.K., Kieffer, M. J., & Faller, S. E. (2015). The effectiveness and ease of
       implementation of an academic vocabulary intervention for linguistically diverse
       students in urban middle schools. *Reading Research Quarterly,* 45 (2)

Mairs, N, (1986). On being a cripple. *Plaintext.* Tucson and London: University of Arizona Press

McKeown, M., Beck, I., Omanson, R., & Pople, M. (1985). Some effects of the nature and
       frequency of vocabulary instruction on the knowledge and use of words. *Reading
       Research Quarterly*, 20(5), 522–535.

Marzban, Amir & Hadipour, Razieh. (2012). Depth Versus Breadth of Vocabulary Knowledge:
       Assessing their Roles in Iranian Intermediate EFL Students' Lexical Inferencing Success
       Through Reading. *Procedia - Social and Behavioral Sciences*, 46

McRae, A., & Guthrie, J.T. (2009). Promoting reasons for reading: Teacher practices that impact
       motivation. In E. H. Hiebert (Ed.), *Reading more, reading better* (pp. 55-76). New York:
       Guilford Press

Moore, D., Short, D.J., Smith, & Tatum, A. (Eds). (2009). *Edge: reading, writing, & language,
       Level B*. Carmel, CA: National Geographic School Publishing Hampton-Brown.

Nagy, W. E., & Anderson, R. C. (1984). How many words are there in printed school
       English? *Reading Research Quarterly,* 19, 304–330.

Nagy, W. & Townsend, D. Lesaux & Schmitt. (2012). Words as tools: Learning academic

vocabulary as language acquisition. *Reading Research Quarterly*, 47(1), 91-108.

Nation, Paul (1997). The language teaching benefits of extensive reading. *The Language*

Teacher. 21 (5)

Nation, I.S.P & Waring, R. (1997) In Schmitt, N. and M. McCarthy (Eds.):

Vocabulary: Description, Acquisition and Pedagogy (pp. 6-19). Cambridge: Cambridge

University Press

Nation, I.S.P. (2006). How Large a Vocabulary is Needed for Reading and Listening?

The Canadian Modern Language Review/La Revue canadienne des langues vivantes,
63, 1

Nation, I.S.P. (2012). The Vocabulary Size Test.

http://www.victoria.ac.nz/lals/about/staff/publications/paul-nation/Vocabulary-

Size-Test-information-and-specifications.pdf.

Newkirk, T. (2009). *Holding on to good ideas in a time of bad ones: six literacy principles*

worth fighting for. Portsmouth, N.H: Heinemann.

Perfetti, C & Stafura, J. (2014). Word Knowledge in a theory of reading comprehension.

Scientific Studies of Reading, 18(1)

Robb, L. & Ganske, K. (2014). *Vocabulary is comprehension: getting to the root of text*

complexity. Thousand Oaks, California: Corwin.

Scarcella, R. (2008). Academic language: clarifying terms. AcceELLerate, National

Clearinghouse for English Language Acquisition. Washington, DC: George

Washington University.

Schmidt, Jiang, and Grabe, (2011). The percentage of words known in a text and

reading comprehension. *The Modern Language Journal,* Vol. 95

Shanahan, T., Fisher, D., & Frey, N. (2012). The challenge of challenging text. *Educational Leadership*, 69(6), 58-63.

Smith, E. (2006). Hip Hop as Culture. In D. Moore, D. J. Short, D.J., W. Smith, & A. Tatum, Eds. (2009). *Edge: reading, writing, & language, Level B*. Carmel, CA: National Geographic School Publishing Hampton-Brown.

Stahl, S.A. (2003) How words are learned incrementally over multiple exposures. *American Educator.* 27 (1) 18-19, 44

Stahl, S. A. (2005). Four problems with teaching word meanings (and what to do to make vocabulary an integral part of instruction). In E. H. Hiebert and M. L. Kamil (Eds.), *Teaching and learning vocabulary: Bringing research to practice,* Mahwah, NJ: Erlbaum.

Stanovich, K. E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360-407.

Uccelli, P., Galloway, E. P., Barr, C. D., Meneses, A., & Dobbs, C. L. (2015b). Beyond vocabulary: Exploring cross disciplinary academic language proficiency and its association with reading comprehension. *Reading Research Quarterly*, 50(3), 337-356.

van Steensel, R., Oostdam, R., van Gelderen, A., and van Schooten, E. (2016) The role of word decoding, vocabulary knowledge and meta-cognitive knowledge in monolingual and bilingual low-achieving adolescents' reading comprehension. Journal of Research in Reading, 39, 312–329

Vocabulary Size Test, Version A, http://www.victoria.ac.nz/lals/about/staff/publications/paul-nation/VST-version- A.pdf

Wesche, M. & Paribakht, T.S. (1996). Assessing L2 vocabulary knowledge: Depth

versus breadth. *The Canadian Modern Language Review*, 53(1), 13-40.

Tribute
Meeting Wayne, Fats and Evelyn at the Old Style Place

As a doctoral student and early in my career as an assistant professor, Wayne Otto was something of a legend for me and others in the field of Reading. He was highly productive as a researcher and theorist, but never seemed to become disconnected from the practical issues related to teaching young kids to read and older kids to read better. At the time beginning reading instruction was going through highly controversial debates. Scripted Basal Reading instruction predominated, the Whole Language method was gaining steam and behaviorist approaches advocating direct instruction competed for attention. Wayne's Wisconsin Reading Design, co-developed with Eunice Askov, presented a thoughtful, evidence-based alternative.

In the mid-1980s Wayne began to be a regular columnist for The Journal of Reading. Initially the columns appeared under the titles Research or Commentary. These were highly creative pieces of writing. The titles, such as Microbrews and Subarus, Getting Inserviced at the Old Style Place, The Return of Fats Grobnik, and We Read Books So We Won't Cry, give you a flavor for how unusual the columns were for a professional journal. Beginning in 1991 his column was named Views and Reviews. The odd titles and creativity continued and, in my opinion became more refined. The beginnings were usually humorous and a bit off the wall. Take, for example, this one from The Agony of da Effete (Journal of Reading, March, 1992):

Would I lie to you, I told Jimmy over at the Old Style place across the street; a full 16 ounces every day of the week including Saturday when there's live entertainment... My Sister Jane and her all girl band when we were there. ..it's the Happy Hour Pounder and it only costs a buck. At the Rio Colorado they call it a draw, you call it a draft, I call it a tap; but it comes down to the same thing- 16 ounces of cool, clear domestic beer for a buck. I slid my diet Dr. Pepper empty across the bar and added, for emphasis, Uno dinero.

But, lest you think the content isn't serious, here's a paragraph from later in the column:

The scene is befogged, of course, by our tendency to say class when we mean race or, more often, race when we mean class. Of course saying class when we mean race may spare us from being called racist when we make certain claims; but saying race when we ought to be saying class obscures- or denies- an array of social, cultural, and economic realities that are tough to face as teachers. We distance ourselves from

people and problems with the words we choose. (Have a look at J. Elspeth Stuckey's The Violence of Literacy- published by Boynton/Cook, 1991- for a new and, I think, insightful look at the issues involved here.)

These regular columns were the first thing I would read when the Journal of Reading would arrive (by regular mail in those days!). They were delightfully funny. There were odd characters, like Fats Grobnik and Evelyn the Story Lady. There were interesting settings, particularly the Old Style place that seemed to be Wayne's favorite bar (although Wayne seldom drank, at least around me). His stories often took place during his travels; the Rio Colorado mentioned in the above quote is a bar in Moab, Utah. But as far as I could ever tell, the places and characters that wandered through Wayne's columns were fictional and only loosely based on real people and locations. They simply served the creative purpose of drawing the reader into the more serious content that followed. Rereading these columns has been a real pleasure, and I highly recommend them both for their humor and still relevant professional insight.

Over the years I had the great opportunity to develop a relationship with Wayne that was both personal and professional. Our interactions generally mirrored the columns. Starting with humorous and often rambling conversations with little to do with professional topics, then segueing into more serious discussions about our work. Wayne valued my ideas while gently guiding me toward more substantive insights. As I interacted with young colleagues at professional conferences I became increasingly aware of how many were graduates of Wayne's doctoral program at the University of Wisconsin-Madison. They all held him in highest esteem. This along with my own experiences has led me to conclude that although he was a great researcher, theorist and practitioner, Wayne's greatest contributions were as a mentor. He will be missed.

Gary Moorman

Professor Emeritus

Appalachian State University

TOWARD UNDERSTANDING COMPREHENSION

WAYNE OTTO
University of Wisconsin-Madison

Reading educators' traditional alternative for improving students' reading comprehension have been to (a) modify the text, (b) augment the text, or (c) modify the students' reading behavior. Each alternative has been the subject of considerable study and each one can be briefly characterized.

Most efforts to improve comprehension by modifying the text have been heavily influenced by the literature on readability. Consequently these efforts have relied on such practices as limiting the average number of words per sentence, substituting easy (i.e., short, frequently occurring) words for hard (i.e., long, technical) words, and modifying sentence structures, usually by making them more like age-peers' oral sentences or by shortening or otherwise simplifying base clauses. The results have not been particularly encouraging because readability—and comprehensibility—depend on a much more complex array of factors than sentence length, word frequency, and sentence structure.

Effective or not, making basic changes in the text can be both costly and unrealistic. Rewriting text is costly in terms of the time required. But even putting that consideration aside, one wonders whether rewriting text accomplishes much in helping students cope with real-life reading tasks. Perhaps a better way is to augment the text through the use of adjunct aids like advance organizers, objectives and questions. Adjunct aids can be characterized as orienting directions which dispose the reader to respond actively to certain aspects of the text. In general, the most commonly used adjunct aids—advance organizers, objectives and questions—can be quite effective in helping readers improve their comprehension scores. To oversimplify, then, studies show more positive results from augmented than for modified text. Perhaps this is partly because the adjunct aids do indeed involve the reader as an active participant, whereas modified text does little to change the readers' role. At the same time, there is evidence that the improvement in comprehension scores is caused by items related to the focus of the adjunct aids, not increased global "understanding" of the text. Also on the negative side, the provision of adjunct aids is teacher-directed, so students may never internalize the orienting activities sufficiently to become self-directing. Providing adjunct aids can be like providing crutches without effecting cures.

Attempts to improve comprehension by modifying students' reading behaviors do shift the emphasis from teacher-directed to student-directed activities. The more frequently encouraged activities include imaging, paraphrasing, and traditional study skills like underlining, summarizing, note-taking and outlining. Studies have demonstrated positive effects for each of these activities; but, in general, the positive effects have been found with older (i.e., high school and college) students who have above-average ability. On the positive side, such activities do indeed involve students in their own learning and offer the potential of being internalized. On the negative—or perhaps more properly, the realistic—side, the activities typically provide very little by way of developing readers' ability to deal with the structure of text. Because many of the activities require the reader to perceive the organizational structure of the text in order to proceed effectively, poor readers—the ones who need help the most—are helped the least.

Reading educators' traditional alternatives share a common flaw: their focus is too limited. Emphasis is placed either on the text, on the teacher (i.e., teacher-directed activities), or on the reader (i.e., reader-imposed behaviors or strategies); and there is little inclination to pay attention to the interactions among all three. Yet the clear message of the literature, the expressed concerns of teachers, and our own observations and common sense is that attempts to improve readers' comprehension of text must have concurrent regard for the text, the teacher—for the entire instructional milieu—and the reader. To have optimal effect, then, an effective instructional technique ought to give concurrent consideration to the background, abilities and short- and long-term needs of the reader; the expectations of the teacher; the resources of the instructional milieu; and the characteristics (i.e., facts, concepts, structure, organization) of the text. In other words, to have optimal effect the teaching technique would bring together the diverse aspects of a complex teaching-learning process. And, lest we forget, the technique would also embody the most promising implications of a vast and expanding body of related research.

This may be the place to confess that the title of this paper—"Toward Understanding Comprehension"—does not describe its focus. What I've been talking about, and what I'll continue to talk about, is not the thrust of or the need for research on the nature of comprehension. (The research on comprehension may already say more about comprehension than any person sincerely interested in reading education can understand.) What I really mean to be talking about is how we, as reading educators can discover ways to help learners not only to improve their comprehension of printed material but also, and more important, to improve their ability to comprehend. A more proper title, then, might be something like "Understanding Toward Comprehension."

My problem with the title may be related to a dilemma I see us facing in reading education. Should the main role of a reading educator be to conduct *or to interpret* research? *And, if the latter, then what does adequate interpretation amount to? But more about that later.*

There is indeed an extensive and rapidly expanding body of research that appears relevant to reading educator's efforts to enhance readers' ability to understand reading material. Just as an example I can point out three categories of studies that appear to promise much to reading education. All of the studies cited were conducted and reported by people who, I am confident, would not claim to be "reading educators" in the conventional sense. (In fact, I suspect that most, or all, of them might take offense at being called reading educators, noblesse oblige notwithstanding.) The categories can be characterized as follows:

(1). The Reader—where the focus is on the prior knowledge and knowledge structures of *readers.* Some investigators have been paying particular attention to readers' cognitive development (for example, Smirnov, 1973; Brown, 1975, 1977, 1979; Chi, 1978; Naus & Halasz, 1979) and to readers' use of prior knowledge, or schemata (for example, Norman, Genter, & Stevens, 1977; Anderson, Reynolds, Schallert, & Goetz, 1977; Rummelhart & Ortony, 1977; Kintsch, 1979; Rummelhart, in press) in order to better understand the personal characteristics that are involved in effective comprehension.

(2). The Text—where the focus is on the attributes of *printed material.* A number of investigators have been working with the analysis of text (for example, Kintsch, 1974; Meyer, 1975, 1979) and the adaptation of text (for example, Frase, 1972, 1975; Rothkopf, 1976; Rickards & Hatcher, 1978) in order to better understand the characteristics of text and textual modification as parameters of comprehension.

(3). The Interaction of Reader with Text—where the focus is on the point of interaction between *reader* and *printed material.* Investigators have been examining readers' metacognitive

development (for example, Brown, 1977, in press; Flavell, in press; Markman, in press; Baker, 1979), the development of study skills and learning strategies (for example, Anderson, 1978, in press; Brown, in press; Andre & Anderson, 1978), and the effects of schooling (for example, Olson, 1977a, 1977b; Cole, 1977; Meacham, 1977; Scribner, 1979) as they come to grips with the inescapable fact that reading comprehension is a product of both reader and text.

Taken together, these and related studies offer a rich—but largely untapped, in any systematic, integrative sense— reservoir of facts, implications, and direction for developing instructional procedures designed to enhance learning from text. I should like to suggest that it is up to reading educators to provide the systematization and integration that precedes application in the classroom and in the real world. If reading educators do not do it, nobody will.

Now please do not misunderstand. I know the challenge is an old one. For at least a millenium we educators have been lamenting the gap between "research" and "application." But generally the lamenting has been about as sincere as the wailing of paid mourners. The realities of the tenture system and the folkways of the craft effectively force a choice of *research* or *practice. There is virtually no incentive and consequently, very little inclination to make an earnest commitment to translating research results into instructional practice. Those who choose not to make a clear choice are likely to develop a schizoid style: one set of behaviors in the company of researchers and another, essentially unrelated set of behaviors in the company of practitioners. But the stark fact is that it is very difficult to live with one foot in each camp and virtually impossible to exist in the no-man's land between them.*

This is the time for another confession: I'm not sure I see a way out of the dilemma. In the manner of academicians, I find it easier to acknowledge problems than to come up with solutions. But in the manner of schizophrenics, I'm willing to share an experience. Just let it be clear that I'm sharing an experience; I'm not offering a solution—and I'm certainly not giving advice.

In our attempt to act as facilitators, my associates and I settled on the notion of developing an instructional technique that we hope will help to improve comprehension—not just what we know about comprehending. We described our purpose in an article for *Reading Psychology* (Otto, White & Camperell, 1980): ". . . on the basis of our observations in the field, our fantasies of how things could be, and our present perceptions of the related research, we have begun to develop procedures for *glossing* expository text. To over-simplify, we are using marginal and other intratext notations—gloss—to direct readers' attention while they read. Instead of relying on traditional adjunct aids like questions or advance organizers, we are attempting to direct readers' active attention to places in text where the application of specific skills would be appropriate (this could be for the purpose either of teaching or of encouraging the application of specific skills), to instances where a particular strategy could be useful for extracting meaning, and to key words and ideas. In other words, we are attempting to share mature readers' perceptions of and insights into the reading process with developing readers. We expect to make use of a wide range of techniques and activities, including traditional adjunct aids and study strategies. What we hope to do is to systematize our glossing procedures so they can be used with confidence, both for-mally, in the preparation of instructional materials, and informally, in face-to-face teaching in the classroom."

Recently, in the course of our work, we had occasion to prepare a position statement. While it won't tell you much about the specifics of glossing, I hope it does tell you something about where we're coming from and where we're headed. This is it:

As we view the present scene, there is, on the one hand, a clearly recognized need for techniques that teachers can use to help students understand content-area texts; and, on the other hand, an extensive and rapidly expanding body of research and theory that promises to yield facts, implications and directions for developing the needed instructional techniques. The work we are proposing—development of a glossing technique—places us squarely in the middle, for we expect to seek implications for application in the existing research and theory as we develop the technique. We think that the middle is a viable position for teacher educators, for it provides opportunities to build much needed bridges.

We are, then, committed to the middle position, where we at-tempt to expedite the translation of research and theory to classroom application. This commitment is the basis for four decisions which, in turn, shape the planning of our work.

First, our approach to developing the glossing technique is *eclectic.* (We would even go so far as to say it is, at least at this early stage, deliberately *atheoretical*). In other words we are not at-tempting to develop the glossing technique in line with a particular theoretical position—or to extend any particular line of research. To the contrary, this eclectic stance leads us to seek implications from an array of relevant, or seemingly relevant work. For the moment we are confining our search to promising areas of cognitive psychology—schema theory, memory development, text analysis, adjunct aids, metacognition, study strategies and text processing. We readily acknowledge the relevance and promise of other areas— sociolinguistics is a prime example. But even as we restrain our-selves from wild grabbing, we do not claim expertise, as teacher educators, in such an array of subareas of cognitive psychology. Hence, last month we hosted a conference on *Reading Expository Text.* The conference was one attempt to extend our personal perceptions in a systematic way by seeking the insights of qualified others. We expect to continue to seek the advice and criticism of specialized scholars.

Second, the glossing technique is deliberately "global" in nature. That is, the technique subsumes a variety of activities that address such diverse things as (a) development and/or application of specific skills and strategies, (b) the amplification or clarification of content, and (c) the internalization of skills and strategies. Of course "global gloss" is messy, both when it comes to specifying exactly what gloss is or how to gloss a text and when it comes to designing studies that show exactly which activities do or do not enhance which readers' ability to understand expository text. But if gloss is to embody the integrative feature we are seeking, it must necessarily address, simultaneously, (a) the techniques and strategies involved in the reading process, (b) characteristics of a given text, and (c) the facts and concepts of a given content. Once we can reliably put together gloss that "works" (i.e., enhances understanding of text) with identifiable individuals or groups, then we can devise studies to find out why it works.

In other words, we think that for now it is important to *syn-thesize,* to take what common sense and informed analysis hold to be promising and intuitively devise a technique that is credible and useful to both teachers and students. Once we have that we will *analyze* to find out what works best and with whom.

Third, we expect to develop two sets of guidelines for glossing expository materials: *guidelines for informal glossing,* which teachers can use on a day-to-day basis with the textbooks in their content-area classrooms, and *guidelines for formal glossing,* which we can use to develop prototype materials for demonstration, instruction and study. We expect the two sets to be similar in intent and substance; but, at the same time, they will differ in detail and application.

Ultimately, teachers need guidelines that they can use informally to help students understand content-area texts. Consequently, we want to describe the glossing technique (or, probably more properly, *techniques* for glossing, for we expect that certain specific techniques will be more effective with certain individuals and groups) in terms that teachers can use informally to gloss content-area texts. Of course such guidelines will not, and should not, give the definitive direction of, say, a set of specifications for creating a computer program. They should, however, be a melding of such things as (a) facts about the skill and strategy aspects of gloss that work best and with whom (e.g., that activities which focus on application of specific skills are most helpful to poor com-prehenders; that activities which focus on inference-points in a text are most useful to readers who have a good background of related content knowledge), (b) practical procedures for analyzing and dealing with characteristics of text (e.g., organization; concept-load), (c) consideration for students' background knowledge related to a given text, and (d) sensitivity to the need for helping·

students move toward internalization of the skills and strategies that are demonstrated and developed through glossing. In other words, we look toward a set of guidelines for teachers that is rooted in facts and tempered by feelings that come from an awareness of situational constraints and considerations.

Concurrent with the development of guidelines for teachers, we expect to develop prototype gloss for demonstration and study. This means that we must develop more formal guidelines for glossing materials. Such guidelines should also be useful to publishers, both in preparing adjunct materials for content-area text and in preparing instructional materials designed to improve students' general skills and strategies for understanding expository texts. The goal we set for "formal gloss," insofar as its instructional applications are concerned, is to help readers move from a stage where they rely on gloss to assist their understanding to a stage where the skills, strategies and insights they have acquired are internalized and self-sustaining. In other words, *formal gloss* should go beyond "providing crutches"—which is the case with most adjunct aids, and text modifications—to "effecting cures" (i.e., not merely improving comprehension, but improving readers' ability to comprehend).

That is what we said. We put ourselves in that vast and formidable no-man's land between research and practice. And, in effect, (you can judge whether in folly), we said that we would attempt to act as mediators, giving attention to some finite yet significant set of implications from the research side and to some clearly perceived and significant set of concerns on the practice side. A cynic might say that we put ourselves in an extremely vulnerable position, inviting potshots from both sides! On the other hand, one might say that we put ourselves in exactly the right position, as teacher educators, to perform a most vital and useful function.

To this point I've claimed to be behaving in the manner of academicians and of schizophrenics. You may judge the redundancy of those claims. But now let me *disclaim* acting in the manner of a first-general-session speaker, for I will offer neither conclusions nor summary. I choose to believe that we're here for the first of many meetings of the American Reading Forum because we want to engage in open-minded—and, at least some of the time, open-ended—discussion of issues related to reading education. I've tried to share with you some of the issues as I see them. I'm looking forward to the discussion.

References

Anderson, R., Reynolds, R., Schallert, D., & Goetz, E. *Frameworks for comprehending discourse.* Technical Report No. 12. Urbana, Illinois: Center for the Study of Reading, University of Illinois, June 1977.

Anderson, T. H. *Study skills and learning strategies.* Technical Report No. 104. Urbana, Illinois: Center for the Study of Reading, University of Illinois, September 1978.

Anderson, T. H. Study strategies and adjunct aids. In R. Spiro, B. Bruce, & W. Brewer (Eds.), *Theoretical issues in reading comprehension.* Hillsdale, N. J.: Lawrence Erlbaum Associates, (in press).

Andre, M. E. D. A., & Anderson, T. H. *The development and evaluation of a self-questioning study technique.* Technical Report No. 87. Urbana, Illinois: Center for the Study of Reading, University of Illinois, June 1978.

Baker, L. *Do I understand or do I not understand that is the question.* Reading Education Report No. 10. Urbana, Illinois: Center for the Study of Reading, University of Illinois, July 1979.

Brown, A. L. The development of memory: Knowing, knowing about knowing, and knowing how to know. In H. W. Reese (Ed.), *Advances in child development and behavior* (Vol. 10). New York: Academic Press, 1975.

Brown, A. L. *Knowing when, where, and how to remember: A problem of metacognition.* Technical Report No. 47. Urbana, Illinois: Center for the Study of Reading, University of Illinois, June 1977.

Brown, A. L. Theories of memory and the problems of development: Activity growth, and knowledge. In L. Cermak & F. Craik (Eds.), *Levels of processing in human memory.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1979.

Brown, A. L. Metacognitive development and reading. In R. Spiro, B. Bruce, & W. Brewer (Eds.), *Theoretical issues in reading comprehension.* Hillsdale, N. J.: Lawrence Erlbaum Associates, (in press).

Chi, M. T. H. Knowledge structures and memory development. In R. Siegler (Ed.), *Children's thinking: What develops?* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1978.

Cole, M. An ethnographic psychology of cognition. In P. N. Johnson & P. C. Watson (Eds.), *Thinking: Readings in cognitive science.* Cambridge, United Kingdom: Cambridge University Press, 1977.

Flavell, J. H. Cognitive monitoring. In W. P. Dickson (Ed.), *Children's oral communication skills.* New York, N. Y.: Academic Press, (in press).

Frase, L. T. Maintenance and control in the acquisition of knowledge from written materials. In J. Carroll & R. Freedle (Eds.), *Language comprehension and the acquisition of knowledge.* New York, N. Y.: John Wiley & Sons, 1972.

Frase, L. T. Prose processing. In G. Bower (Ed.), *The psychology of learning and motivation* (Vol. 9). New York, N. Y.: Academic Press, 1975.

Kintsch, W. *The representation of meaning in memory.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1974.

Kintsch, W. *On comprehension.* Invited address, American Educational Research Association. San Francisco, April 1979.

Markman, E. Comprehension monitoring. In W. P. Dickson (Ed.), *Children's oral communication skills.* New York, N.Y.: Academic Press, (in press).

Meacham, J. A. Soviet investigations of memory development. In R. V. Kail, Jr., & J. W. Hagen (Eds.), *Perspectives on the development of memory and cognition.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1977.

Meyer, B. J. F. *The organization of prose and its effects on memory.* Amsterdam: North-Holland Publishing Co., 1975.

Meyer, B. J. F. *A selected review and discussion of basic reserach on prose comprehension* (Research Report No. 4). Tempe, Arizona: Arizona State University, 1979.

Naus, M., & Halasz, F. Developmental perspectives on cognitive processing and semantic memory structure. In L. Cermak & F. Craik (Eds.), *Levels of processing in human memory.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1979.

Norman, D. A., Gentner, D., & Stevens, A. Comments on learning schemata and memory representation. In D. Klahr (Ed.), *Cognition and instruction.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1977.

Olson, D. The languages of instruction: On the literate bias of schooling. In R. Anderson, R. Spiro, & W. Montague (Eds.), *Schooling and the acquisition of knowledge.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1977. (a)

Olson, D. From utterance to text: The bias of language in speech and writing. *Harvard Educational Review,* 1977, *47,* 257-281. (b)

Otto, W., White, S., & Camperell, K. Text comprehension research to classroom application: Developing an instructional technique. *Reading Psychology,* 1980, *1,* 184-191.

Rickards, J. P., & Hatcher, C. Interspersed meaningful questions as semantic cues for poor comprehenders. *Reading Research Quarterly,* 1978, *13,* 538-553.

Rothkopf, E. Writing to teach and reading to learn: A perspective on the psychology of written instruction. In N. L. Gage (Ed.), *The psychology of teaching methods.* 75th Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1976.

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Rumelhart, D. E. Schemata: The building blocks of cognition. In R. Spiro, B. Bruce, & W. Brewer (Eds.), *Theoretical issues in reading comprehension.* Hillsdale, N. J.: Lawrence Erlbaum Associates, (in press).

Rumelhart, D., & Ortony, A. The representation of knowledge in memory. In R. Anderson, R. Spiro, & W. E. Montague (Eds.), *Schooling and the acquisition of knowledge.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1977.

Scribner, S. Modes of thinking and ways of speaking: Culture and logic reconsidered. In R. O. Freedle (Ed.), *Discourse production and comprehension.* Hillsdale, N. J.: Lawrence Erlbaum Associates, 1979.

Smirnov, A. A. *Problems of the psychology of memory.* New York-London: Plenum Press, 1973.

A Phenomenological Study on Mothers' and Children's Views on the Digital Devices for

Literacy Practices at Home

Shuling Yang

University of Nebraska, Lincoln

Abstract

This is a phenomenological study that explores mothers and children's views on digital devices for reading and writing practices at home. The study employs Taylor's (1983) family literacy theory and Bronfenbrenner's ecological model of child development to describe the perceptions of mothers and their children with semi-structured interviews in 2015 and 2017. We find that the acceptance and comfortable level of using digital devices in reading and writing increase during these two years.

Keywords: digital devices, perception, parents and children, literacy practice

When LeapFrog launched its battery-operated electronic console and cartridge in 1999, it claimed that the console will put the power of reading at a child's fingertips. Now with the help of ubiquitous mobile touchscreen devices, a vast array of books is at children's fingertips as long they have access to reasonable bandwidth. Children are increasingly experiencing a complicated digital world in which they have access to new forms of literacy. Digital toys, smartphones, tablets, digital assistants, and laptops are enmeshed into children's literacy events in and out of formal education. The new literacies emerging from the interaction with digital devices is a new challenge for our understanding of emergent literacy. Leu, Zawilinski, Forzani, and Timbrell (2015) highlight the nature of the challenge in an ever evolving digital media environment, "when we speak of New Literacies in an online age we mean that literacy is not just 'new' today; it becomes 'new' every day of our lives" (p. 345).

Parents face their own challenges as their children interact with new digital literacies at home and in school in ways they have not when they were children (International Reading Association, 2009). In October 2016, the American Academy of Pediatrics lifted the 'No Screen Under 2' rule admitting that there is simply little relevant research to make any recommendations. As a result they also provided little new guidance for parents struggling to define boundaries and opportunities for young children. Researchers, parents, educators, and physicians are in a constant state of "catch-up" with New Literacies (Gold, 2014). Essentially, it is difficult to make recommendations because there is a dearth of research. It is clear to parents and professionals that guidelines from the age of passive devices (TV and video) may not be applicable to interactive devices. As a result, parents are left to find their own way balancing their personal experiences, social norms and practical decision making. This study aims to

explore mothers and their children's perspectives and co-creation of literacy practices around use

of digital devices especially regarding reading and writing practices at home.

We use *literacy* in this paper to describe the social practices surrounding the consumption

and creation of text integrated with other social practices within a developmental perspective

(Gee, 2001; Street, 1984; Wasik & Herrmann, 2004). Literacy is a natural often informal

occurrence seen every day and experienced in home, family, and community life (Allison &

Watson, 1994), as well as a formal occurrence in the context of organized instruction in

educational settings (Wasik, Dobbins, & Herrmann, 2001). Digital literacy, in turns, refers to

literacy activities occurring in the digital space, most importantly for young children in the form

of interactive touchscreen devices, such as smartphone and tablets. We chose to focus on shared

book reading activities since it is a well-researched and important activity and routine of young

children at home that is being transformed by digital practices and affordances (Lever &

Sénéchal, 2011; Strouse, O'Doherty Troseth, 2013).

Theoretical Framework

To aid our evolving understanding of the complex developments we use two overarching

theoretical frameworks. Bronfenbrenner's ecological model of child development (1986, 1989)

stressed the importance of different activities and interactions of a young child with their

immediate family members as a form of literacy apprenticeship. In this model, the young child is

directly influenced by the microsystem, the layer closest to the child and encompasses the

relationship and interactions a child has with her immediate surroundings (Berk, 2013).

Structures in the microsystem include family, school, neighborhood, and childcare environment.

The child is also indirectly influenced by the mesosystem exosystem and macrosystem. The

mesosystem is the layer provides the connection between the microsystem, such as home, school

and neighborhood (Berk, 2013). The exosystem is a larger social system, a layer in which the

child does not function or involved directly and the macrosystem is comprised of cultural values,

customs and laws and usually mediated by the members of the microsystem and media. The

ecological model suggests that at the microsystem level the co-created practices have the greatest

impact on the child. A child parents may influence his behavior and beliefs and in turn, the child

also affects the behavior and beliefs of the parents. In the case of digital literacy, young children

watch and learn literacy practices they observe their parents and other family members using.

They see family members interact with devices to read emails, messages, interact on social

media and play games. Digital devices as media for learning literacy blur the boundaries

between, reading, writing, socializing and playing. Attitudes towards consuming different text

forms embedded in the digital social milieu are filtered via significant others, especially via

parents. The nature of emergent literacy in the microsystem defies restrictive messages emerging

from the macrosystem.

Our focus on the microsystem led us to family literacy theory. Ever since Taylor (1983)

coined the term *family literacy*, it has been appropriated in different ways: some believe that it is

a way to describe how parents and children co-create literacy practices together in daily lives

while others think it is for teaching parents how to prepare their children for success in schools

(Paratore, 2005).

As far back as the 1960s and 1970s, educators began to recognize the importance of

home and community as settings for children's development prior to formal education

(Goodman, 1980), emphasizing that a considerable amount of literacy development occurred in

homes and communities before the entry of children into school (Heath, 1983; Taylor 1983;

Taylor & Strickland, 1986). Indeed, a body of research followed has demonstrated the linkages

between the children's home environment and their development (Bradley, Corwyn, Burchinla, McAddo, & Coll, 2001; Bradley, Corwyn, McAdoo, & Coll, 2001). Heath (1983) showed how the family determined the child's early language but also influence the way the child used oral language and print.

Taylor (1983) suggested that reading and writing are learned through literacy events woven into the daily cultural practices of families. Family literacy activities encompass the ways parents, children, extended family members use literacy at home and in their community (Morrow, 1995). Wasik and Hermann (2004) explained that researchers (e.g., Heath 1983, Snow, Barnes, Chandler, Goodman, & Hemphill, 1991; Taylor, 1983) who addressed questions of the family influences on children's language in the 1980s contributed to the theoretical shift toward an emergent literacy approach.

Roberts, Jurgens and Burchinal (2005) kept track of 72 African American children between ages of 18 months till kindergarten entry from low-income families and they found out that home environment was the most consistent predictor of children's language and literacy skills. Some studies examine how home environment affects the acquisition of children's later language and emergent literacy knowledge (Scarborough & Dobrich, 1994; Sénéchal & LeFevre, 2002).

Learning to read and write is believed to be a continuous ongoing process. It does not begin abruptly at the start of formal schooling suggesting that activities that support young children's language and literacy have a deep and lasting (e.g. Hart & Risley, 1995). Mctavish (2007) observed a 4-year-old preschooler in a working class family in Canada for a month and concluded that "young children learn about reading and writing before they come to school from the beliefs, function, and values of the people with whom they are involved" (p.483). As a result,

when parents and family members use digital literacy practices they play important roles in the early digital literacy development of the children. It is believed that "parents who are responsive, sensitive and accepting of a child's behavior, and who provide structure, organization, and a positive general emotional climate a home, along with stimulating toys and interactions, facilitate children's language and early literacy development" (Roberts et al., 2005, p. 347). This view is not without its critics, who observed that the home literacy practices vary by culture and coincide with poverty and family stress limiting our ability to determine which factors are causal.

The link between parental involvement and child's early literacy development is well established (e.g., Bus, Van IJzendoorn, & Pellegrinin, 1995; McTavish, 2007; Snow et al., 1991). The classic meta-analysis conducted by Bus et al. (1995) provides a comprehensive review of studies of book reading from the period of 1951 through 1993, which demonstrated that the frequency of caregiver-child book reading bolstered children's acquisition of oral language and emergent literacy skills as well as overall reading achievement. Through storybook reading, emergent literacy skills (oral language, early reading/writing, print knowledge, and phonological awareness) emerge through young children's experiences with the written language in their world over time (Teale & Sulzby, 1986).

Emergent Literacy---Print

Reading print, children begin their literacy development by labelling and commenting on objects and pictures on the page. They gradually learn to produce more complete sentences to describe a more lucid story. With access to print books, they develop their vocabulary and become aware of print conventions and eventually to assign words to specific print patterns. Research has shown that adult-child interactive discourses stimulates emergent literacy skills during shared reading (Whitehurst, Falco, et al., 1988). Shared storybook reading is empirically

associated with better letter naming, phoneme awareness, and early reading/writing, independent

of family's socio-economic status (Bus et al., 1995).

Many studies have been conducted on what are the effective ways of parent-child book

reading: frequency of storybook exposure (e.g., Bus et al., 1995; Scarborough & Dobrich, 1994;

Sénéchal & LeFevre, 2001, 2002; Sénéchal, LeFevre, Hudson, & Lawson, 1996; Sénéchal,

LeFevre, Thomas, & Daley, 1998); quality of book reading (Haden, Reese, & Fivush,

1996; Scarborough & Dobrich, 1994; Sénéchal & LeFevre, 2002); shared storybook reading

(Bus et al., 1995; Cairney & Ruge, 1998; Snow, Burns & Griffin, 1998; Zevenbergen &

Whitehurst, 2003); and book reading style (Haden et al., 1996; Melzi & Caspe, 2005;

Zevenbergen & Whitehurst, 2003).

Emergent Literacy--- Digital

It is commonly accepted that literacy practices have always changed and will continue to

evolve to adapt to social contexts and emerging technologies (Gee, 2007; Leu, Kinzer, Coiro,

Castek, & Henry, 2013).

Multimedia (televisual, CD-ROM, Audio). Marsh and Thompson (2001) reported

analyses on their first stage home literacy practices with 18 three- and four-year-old children and

their parents in the UK. The researchers believe that it is important to promote a wider range of

literacy skills which could be built upon the televisual interests of children. Of the four families

that had used the media boxes when the paper was published, children showed excitement and

interest. The preliminary results indicated that popular culture and the media are deeply

embedded with this particular group of children's daily literacy lives in the home.

Marsh (2006) reviewed three different studies which explored media-related literacy

practices of 83 young children, aged from 2.5 years old to 5 years old in the U.K. The evaluation

found out that the parents held a positive attitude toward their children's engagement with media across the studies. The parents reported that their children had developed knowledge of phonemes and vocabulary through daily engagement with media.

Oakely and Jay (2008) explored the effectiveness of reading electronic talking books (ETB) with 41 reluctant readers ranged from age 8 to 11 in Australia in a home environment. The purpose of the project was to examine if ETBs could be used as a supplemental means in addition to traditional printed books to engage reluctant readers in reading at home. In their 10-week project, parents were asked to attend to an hour-long information session before the commencement, in which the potential benefits of reading ETBs were explained and the software was demonstrated. The parents were also asked to complete a feedback form at least once a week, in regards to the ETB texts that their children read. The researchers found that parents' perception of what was new literacy and if ETB was regarded as reading played a crucial rule in their children's success in the project.

Digital Home Environment. Liebeskind, Piotrowski, Lapierre, and Linebarger (2014) conducted a telephone interview survey with 500 households with children aged from 8 to 36 months old. The study focused on the influence of the home media environment and parent-child relationship on the language ability of the pre-preschool aged children. Their findings strengthened that parent-child interactions played a much more crucial role in the child's language development than digital interaction.

In a series of studies Plowman et al. (2008, 2010a, 2010b, 2010 c, 2011, 2012, 2013), McPake and Plowman (2010), McPake, Plowman, and Stephen (2013) conducted case studies with three- and four-year old children in Scotland. These studies described technologies children encounter at home, how family practices influenced children's encounters with technology, and

the ways it was beneficial for education professionals to know more about children's experiences with technology at home. The findings from this last research program emphasized the competences the children developed at home that could make it easier for their transition to school and also help their creativity (McPake et al, 2013). These results have limited utility in the mobile age since the digital technologies were defined quite broadly in these studies, including desktops, portable computers, modern TV sets, video gaming consoles and music players, touch screen devices. Mobile technologies such as IPads and smartphones were not included in the research (McPake et al, 2013).

Touchscreen devices. Some empirical studies (Baek, Lee, & Kim, 2013; Lauricella, Wartella, & Rideout, 2015) reveal that families shape young children's use of digital devices through their own personal examples. Baek et al (2013) surveyed 488 Korean mothers and the respondents emphasized the positive impact of smart devices may have on their children. Some of the research that had been conducted on parent's attitude towards general media use (TV, computers, DVDs, game centers, mobile devices, etc.) and how it is related to children's media use (Holloway, Green, & Livingstone, 2013; Nikken & Schols, 2015; Rideout, 2013, Roy & Paradis, 2015). These studies found that there is a positive relationship between the frequency of parent use of media and children's use of media. We can probably assume that this holds to mobile devices as well. Only one survey solely focused on parents and their children's coreading on iPads. Vaala and Takeuchi (2012) surveyed 355 American parents with their 2- to 6-year olds. They asked parents to identify app features they thought that helped their children read. The survey found that e-books had not replaced print books in families with iPads.

Rideout (2013) had found that reading is the least common activity on tablets. Children in his sample were more likely to use tablet, iPod Touch and smartphone to watch videos and play

games. Very few research publications to date address perceptions of parents and children, and

what they really do with digital devices specifically regarding literacy practices at home. We set

out to start filling this gap in our understanding of the ways new literacies are changing the ways

children are experiencing literacy outside of formal schooling. We used semi-structured

interviews with mothers and children and follow-up interviews with the same mothers two years

later to reveal what is currently happening in literacy events with digital devices in their homes.

This research opens a window in time as we plan to keep going back to mothers to see how their

perspective change as their children mature, public views change, and technology transforms

literacy.

Research Questions

Three primary questions were explored in this research: (a) How do parents and children

use digital resources in reading and writing practices at home?; (b) What are parents' and

children's role using the digital devices at home respectively?; and (c) How do parents'

perceptions of home literacy with digital devices change?

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Methodology

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We chose a phenomenology approach since the focus of this study was on describing the

experiences of participants and conveying the essence of their experience with the phenomenon

(Creswell, 2012). The study was separated into two phases sets of semi-structured interviews in

each. Phase I was conducted in Spring 2015 with mothers and their children and Phase II was a

follow-up interview with mothers in 2017.

Data Sources

Semi-structured interviews with parents and their young children were the data source for

this study. All the interviews were audio recorded. The interviews in 2015 were about 30-min

with each mother and 10-min with each child. The interviews in 2017 were 15-min for each

participant. The mothers in 2015 were asked questions such as, "How do you think reading and

writing with your children on iPads?" and "What kind of apps you would choose to download for

your children? Why?". Some interview questions with children in 2015 included, "How often are

you allowed to use tablets or smartphones?" and "How do you like iPads, or iPhones? How do

you use them at home?". The mothers in 2017 were asked a few questions, such as "How do you

use iPads and iPhones with your children for reading or writing?" and "How do you think the

one-on-one Chromebook at school?"

        Participants. Participants in Phase I included four mothers and three children from four

families (See Table 1). They were recruited as the purposive sample. Two Chinese mothers were

friends with the first author at the local Chinese church. The other two American mothers live in

the same neighborhood with the first author. They all agreed to be interviewed and after asking

their consent, some of their children were interviewed, too. All the children were born in

America. All the names reported in the study are pseudonyms.

Table 1. *Participant Information*

	Ethnicity	Educational Level	Employment Status	No. of Children	Grade Level of Children	Children interviewed
Lin	Chinese	Ph.D.	Employed	2	Kindergartner/2nd grader	Joshua (K)
Hui	Chinese	Master	homemaker	2	Pre-K/4th grader	Laura (4th grader)
Jenny	Caucasian	Bachelor	Employed	2	Pre-K/pre-K	/
Ashley	Caucasian	Master	homemaker	2	2nd grader/6th grader	Cora (2nd grader)

        Setting. The interviews with children were all conducted in English. Interviews with the

two Chinese mothers were conducted in Chinese. The interviews conducted with children were

at their houses respectively. The places of interviews with mothers were conducted according to

their convenience. Two were conducted at the interviewee's homes, one was conducted at a local

church and another one was conducted at the first author's home. Both the English and Chinese

interviews were transcribed by the first author and then sent back to the mothers for member checking.

Researcher Reflexivity

The current study was proposed by the first author after her baby had a visit to the pediatrician in winter 2014 for the 6-month check-up. She was given a few sheets of patient education about feeding instructions and brain development of 6-month babies. A paragraph with a subtitle ***Reading and Electronic Media*** caught her eye, which read:

> *Books help parent and child grow closer. One way to help your child learn to love reading is to*
> *show that you enjoy reading. Pick books with bright colors and larger simple pictures. Reading*
> *the same books over and over will help your baby to recognize and name familiar objects. Do not*
> *prop a baby in front of a television. (Pediatric Advisor 2010. 1: Well Child Care at 6 Months)*

She found that there was only one sentence of ten words accounting for the "Electronic Media", which was solely television, without giving any further explanation of the damage for babies to watch it for long hours. She was shocked when reading this narrow definition of electronic media, because laptops, IPods, IPads and other tablets were also widely used in homes. At the same time, she was disappointed that recommendations from pediatricians were far left behind, as they were regarded as one of the most reliable and within-reach resources for parents to be involved in current trend of education. She was eager to explore the parents' perceptions of the new format of reading and writing with interactive devices and how the children thought about it.

Data Analysis

Guided by Hatch's (2002) recommendations regarding the use of inductive methods for transcribed data, a list of significant statements was developed. According to Clarke and Braun (2013), a theme captures important information with regard to the specific research questions and represents patterned and meaningful responses to the data. Exploration of the data was conducted

in five steps: becoming familiar with the data, generating initial codes, searching for themes and organizing data in relation to the themes, reviewing themes, defining and naming themes. Reliability and validity of qualitative data are conceptualized with the confines of credibility, neutrality, and dependability (Creswell, 2013). The trustworthiness of this study is demonstrated by the direct citations from the transcripts, which were the basis of interpretations and from which thematic analyses were drawn (Polkinghorne, 2007). In addition, all mothers were sent the transcripts of their interviews to verify their statements and two of them were shared the interpretations of the data for evaluation.

Results and Discussion

The analyses of the data generated six themes in Phase I and three themes in Phase II. Table 2 summarizes the themes with brief descriptions. Across the two Phases, the mothers maintained their roles as device controllers but allowed considerably more freedom as their children aged. For example, Hui reported in both her 2015 and 2017 interviews that she set a time limit for screen time. But in the interview in 2017, she also said, "my older one has to do school projects and needs to search sources online. I allow her to take her time on digital devices if she needed". As for reading with digital devices, the mothers in 2017 reported their children were relied more on digital devices than two years ago at home and in school.

Mothers' Perceptions in 2015

Two mothers said that they did not have iPads at home, when asked the reason for not having an iPad, Lin replied, "Well, we don't think tablets like iPad is necessary, as children most of the time will use it for games. I have an iPhone, and they use it to play games. I do have some reading apps on my iPhone but they would not open it unless I asked."

Paper vs. digital. When asked how their children use digital devices for reading and writing, Hui said, "I have an iPhone. I think the screen is too small to read. My eyes are not comfortable. I don't want them to use the phone to read. My children can read and play games on our desktop with bookmarked websites, such as *Starfall*. They may play one or two days a week. I will control their screen time, say, no more than half an hour each time." Ashley was the only mother mentioned reading together with her child on an iPad. She talked about many digital resources, such as iPhones, iPads, TVs and shared her concern in finding reading apps or websites with quality. She said, "we have been using *Tumblebooks* for the bedtime story. Sometimes, Cora would say she wants to choose a book to read from the website and hear the sound and watch the pictures. We usually read print picture books. The quality of illustrations on *Tumblebooks* vary a lot. Some are really poor."

Screen time. When asked how to monitor their children's use of digital devices, mothers have different opinions:

> "I could control the time, but they will be addicted to it. The more you show iPads or iPhones to them, the more addicted they will be". (Lin)
>
> "I am just afraid that they will be addicted to the devices for games." (Hui)
>
> "We use iPad for reward. If you have done something great, then you may play a certain game for 10-min". (Jenny)
>
> "We don't have a rule for when you should not read or write with a digital device. But we ask our children to read each day for at least half an hour." (Ashley)

Digital resources. When the mothers were asked the question "What kinds of apps would you choose to download?", they showed a common preference over educational resources. Lin replied, "I downloaded math games and books apps for my children." Hui said, "I went over

the public school websites to read for recommendations and also talk with my friends or teachers

asking what kinds of websites and apps are good for education. I don't want to download games

for my children. Ashley reported having been downloading lots of different apps, including

games, math games, and reading. Jenny said, "I also like to download some apps for puzzles and

drawings.

     Sources of the resources. Jenny, a mother with two Pre-K girls said, "My husband and I

will read the feedback and comments of an app first before downloading it to our iPad, and we

have a few apps in reading but none in writing. Our girls are still little so we usually enjoy

reading paper books with them. Hui said, "Where did I get the websites information? I think

some friends shared with me."

Children's Perceptions in 2015

     Cora was very excited to share her experiences in using iPad in class on the day of being

interviewed. She said, " We used iPad today in class, it was so much fun. We all wanted to touch

it." When asked about her experiences in reading with digital devices, she said, " I like how I can

control the reading and the devices. I like the sounds there. Mom often asks me what I want to

read for bedtime story and sometimes I would like to go with the iPad. It is fun." Joshua was a

Kindergartner at the time of the interview. He said, "my mom doesn't allow us to play on her

phone. My sister and I always begged. There is a Super Target near our home, so whenever my

parents took us over for shopping, we will play with iPads over there. I like to play with them.

There are so many games to play." Laura, the 4th graders, said, " I would love to play with

phones or iPads, but we don't have an iPad at home. Mom seldom allows us to play on her

phone. She said it would do harm to our eyes. I don't really care. My friends told me some

websites and apps and I asked my mom if I can download and play with them. Well, usually, she

would say no. I hope we can have an iPad at home."

Mother's Perceptions in 2017

Hui, Ashley, and Jenny were reached out in Spring 2017 to do a follow-up interview.

When asked if they had any new digital devices in the past two years, Jenny said, "We bought

quite a few more. We have three iPads now and a Kindle. We also have a new TV and a new

game console." Ashley replied, "We traded our old iPad for a new one, bought a new iPad, and

had a Kindle for Cora. Hui answered, "We bought an iPad last year and I changed my iPhone to

the newest version."

When asked their views on reading and writing with digital devices, Ashely replied,

"Cora loves her Kindle. She now reads a lot with it. We think it is cool. When we travel, we

don't need to carry many books. She can just download the books from Amazon." Hui said,

"Laura told us that she's on screen almost all the time at school for reading and writing. What I

think is that she doesn't need much screen time at home if she has it at school to protect her

eyes." Jenny said, "we enjoyed having children to do some reading with iPads. Some of them are

really fun. Girls love to do the puzzles and see the animations. We use *Epic* a lot."

When Ashley and Hui were asked their opinions of the one-on-one Chromebook at their

children's schools. Ashley said, "Cora is excited having her own Chromebook. But she also told

me that some of the children went to other websites when the teacher did not watch closely. It

will be hard for the teachers, I mean, how can teachers watch everybody at once? But I am glad

that the local district began to move forward in technology." On the other hand, Hui admitted

that she still controlled for the screen time at home. She said, "I don't want them to use those

digital devices to play games, but if they need them for school projects, then sure. This is a trend that my children have to follow but I think that I do need to monitor their usage."

The few themes generated from the interviews with mothers in 2015 (Table 2) indicated that print book was still the major medium for parents to do shared book reading. Only one mother used *Tumblebooks* for shared reading occasionally but complained about the quality of the animations and illustrations. In 2017, we learned from the three mothers interviewed that coreading on digital devices was still not common. Only the mother with young children (Jenny) reported "sometimes" read together on an iPad. The findings corresponded with the survey results (Rideout, 2013; Vaala & Takeuchi 2012) that coreading on digital devices were the least to happen. The maternal verbal support is thus relatively less during reading activities with digital devices compared with print book reading. Additionally, parents usually leave the "discovery" job to the children and expect that children learn the skills naturally, confirming similar findings by Kerawalla and Crook (2002) that parents seldom motivated their children's skills with computer. Another thing to note is the boundaries between literacy and play blur with apps/website on interactive digital devices. This fact could be promising or problematic depending on how much literacy activity is actually happening.

The interviews in 2015 with the children suggested that children usually enjoyed playing with a screen. They liked the sense of ownership when they are using the digital devices. They were eager learners with the interactive activities and sound effects embedded. Children believed the time on digital devices is for "play." These findings answer the first research question of the study on how mothers and children use their digital devices in reading and writing at home. It can be seen that the literacy events defined as reading and writing in oral and print by Taylor (1983) has been expanded and become diversified due to beliefs and cultural practices of

families in their perceptions of the digital devices. The interviews also indicated that e-books

attracted more attention and engagement from children, which support findings of the few

studies (Chiong et al., 2012; Krcma & Cingel, 2014; Neumann, 2017; Ross et al., 2016) on

parent-child interactions with touchscreen books readings in home setting.

Table 2. *Themes and Descriptions of Phase I (2015) and Phase II (2017)*

	Themes	Descriptions
Phase I 2015	Paper books VS. digital books	All the four mothers favored print book reading. Only one shared experiences of coreading with her daughter on an iPad.
	Screen time	Some mothers prefer a time limit set with digital devices.
	Digital resources	Mothers favor educational related resources while children welcome games and music.
	Sources of the resources	Mothers reported public school parent resource website, individual school website, friends, teachers, comments of users. Children mainly depend on their friends' recommendations.
	Roles of parents	Parents are the digital devices controllers and digital resources providers.
	Roles of children	Children are the receivers of digital resources and contributors of sources.
Phase II 2017	Digital devices	All mothers reported having more digital devices over the two years.
	Book reading	Print book reading was still favored but all mothers reported that their children increased using tablets, smartphones, or Chromebooks for reading.
	Learning online	Some mothers with older children showed concern of their children's time management, focus, and planning when working with digital devices.

The second research question is about the roles of mothers and children when using

digital devices. The interviews with mothers in 2015 demonstrated that some parents control the

digital devices in terms of screen time and content. Interestingly, children interviewed in 2015

were not recipients but also contributors of the resources of these interactive digital devices.

They enjoyed the sense of ownership when playing with these devices. They exchanged

resources with their friends and actively passed the information to their parents. These findings

reflected that the co-created practices have the greatest impact on the child in the microsystem

level of the ecological model (Bronfenbrenner, 1989). In these few interviews with children and

their mothers, children watch and learn from their significant others, in particular, their parents,

at home. They are affected by their parents' belief in literacy practices with digital devices but in

turn, their behaviors influence their parents.

The third research question focuses on the change of parents' perception. As discussed

above, the child's behaviors influence the perception of the parents in the microsystem level

according to Bronfenbrenner's ecological model (1986, 1989). In addition, the mesosystem that

includes the interactions of families, schools and community (Berk, 2013) may help us answer

this third question. The local public school district where the study was conducted began its one-

on-one Chromebook project in fall 2016. All the fifth graders above are provided a personal

Chromebook and every 2nd graders above were provided a Chromebook to use in classrooms

until fall 2018. Tech carts with iPads were provided for K-1 grade levels. The support of

technology integration into education from local public school district have had a broader impact

on the parents' perception on the digital devices. It may explain why mothers interviewed in

2017 showed an increasing acceptance and use of digital devices for home reading and writing

practices.

Significance and Limitations

Given the lack of research on parent-child home reading and writing practices with

interactive digital devices, the current study interviewed both mothers and children to understand

better of what is currently happening at home. In addition, most of the previous research on

interactive digital devices were surveys with parents, young children's voices were seldom

heard. This study interviewed three young children ranging from kindergarten, 2nd and 4th grades to give us a glimpse from the children's perspectives. In addition, the study re-interviewed the same mothers after two years to keep updated with the current development.

One of the limitations of the current study is the small sample size of participants, four mothers and three children. Besides, these participants were purposive samples. Although the sample size limits the ability to generalize the results, the purposive sample guaranteed the trustworthy of the interview data. Another limitation is important to note is the data source. Interviews are the only data source for this study. Observational study with home visits would strength the findings of the study.

The current study illustrates an increasing trend of children using digital tools for independent reading. Future research may focus on the shared reading interventions with digital devices with young children with an experimental design to compare the parent-child interactions with touchscreen books and print picture books. Additional research could be directed towards the fathers' role in the home literacy events with digital devices. The present study does suggest that fathers may involve more compared with print book reading. Different perspectives on digital devices due to cultural differences will be another direction for researchers. Teachers are encouraged to involve parents with the help of social media and technology, as findings of the study indicate that parents do not know what and how digital devices their children use at school. Teachers and administrators may also give children guidelines for the time management and planning skill with digital devices as Bronfenbrenner (1986) suggested that in addition to families and communities, children's development is influenced by the systems of support that serve them.

References

Allison, D. T., & Watson, J. A. (1994). The significance of adult storybook reading styles on the development of young children's emergent reading. *Literacy Research and Instruction*, *34*, 57-72. Retrieved from https://doi.org/10.1080/19388079409558171

Baek, Y. M., Lee, J. M. & Kim, K. S. (2013). Smart phone use condition of infants and toddlers. *International Journal of Smart Home, 7*, 123–132. Retrieved from http://dx.doi.org/10.14257/ijsh.2013.7.6.12

Berk, L. E. (2013). *Child Development* (9th ed.). New Jersey, NJ: Pearson Education. 24.

Bradley, R. H., Corwyn, R. F., Burchinal, M., McAdoo, H. P., & Coll, C. G. (2001). The home environments of children in the United States Part II: Relations with behavioral development through age thirteen. *Child Development*, *72* (6), 1868-1886. Retrieved from https://doi.org/10.1111/1467-8624.t01-1-00383

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & Coll, C. G. (2001). The home environments of children in the United States part I: Variations by age, ethnicity, and poverty status. *Child Development*, *72*(6), 1844-1867. Retrieved from https://doi.org/10.1111/1467-8624.t01-1-00382

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspective. *Developmental Psychology, 22*, 723-742.

Bronfenbrenner, U. (1989). Ecological systems theory. *Annals of Child Development, 6*, 187-249.

Bus, A., Van Ijzendoorn, M., & Pellegrini, A. (1995). Joint book reading makes for success in

learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research, 65*, 1-21. Retrieved from

https://doi.org/10.3102/00346543065001001

Cairney, T., & Ruge, J. (1998). *Community literacy practices and schooling: Towards effective support for students*. Canberra: DEET.

Chiong, C., Ree, J., Takeuchi, L., & Erickson, I. (2012). Print books vs. e-books: Comparing parent-child co-reading on print, basic, and enhanced e-book platforms. *The Joan Ganz Cooney Center*, *Quick Report*.

http://www.joanganzcooneycenter.org/publication/quickreport-print-books-vs-e-books/

Clarke, V., & Braun, V. (2013). Teaching thematic analysis: Over-coming challenges and developing strategies for effective learning. *The Psychologist*, 26, 120–123. Retrieved from http://eprints.uwe.ac.uk/21155

Creswell, J. W. (2012). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage..

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.

Gee, J. P. (2001). A sociocultural perspective on early literacy development. In S. B. Neuman & David K. Dickinson (Eds.), *Handbook of early literacy research* (pp 30-42). New York: Guilford.

Gee, J. P. (2007). Good video games +good learning: Collected essays on video games, learning and literacy. New York: Peter Lang Publishing, Inc.

Gold, J. (2014). *Screen-smart parenting: How to find balance and benefit in your child's use of social media, apps, and digital devices*. The Guilford Publications.

Goodman, Y. M. (1980). *The Roots of Literacy*. In M.P. Douglas (Ed.), *Forty-fourth yearbook of the Claremont Reading Conference* (pp. 1-12). Claremont, CA: Claremont Reading Conference.

Haden, C., Reese, E., & Fivush, R. (1996). Mother's extratextual comments during storybook reading: Stylistic differences over time and across texts. *Discourse Processes*, *21*(2), 135-169. Retrieved from https://doi.org/10.1080/01638539609544953

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: Paul H. Brookes Publishing Corporation.

Hatch, J. A. (2002). *Doing qualitative research in education settings*. Albany: State University of New York Press.

Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms*. Cambridge University Press.

Holloway, D., Green, L., & Livingstone, S. (2013). *Zero to eight. Young children and their internet use*. LSE, London: EU Kids Online.

International Reading Association. (2009). *New literacies and 21st century technologies: A position statement of the International Reading Association*. Newwark: DE: Author.

Kerawalla, L., & Crook, C. (2002). Children's computer use at home and at school: context and continuity. *British Educational Research Journal*, *28*(6), 751-771. Retrieved from https://doi.org/10.1080/0141192022000019044

Krcmar, M., & Cingel, D. P. (2014). Parent–child joint reading in traditional and electronic formats. *Media Psychology*, *17*, 262-281. Retrieved from http://dx.doi.org/10.1080/15213269.2013.840243

Lauricella, A., Wartella, E. & Rideout, V. J. (2015). Young children's screen time: The complex

role of parent and child factors. *Journal of Applied Developmental Psychology, 36*, 11–

17. doi:http://dx.doi. org/10.1016/j.appdev.2014.12.001.0193-3973/

Leu, D. J., Kinzer, C. K., Coiro, J., Castek, J., & Henry, L. A. (2013). New literacies and the new

literacies of online reading comprehension: A dual level theory. In N. Unrau & D.

Alvermann (Eds.), *Theoretical models and processes of reading* (pp. 1150-1181).

Newark, DE: International Reading Association.

Leu, D. J., Zawilinski, L., Forzani, E., & Timbrell, N. (2015). Best practices in teaching the new

literacies of online research and comprehension. In. L. B. Gambell & L. M. Morrow

(Eds.), *Best Practices in literacy instruction* (pp 85-106). New York: Guilford Press.

Lever, R., & Sénéchal, M. (2011). Discussing stories: On how a dialogic reading intervention

improves kindergartners' oral narrative construction. *Journal of Experimental Child

Psychology*, *108*, 1-24. Retrieved from http://doi.org/10.1016/j.jecp.2010.07.002

Liebeskind, K. G., Piotrowski, J. T., Lapierre, M. A., & Linebarger, D. L. (2013). The

home literacy environment: Exploring how media and parent–child interactions

are associated with children's language production. *Journal of Early Childhood Literacy*,

14(4), 482-509. Retrieved from https://doi.org/10.1177/1468798413512850

Marsh, J. (2006). Global, local/public, private: Young children's engagement in digital literacy

practices in the home. In K. Paul & J. Rowsell (eds), *Travel notes from the new literacy

studies: Instances of practice* (pp. 19-38). Great Britain: Cromwell Press Ltd.

Marsh, J., & Thompson, P. (2001). Parental involvement in literacy development: using media

texts. *Journal of Research in Reading*, *24*(3), 266-278. Retrieved from

https://doi.org/10.1111/1467-9817.00148

McTavish, M. (2007). Constructing the big picture: A working class family supports their

daughter's pathways to literacy. *The Reading Teacher*, *60*(5), 476-485. Retrieved from

https://doi.org/10.1598/RT.60.5.7

McPake, J., Plowman, L., & Stephen, C. (2013). Pre-school children creating and

communicating with digital technologies in the home. *British Journal of Educational

Technology*, *44*(3), 421-431. Retrieved from https://doi.org/10.1111/j.1467-

8535.2012.01323.x

Melzi, G., & Caspe, M. (2005). Variations in maternal narrative styles during book reading

interactions. *Narrative Inquiry*, *15*, 101-125. DOI: 10.1075/ni.15.1.06mel

Morrow, L. M. (Ed.). (1995). *Family Literacy: Connections in Schools and Communities*. New

Brunswick, NJ: International Reading Association.

Neumann, M. M. (2017). Parent scaffolding of young children's use of touch screen

tablets. *Early Child Development and Care*, 1-11. Retrieved from

http://dx.doi.org/10.1080/03004430.2016.1278215

Nikken, P., & Schols, M. (2015). How and why parents guide the media use of young

children. *Journal of Child and Family Studies*, *24*, 3423-3435. doi:10.1007/s10826-015-

0144-4

Paratore, J. R. (2005). Approaches to family literacy: Exploring the possibilities. *The Reading

Teacher*, *59*(4), 394-396. Retrieved from https://doi.org/10.1598/RT.59.4.10

Plowman, L., McPake, J., & Stephen, C. (2008). Just picking it up? Young children

learning with technology at home. *Cambridge Journal of Education*, *38*(3), 303-319.

Retrieved from https://doi.org/10.1080/03057640802287564

Plowman, L., Stephen, C., & McPake, J. (2010 a). Supporting young children's learning

with technology at home and in preschool. *Research Papers in Education*, *25*, 93-113.

Retrieved from https://doi.org/10.1080/02671520802584061

Plowman, L., Stephen, C., & McPake, J. (2010 b). *Growing up with technology: Young*

children learning in a digital world. New York: Routledge.

Plowman, L., McPake, J., & Stephen, C. (2010). The technologisation of childhood?

Young children and technology in the home. *Children & Society*, *24*, 63-74. Retrieved

from https://doi.org/10.1111/j.1099-0860.2008.00180.x

Plowman, L., Stevenson, O., Stephen, C., & McPake, J. (2012). Preschool children's

learning with technology at home. *Computers & Education*, *59*, 30-37. Retrieved from

https://doi.org/10.1016/j.compedu.2011.11.014

Plowman, L., & McPake, J. (2013). Seven myths about young children and

technology. *Childhood Education*, *89*, 27-33. Retrieved from

https://doi.org/10.1080/00094056.2013.757490

Polkinghorne, D. E. (2007). Validity issues in narrative research. *Qualitative Inquiry*,*13*(4), 471–

486. Retrieved from https://doi.org/10.1177/1077800406297670

Rideout, V. (2013). Zero to eight: Children's media use in America 2013. *A Common Sense*

Media Research Study. https://www.commonsensemedia.org/research/zero-to-eight-

childrens-mediause- in-america-2013

Roberts, J., Jergens, J., & Burchinal, M. (2005). The role of home literacy practices in preschool

children's language and emergent literacy skills. *Journal of Speech, Language, and*

Hearing Research, *48*(2), 345-359. doi:10.1044/1092-4388(2005/024)

Ross, K. M., Pye, R. E., & Randell, J. (2016). Reading touch screen storybooks with mothers

negatively affects 7-year-old readers' comprehension but enriches emotional

engagement. *Frontiers in Psychology*, *7*, 1-17. doi:10.3389/fpsyg.2016.01728

Roy, R., & Paradis, G. (2015). Smartphone use in the daily interactions between parents and

young children. *Psychology & Child Development Department CSU Stanislaus*.

https://www.csustan.edu/sites/default/files/groups/Child%20Development/srcd_poster_2

015_-smartphones.pdf

Scarborough, H. S., & Dobrich, W. (1994). On the efficacy of reading to preschoolers.

Developmental Review, *14*, 245-302. Retrieved from

https://doi.org/10.1006/drev.1994.1010

Sénéchal, M. & LeFevre, J. (2001). Storybook reading and parent teaching: Links to

language and literacy development. In. P.R. Britto & J. Brooks-Gumm (Eds.), *The role of

family literacy environments in promoting young children's emergent literacy skills* (pp.

39-52). San Francisco: Jossey-Bass.

Sénéchal, M., & LeFevre, J. (2002). Parental involvement in the development of children's

reading skill: A five-year longitudinal study. *Child Development*, *73*(2), 445-460.

Retrieved from https://doi.org/10.1111/1467-8624.00417

Sénéchal, M., LeFevre, J., Hudson, E., & Lawson, P. (1996). Knowledge of storybooks as a

predictor of young children's vocabulary. *Journal of Educational Psychology*, *88*(3),

520-536. Retrieved from http://dx.doi.org/10.1037/0022-0663.88.3.520

Sénéchal, M., LeFevre, J., Thomas, E., & Daley, K. (1998). Differential effects of home literacy

experiences on the development of oral and written language. *Reading Research

Quarterly*, *33*, 96-116. Retrieved from https://doi.org/10.1598/RRQ.33.1.5

Snow, C. E., Barnes, W. S., Chandler, J., Goodman, I. F., & Hemphill, L. (1991). *Unfulfilled*

expectations: Home and school influences on literacy. Cambridge, MA: Harvard

University Press.

Snow, C. E. Burns, M., S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young*

children. Washington, DC: National Academy Press.

Street, B. V. (1984). *Literacy in theory and practice*. Cambridge, UK: Cambridge University

Press.

Strouse, G. A., O'Doherty, K., & Troseth, G. L. (2013). Effective coviewing: Preschoolers'

learning from video after a dialogic questioning intervention. *Developmental*

Psychology, *49*, 2368-2382. Retrieved from http://dx.doi.org/10.1037/a0032463

Taylor, D. (1983). *Family literacy: Young children learning to read and write*. Exeter,

NH: Heinemann.

Taylor, D., & Strickland, D. S. (1986). *Family storybook reading*. Heinemann Educational

Books.

Teale, W. H., & Sulzby, E. (1986). *Emergent literacy: Writing and reading. Writing research:*

Multidisciplinary inquiries into the nature of writing series. New Jersey, NJ: Ablex

Publishing Corporation.

Vaala, S., & Takeuchi, L. (2012). *Co-reading with children on iPads: Parents' perceptions and*

practices. The Joan Ganz Cooney Center.

Wasik, B. H., Dobbins, D. R., & Herrmann, S. (2001). Intergenerational family literacy:

Concepts, research, and practice. In Neuman, S. B. & Dickinson, D. K. (Eds.), *Handbook*

of early literacy research (pp. 444-458). New York: The Guilford Press.

Wasik, B. H., & Herrmann, S. (2004). Family literacy: History, concepts, services. In B. H.

Wasik (Eds.), *Handbook of family literacy* (pp. 3-22). Mahwah, NJ: Erlbaum.

Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., DeBaryshe, B. D., Valdez-

    Menchaca, M. C., & Caulfield, M. (1988). Accelerating language development through

    picture book reading. *Developmental psychology*, *24*, 552-559. Retrieved from

    http://dx.doi.org/10.1037/0012-1649.24.4.552

Zevenbergen, A. A., & Whitehurst, G. J. (2003). Dialogic reading: A shared picture book

    reading intervention for preschoolers. In A.V. Kleeck, S. A. Stahl, & E. B. Bauer (Eds.),

    On reading books to children: Parents and teachers (pp. 177-200). New York:

    Routledge.

An Innovative Design for Peer Mentoring: Tiered Cognitive Coaching

Joyce C. Fine, Florida International University

Obi Lawrence and Al Lawrence, Miami-Dade County Public Schools

Abstract

Preparing Literacy Coaches to support teachers is a critical role for faculty in Literacy programs. The curricular design of the method used to enhance the preparation of literacy coaches described in this article presents an innovative model to incorporate the authentic experiences of doctoral candidates to support master's candidates participating in a practicum. While supporting the master's candidates, the doctoral candidates also met the new standards from the International Literacy Association for the preparation of Literacy Coaches.

Designing curriculum for courses and programs is a collaborative effort among faculty to enhance teaching and learning for candidates. It involves faculty using the knowledge and experience to bring the latest research-based ideas to create courses. At a university where we are preparing both undergraduate and graduate students, we recognized that there is additional expertise available from graduate candidates who come with insights from their experience that can be shared. This perspective lead to developing an innovative design for peer mentoring using a tiered cognitive coaching model. This article will share the model of doctoral candidates mentoring master level candidates in a supervised clinical setting using a modification of Cognitive Coaching (Costa & Garmston, 1994), which provides a way to achieve the new Literacy Coaching Standards from the International Literacy Association (ILA, 2017). It will also share the reflections of the doctoral candidates from this experience.

Theoretical Framework

From a socio-cultural theoretical perspective (Bronfenbrenner, 1979), which states that there are concentric levels that affect students' development, we decided to incorporate the expertise of our doctoral students into a summer practicum course. The practicum consisted of an integration of two courses, Diagnosis of Reading Difficulties and Programs of Remediation. The Master of Science in Reading Education candidates worked one-on-one to diagnose elementary students and to create lessons targeted to their needs in two-hour sessions daily for two and a half weeks. Groups of four candidates and their students were clustered in separate communities in different classrooms. The master's candidates kept both Assessment Journals and Diagnostic Teaching Journals with their assessments and teaching plans in the respective journals. These were reviewed by the doctoral candidates daily. During the tutoring sessions, there was a rotating opportunity for the master's candidates to tutor a differentiated lesson to all

the students in the community. Two professors conducting the courses supervised all the

communities, adding another level. The Master's candidates, doctoral candidates and professors

met for an hour before tutoring and two hours after tutoring. See figure 1.

Figure 1. The Cognitive Coaching Model (Costa & Ganston, 1994)
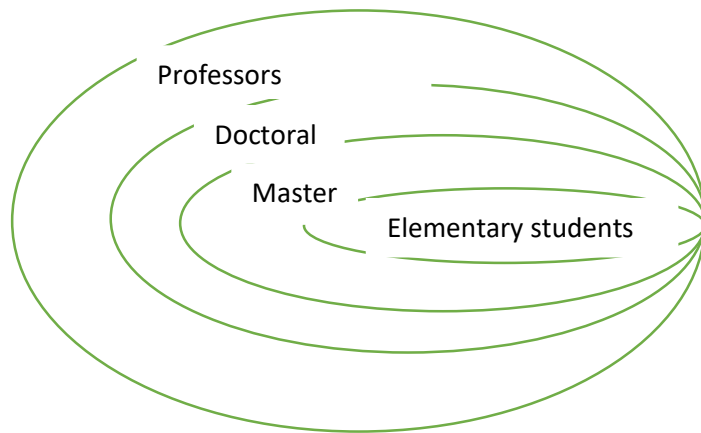
The Cognitive Coaching model by Costa and Ganston (1994) features three steps: 1) a

planning conference in which the teacher tells the coach the goals and objectives of the lesson; 2)

a lesson observation in which the teacher teaches a lesson and the coach observes, gathers data

about the lesson, and looks for evidence of student learning; and 3) a reflecting conference in

which the teacher shares his or her impression of how successful the lesson was and self-

assesses. The coach summarizes the data from the rubric and mediates the process using "gentle"

language to offer suggestions of ways to improve the lesson. Gentle language is language in

which suggestions from one's own experience or from other teachers are shared supportively,

without directives to change pedagogical methods. Together, the coach and the teacher

summarize the comparison of the lesson plan and the performance.

The problem with the regular Cognitive Coaching model for coaching literacy instruction

lies in **who** is coaching and **what** is gained. The coach needs to be a knowledgeable, highly

skilled literacy teacher who knows the students' needs, the teacher's abilities, available

resources, and has experience coaching literacy teachers. Often, an administrator, who is not

experienced in teaching literacy and does not know the learning needs of the students, completes

the observation. At best, this type of coaching, which might take place once a year with little or

no follow-through, results in modest improvement for the teachers or students.

Recognizing this situation in which teachers are observed and evaluated, the International

Literacy Association (ILA) has included standards for Literacy Coaching (2017). Literacy Coach

Standard 5: Learners and the Literate Environment states the following:

> Coaches support and facilitate colleagues' ability to **meet the developmental needs** of
> all learners: **Use a variety of digital and print materials** to engage and motivate all
> learners: **integrate digital technologies** in appropriate, safe, and effective ways: **foster a
> positive climate** that supports a literacy–rich learning environment.

- 5.1 Candidates guide colleagues **to meet the developmental needs** of all learners,
  taking into consideration their physical, social, emotional, cultural and intellectual
  factors.
- 5.2 Candidates facilitate the **use of a variety of digital and print materials** to
  engage and motivate all learners.
- 5.3 Candidates lead the **integration of digital technologies** in appropriate, safe
  and effective ways and assist teacher in these efforts.
- 5.4 Candidates support stakeholders **to foster a positive climate** that supports a
  literacy-rich learning environment.

Peer Mentoring with Tiered Cognitive Coaching is one way in which teacher preparation

programs can meet the new ILA standard because it offers a means of preparing literacy

coaches steeped in literacy knowledge gained from their literacy programs and their

classroom experience, who have had a chance to observe and evaluate the assessment of

students and the detailed lesson plans made to target the students' needs. Additionally, there

is continuous support, as the observations are also made twice a week for a total of 4 times

during the practicum. This situation provides much more contact with someone who is

knowledgeable about the students and can provide more feedback to foster a positive learning environment.

Context

The doctoral candidates were enrolled in a course called Supervised Field Experience which is designed to provide opportunity to perform supervisory duties appropriate to the students' professional goals. This supervised, on-site practicum provided the setting for each doctoral candidate to supervise a small community of master's candidates and their students working in two different rooms. The objective for them was to develop adaptive expertise, the ability to use knowledge to solve problems when diagnostic skills are needed to support student learning. They used two types of feedback, soft and hard. Soft feedback was used when the master's candidates were teaching what the students needed, but the master's candidates needed to be prompted to fully understand the reasons for the teaching moves. The hard feedback was used when the master's candidates needed more direction as to what to teach and why. Each of the doctoral candidates kept detailed field notes about each of the master's candidates in their community using the format in Figure 2.

Figure 2. Coaching Field Notes Form

Doctoral Coach: _____

Masters Candidate: _____

Date	Focus of the Observation	Observation Notes	Reflective Conference Notes: MC's response to How did the lesson go?	Reflective Conference Notes: DC's feedback.	Reflective Conference Notes: MC's comments.

During the Planning Conference, the doctoral candidate and master's candidate discussed the tutoring session's plan and collaboratively decided which part of the agenda the master's candidate wanted the doctoral candidate to observe. Both agreed that the observation session should be in an area the master's candidate self-identified as an area of growth so that the observations, feedback, and conferences would be more meaningful and relevant for the master's candidate's needs. The doctoral candidates wanted the master 's candidates to perceive the observation experiences as a stress-free, relevant, and meaningful professional development. The observation session began after identifying the focus of the observation.

Each doctoral candidate observed for one hour and made field notes about what was observed at the point of focus for the lessons. For most master's candidates, the observation session seemed to be intimidating, even though the observation sessions were pre-arranged and focused on what the master's candidates self-identified. The doctoral candidates noticed that writing notes after, rather than while conducting the observation, was less intimidating for the master's candidates.

During the reflecting conference, doctoral candidates gave feedback to the master's candidates based on what was observed, keeping in mind the pre-arranged focus of the observation. Master's candidates had opportunities to brainstorm for improvement ideas and shared them with their doctoral candidate coach. Doctoral candidate coaches guided discussions and provided opportunities for the master's candidates to think critically about what might be done. They used "gentle" language and professional behaviors to make suggestions to solve any issues or problems that arose.

The master's candidates reflected and responded to the suggestions. The conference practices followed the guidelines of soft and hard coaching. The hard coaching always

happened following the master's candidates' request for suggestions and recommendations. Doctoral candidate coaches always explained the rationale of their thinking. Other areas for growth identified during the tutoring experiences were also discussed at the end of each session.

Findings from Field Notes

There were three main themes that emerged from reviewing the doctoral candidates field notes. These were related to 1) the master's candidates' assessment of the students, 2) the time constraints that the master students felt during both the assessment and the remediation lessons, and 3) the decision-making process during teaching regarding the use of materials. For the assessment of students, master's candidates expressed confusion about the purpose and procedures for assessing even though each of the assessment instruments had been explained in textbook readings and with discussion in class. They said they did not know when to stop the assessments based on the students' performance. They were guided with soft feedback by the doctoral candidates to remember when to stop assessing based on when students had reached frustration on assessments, and the importance of understanding how and why they were assessing. When necessary, the doctoral candidates used hard feedback to explain that knowing the instruments well before implementing them would help them to feel confident in using them and would lead to producing more accurate results.

Because the students were being tutored for a total of two hours a day, the master's candidates were very conscious of time. They had prepared plans and timeframes to help them plan the amount of time for each activity. Some of the master's candidates said they felt rushed to complete the assessments and diagnostic teaching activities. The doctoral candidate coaches

explained that careful planning and organization of materials would help them to eliminate wasted time so there would be more accurate assessment and meaningful instruction.

While teaching, the master's candidates commented on the difficulty of making on-the-spot decisions if materials were too difficult or too easy or if students seemed to lose interest. The doctoral candidate coaches emphasized that they needed to use the data gained from diagnosing the students to make decisions about their instructional levels, areas for growth and interests. If students were losing motivation, they needed to be sure to incorporate the students' interests and to make the instructional content relevant to them.

The discussions between the doctoral candidates and the master's candidates during the cognitive coaching sessions contributed to the quality of the tutoring program. The small number of master's candidates each doctoral candidate coached provided an opportunity to closely monitor the development of the knowledge, skills, and dispositions of each master's candidate. Hopefully, they will be able to continue to teach using these. The doctoral coaches also met the highest standards for literacy coaches as described by ILA. As a post-script, one of the coaches continued to coach one of the master's candidates when she started teaching at his school the next year. The two had a very beneficial professional relationship which resulted in the master's student being recognized as the Rooky Teacher of the Year at her school and the Coach being recognized as an Impactful Teacher by the state Department of Education's Commissioner. Such recognition is not the main goal, but the learning by everyone seems to indicate that this model of Tiered Cognitive Coaching is worth implementing!

References

Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and

     design. Cambridge, MA: Harvard University Press.

Costa, A. L., & Garmston, R. J. (1994). Cognitive coaching: A foundation for renaissance

     schools. Norwood, MA: Christopher-Gordon.

Darling-Hamond, L. & Bransford, J. (2005). Preparing teachers for a changing world: What

     teachers should learn and be able to do. Eric: Report: U.S. Department of Education.

International Literacy Association, *Draft Standards for the Preparation of Literacy*

     Professionals, 2017.

Creating, Preserving, and Exploring Literacy Archives: *The History of Reading News* as a Case

Samuel R. DeJulio

University of Texas at Austin

Norman Stahl

Northern Illinoise University

James R. King

University of South Florida

Abstract

Creating archives is a selective process that requires negotiating the tension between offering

breadth and specificity. In spite of this inherent challenge, archives can offer unique perspectives

on organizations, including the people, the choices, and the narratives that have determined what

the organization became (and continues to become). In this study we explore the archived issues

of the *History of Reading News (HRN)* to understand the organization that produced it. The

History of Reading Special Interest Group (SIG) of the International Reading/Literacy

Association published *HRN* from 1976 to 2015. During that time, *HRN* was both an ongoing

record and a tool used by the SIG. We considered the newsletter as a way of understanding the

History of Reading SIG as well as consider how *HRN* was used by the organization. In this

historical research study, we used content analysis to identify 20 categories that appeared in the

newsletter. We describe *HRN*, including some of its features and the frequency at which each of

the categories appeared over the 71 issues of the newsletter. We also found *HRN* to be a record

of the SIG's work and a tool the group used in advocating for historical research in reading. Our

analysis provides a window into the work, development, and contributions of the History of

Reading SIG over 40 years.

Keywords: Archives, History, Content Analysis, newsletter

Archives

A logical beginning for any essay on the importance of archives as a data repository for the literacy profession can be derived from John Ridener's (2009) seminal source *From Polders to Postmodernism* - a curious title for text-length manuscript on archival theory. Likely the question arises as to what is the definition of *polders*? Ridener's (2009) use of a Dutch metaphor - *polders* - is a nod to the original archivists in Holland. A polder is a low-lying tract of land enclosed by dikes that form an artificial hydrological entity, meaning it has no connection with outside water other than through manually operated devices. There are at least three types of polder to consider: 1.) land reclaimed from a body of water, such as a lake or the sea bed, 2.) flood plains separated from the sea or river by a dike, and 3.) marshes separated from the surrounding water by a dike and subsequently drained. In terms of functional meaning, all three types of polders are land made from non-land, an organization of space that is new, that brings new substance into life. It is similar with archiving: new meaning, new substance brought forth from existing chaos. The archive deems groups of records important enough to preserve and organize so that the actions taken by the organization are subsequently available to the organization that generated them. Archival theory has been developed with varying levels of intentionality over the past 120 years. There are three areas of influence in the development of archival theory**:** paradigm shifts, technological changes, and shifts in historiography (methods regarding historical research). There are also reciprocal relationships between archives and histories**.** Historians rely on archival material to complete their work as well as to maintain the integrity of archival records. Reciprocally, archivists rely on historians to use archival materials and validate the truthfulness of records in the archive.

An early, perhaps first attempt at archival organization that was mentioned earlier, *The Dutch Manual* (1898/2003), was written by a group of three 18th century Dutch archivists: Samuel Muller, Johan A. Feith, and Robert Fruin. It was a product of *consolidation* and *standardization* of much of the practical and localized practices undertaken by emerging archivists in the Netherlands during the 18th century. Because historians were the primary users of archives, their professional orientation to objective truth created a need for objective records in the archive. But this perspective was to change. Roots of this change in paradigm were context within culture, changes in experience and theoretical writing, impact of critical theory, and the influences of technology. These changes in paradigms resulted in several periods of archival inquiry: *Consolidation* in *The Dutch Manual* (Muller, Feith, & Fruin, 2003), *Reinforcement* (Jenkinson, 1922), *Modern* (Schellenberg, 2003), *Questioning* – resulting from the literary turn in history (Brothman, 1992; Cook, 2001; Heald, 1996; MacNeil, 1994). As a result, the role of the archivist has changed significantly over time: Jenkinson's (1922) passive keeper of records, Schellenberg's (2003) administrative records manager, and now, actively, intellectually engaged, and challenging creators and curators of cultural memory. The role of the archivist has shifted from an exclusively administrative role to one encompassing a broad range of mandates from administration to *cultural selector and curator.* The *power of the archive*, according to Schwartz and Cook (2002), is about maintaining power: the power of the present to know what is and will be known about the past, and the power of remembering over forgetting. Power plays an important role in the creation of memory from archives as well as guiding archivists in their appraisal decisions as members of the organizations they represent.

Organizations and Histories

The power of associations has reached its highest degree in America. Associations are made for the purposes of trade, and for political, literary and religious interests. It has never been by recourse to a higher authority that one seeks success, but by appeal to individual powers working in concert (Central New York Library Resources Council Documentary Heritage Committee, 1993). Organizations and associations are social constructs: a creation of someone's ideas, vision, and beliefs, and depend upon the actions of human beings (Morgan, 1997). The history of an organization or an association is the narrative of "how the way we do things came about." It presents the events that trace the developmental stages of the entity. As the organization goes through its life stages, the historical narrative as a dynamic and complex record will naturally evolve and change as well. There may also be multiple narratives, both official and unofficial. An organization "follows a single sequence of stages or phases, which is cumulative (characteristics acquired in earlier stages are retained in later stages) and conjunctive (the stages are related such that they derive from a common underlying process)" (Van de Ven & Poole, 1995, p. 515).

Organizational records not only document the work of an organization, they tell the story of the community and its people, their successes and the issues that they believe to be important (Young, 2006). The life of an organization is based on past choices, choices being considered in the present, and choices to be made in the future. Choices made are borne out of options, both those adopted and those rejected. The history of the choices made influences all current activities, strategies for change or crisis, and future endeavors. It influences who becomes members of the organizational community. For the organization, an archival program's benefits for the association include: order and efficiency, daily operations, advertising, promotion, and

public relations, strategic planning, litigation, organizational pride, and social responsibility. Purposes and intentions of archive activities vary across the years, and address issues such as: When was the organization (or chapter) established? Who were the charter members? Who have been the presidents (or the award winners, or the committee chairs)? What programs or activities has the organization sponsored? (and When? and Who were the speakers?) When was the organizational directory first published?

Archives also assist in associations' decision making. They provide an impartial "organizational memory" to resolve legal or other disputes. They can facilitate accountability to members, parent organizations and regulatory bodies. They can also help avoid re-inventing the wheel and duplication of effort, thereby saving time, effort and money,

Less officially, archives assist in planning for organizational anniversaries or special events. They help instill pride in past accomplishments and inspire future improvements in part by identifying long term members, attracting volunteers, and soliciting contributors for recognition and measuring the organization's growth and development. An archival program can also benefit the community. Records created and saved by organizations can have educational and historical value when records are available for public use.

For organizing and filing, archives can utilize four different options: department or function (specific activities of group), subject or topic (to reflect work of the group), chronology, or combinations of the previous options. It is always a question of *what* should be kept. One approach is to defer what to when and use a record retention schedule, which leads to three stages, each with possible actions. Stage 1 is active use; Stage 2 is semi-active use; Stage 3 is final disposition (archived or discarded). Again, in terms of *what* to archive, records that provide the purposes, goals, decisions, programs, activities, policies, and fundamental values of the

organization are to be archived. Archival data should also answer key questions: Why and how

was the organization formed? What were the organizations' priorities? How and why did the

group's focus change over time? Who has provided guidance and leadership for the association?

What roles has the organization played in the community? What impact has the organization

made? What should be retained and for how long should these records be retained?

Other potentially informative and valuable documents to archive include: a charter or

articles of incorporation indicating when and by whom the organization was founded, a

constitution and bylaws telling its purpose and organizational structure, minutes of meetings

recording details of activities accomplished and issues dealt with, financial records including not

only details of income and expenses, but a sense of how the organization directed its efforts,

bulletins, newsletters, programs, and other publications announcing the organization's activities

and concerns, newspaper clippings, photographs sound or video recordings documenting

organization history, payroll records, building plans, or other information.

Across the recent decades individuals who serve as the historian(s) for a number of

literacy organizations have drawn upon their respective association's archives to obtain, and then

review, artifacts and historical documents as foundational data for writing organizational

histories (e.g. Agee, 2007; Alexander & Strode, 1999; Cook & Littlefair, 2014; Jerrolds, 1977;

Jerrolds, 1990; Lindemann, 2010; Stahl & Smith-Burke, 1999). In other cases, researchers have

drawn upon archives for literacy publications to undertake content analysis research. In these

cases, the research focused on articles about literacy theory, research, and praxis to determine

how archives shed light on the profession at large, as well as the missions and contributions of

the associations that sponsored the respective publications (e.g. Bauer & Kendall-Theado, 2014;

Brass & Burns, 2011; Dutro & Collins, 2011; Guzzetti, Anders, & Newman, 1999; McKenna &

Robinson, 1999; Pearson, 1992; Schumm, Lewis-Spector, Price, & Doorn, 2014; Stahl & Fisher, 1992; Still & Gordon, 2011). In following this track, we make use of the archives of the recently defunct History of Reading Special Interest Group (SIG) of the International Reading/Literacy Association to unearth, reclaim, and analyze the *History of Reading News*.

The History of Reading News

In 2015, the final issue of *The History of Reading News* (*HRN*) was published, marking the end of an era. The newsletter had been published since the spring of 1976, a year after the creation of The History of Reading SIG within the International Reading Association (IRA). E. Jennifer Monaghan, the founder of the SIG, started *HRN* as its first editor. Over the ensuing 40 years, *HRN* was a source of communication between members of the History of Reading SIG, who used it as a tool for their shared interests in historical research into literacy matters. Today, *HRN* now serves as a historical record, or an archive. More specifically, it is a historical record of reading historians doing history (Hartman, Stahl & King, 2017).

As an archive devoted to a single entity, *HRN* offers a particularly interesting area of inquiry, especially when viewed through the lens of Gray's (1991) three features of history as happening, as a record, and as a field of study. Gray's (1991) *happenings* in this case are/were the research and professional activities of a small group of scholars, all interested in historical approaches to inquiry in the field of literacy. But within the pages of *HRN*, the members of the former SIG actually looked into both the past and future of literacy. The individual issues of the newsletters, at the time they were written, were no more artifacts of the past than todays' shopping list or draft of a conference proposal. When they were published, the newsletters were communications about the doing of historical research in reading for an audience in their present.

Now that *HRN* is a completed set of documents, or a bounded textual context, we can more easily understand it as a proper archive. That is, the newsletter now exists as a historical record. It is an esoteric, yet important distinction. When *HRN* was a recurring publication, it certainly had influence, both archival and disciplinary information. As a publication devoted to historical content and practice in literacy, *HRN* made significant contributions. In addition, it also had a currency in that it would continue to appear as a living document. Now, the newsletter serves as a record of the SIG's efforts to promote historical research in reading and the shared practices of the members of the SIG. It also serves as a record for the changes in the context of the organization (IRA) and, more broadly, in the field of reading.

Finally, the newsletter offers insight into history as a field of study. Some of the members of the SIG were historians by trade (e.g. Jennifer E. Monaghan, Richard L. Venezky, Miriam Balmuth), whereas others were literacy researchers interested in, and using the methods of history. Their work as literacy historians tied them together in a particular community of practice, the History of Reading SIG. The ways of communicating, the shared historical practices, the descriptive, record-keeping goals, and the tensions embodied by those who champion a liminal research approach can be found in and inferred from the words in these newsletters.

It is, of course, inevitable that some wonder why historical research really matters. In terms of literacy, Stahl & Hartman (2011) have suggested that historical research in literacy may help establish a professional community in the field of reading "that is known, valued, and disseminated to the current and future generations of literacy specialists" (p. 218). Additionally, they argue that historical research in reading can provide insights into present problems through clearer understandings of the problems and solutions from the past. Both of these reasons are

intuitively valid, but perhaps an additional argument for historical research in literacy stems from the "practice turn" currently prominent in the field of literacy. Through a practice view, literacy is understood as an act that is embedded in social, cultural, and historical contexts (Gee, 2007; Street, 2012). Literacy, its practices and beliefs, cannot simply be transferred from one context to another; the practices and the contexts interact in particular ways. As a community of literacy researchers, we are engaged in literacy practices that have particular histories embedded in cultures and social interactions. In essence, to understand literacy requires an understanding of its history. As literacy historians contextualize the history of reading, they also capture particular ways of doing literacy, and shape the way literacy is done in the future. Today's literacy practices have roots that can be traced through the pages of *HRN*. These newsletters of reading historians looking into the past help tell us the story of our present and assist us in framing possible futures.

Methods

In this study, we used content analysis methods (Hoffman, Wilson, Martinez, & Sailors, 2011), particularly methods of historical content analysis (Stahl, Theriault, & Armstrong, 2016). Hoffman, et.al. (2011) describe content analysis as a "method of making inferences from texts and making sense of these interpretations in a context surrounding the text" (p. 30). Our analysis of *HRN* was informed by both the newsletters themselves and our understanding of the historical context in which it was written. A first question guiding our research was "How did the *History of Reading News* represent the History of Reading SIG?" Secondly, we asked "In what ways did the History of Reading SIG use the *HRN*?"

Data Sources

The data for this study consisted of 71 issues of *HRN*. The issues, which ranged from two to 12 pages (mean 6.6), were published twice each year, typically in the spring and fall. The newsletter was written on a typewriter until the winter of 1983-84 (Issue 7.1) and in early editions, the headlines were hand-drawn by artist Virginia Cantarella. Over time, the issues increased in length with typewritten and typeset issues averaging 4.2 and 7 pages respectively. The newsletter was included with membership in The History of Reading SIG, which cost $1 in 1976. By 2015, the dues had increased to $10.

A total of seven people contributed as editors or co-editors over the newsletter's 40-years of publication (Table 1). Their individual contributions ranged from as few as 5 to as many as 42 of the 71 issues. Generally, the editors collaborated as co-editors on the newsletter.

In full disclosure, we acknowledge that this research project helped to establish the set of *HRN* issues as an archive. Initially, Douglas Hartman located most of the issues using the Wayback digital archiving software. Norm and Jim saved each of the newsletter documents in Google Docs for access and for our current work on them.

Table 1

Editor/Co-editor	# of issues as editor/co-editor
E. Jennifer Monaghan	42
Joseph E. Zimmer	26
Luther B. Clegg	20
Arlene Barry	13
Bridget Cooke	8
Miriam Balmuth	5
Richard Robinson	5

*Issue 15.2 (1992) does not explicitly state the editor, however Jennifer Monaghan was a co-editor on the issues before and after 15.1.

Researcher positionality. The authors' different experiences and familiarity with The History of Reading SIG provided us with different perspectives as we approached the study. Sam was unfamiliar with many of the people and events in the newsletter, which gave the group

something of an outside perspective. Norm's and Jim's familiarity with the people and contexts allowed them to make inferences that an outsider might not be able to make.

Analysis. Data analysis took place in four phases, which spanned from the spring to the fall of 2017.

The initial phase of analysis involved a period of *steeping* (Zapata & Maloch, 2014) in the newsletters. Each of us had access to the newsletters and agreed to look through them before starting their formal discussions of analysis. Although we did not code the newsletters during the first phase, we wrote memos about what each of us noticed after looking across the newsletters.

The second phase involved creating codes through an inductive analysis of a sample of the newsletters. Sam randomly selected 10 issues (1.1, 9.2, 19.1, 19.2, 25.1, 26.2, 28.1, 33.1, 34.1, & 36.1). As he coded each of the issues, he refined and collapsed the codes, resulting in a total of 19 categories at the completion of the initial phase.

For the third phase, we divided the remaining 62 issues between the researchers who were not involved in phase 2. Norm and Jim used the categories generated by Sam in phase 2 to continue coding. During this phase, they also recorded the number of pages and the names of the editors who contributed to each issue.

In the process, the team encountered tensions regarding the criteria for some of the categories. In cases of disagreement, we discussed the categories in question to ensure clear criteria for inclusion. In order to resolve some disagreements, we had to revise the inclusion criteria until we were in agreement regarding the coding. During this phase, we also added an additional category, bringing the total number of categories to 20 (Table 2).

Table 2

Category	Description
1	Biographies
2	Auto-biographical accounts/ reflections
3	Book Reviews
4	Member News
5	News in the field
6	Items of Possible Interest to Members (books, workshops, resources)
7	IRA Conference News/ updates/ speakers
8	Award News and Information (winners/ how to apply/ updates)
9	Obituaries/ In Memoriam/ Dedications to recently deceased
10	Calls for more research; arguments for historical research
11	Membership information (general info/dues)
12	SIG News and Announcements (e.g. board changes)
13	Look ahead to next issue
14	Tips & Reflections on doing historical research
15	Requests for information
16	Other Organizations (e.g. SHARP)
17	Historical look at readers
18	History of IRA or organization
19	Misc. topics
20	Research Projects (ongoing, completed but not published)

In the final stage of analysis, we tabulated the number of times a category appeared in each issue and calculated totals for each of the categories (Table 3). In addition to noting the frequency of categories, we looked for patterns across categories and compared categories that were similar in nature. Finally, we looked for themes across the 20 categories that were not captured by the individual categories.

Table 3

Year	Edition	# pages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
1976	1.1	2					1	3	2			1	1	3	1								12
1976	1.2	3				1		6	2			1	2	3			1						16
1977	2.1	3						3	3		1		1										8
1977	2.2	4						1	3					4								1	9
1979	3.1	4						4	1				3	1								1	10
1980	4.1	4				2		2	6					2									12
1980	4.2	4							6				2				1	2					11
1981	5.1	6				2		2	2				1	1	1		1	1		1	1		13
1982	6.1	8				1		3	4				1	1			1	5					16
1983	7.1	4			4				1				1	2				1					9
1984	8.1	4						2	4				1	1				2			1		11
1985	8.2	4			3	1		1	2				3					4					14
1985	9.1	4						3	1				1	1		1		4					11
1986	9.2	4				1		2	2			1	1					1					8
1986	10.1	4			2	3		3		1	1		1	1			1						13
1987	10.2	4		1	1	2		6					2				1		1				14
1987	11.1	6			2	2		5				1	1	2									13
1988	11.2	6				2		3	1	1	1		3	4									15
1988	12.1	4		1				2	1	1	1		1	2				2					11
1989	12.2	6				1		2	1				1	1	2								8
1989	13.1	6		1	2	1		5	1				1	1				1					13
1990	13.2	4				1		1	1		1		1			1							6
1990	14.1	8		1	2	1		3	1				1	1			1						11
1991	15.1	8	1	1	1	1	2	1	1		1		1	1							1		12
1992	15.2	4				1		2	1				1										5
1992	16.1	6	1		2		1	4	1	1			1	1									12
1993	16.2	4			1	1		2	1				1										6
1993	17.1	6	1	1	1				2	1			1	2									9
1994	17.2	7		1	1	1		1	1	1				1									7
1994	18.1	6			2		1	2	1	2												2	10
1995	18.2	6				1		4	1	2		1										2	11
1995	19.1	8			2			2	1	1	4	1	1	1	1			1					15
1996	19.2	8		1	2	1		4	1		1		2					1					13
1996	20.1	6	1		3			3	1	1				1	1			1	2				14
1997	20.2	6				1		4	2					2									9
1997	21.1	8		1	4			2	1	1				1	1						1		12
1998	21.2	8	2		2	1	1	1	1													1	9

Year	Edition	# pages	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
																		Categories						Total
1998	22.1	10		1	4			1	1	1	1		1	1					1				12
1999	22.2	8			1	1		4		1	1			2									10
1999	23.1	8	1		3			1	2	2	1	1	1					2					14
2000	23.2	8	1	1		1		1			1			1									6
2000	24.1	8		1	4			1		1			3	1			1						12
2001	24.2	8		1	2	1		3	1	1				1									10
2001	25.1	8	1	1				2		1			1	2							1	2	11
2002	25.2	10		1	1	1			2		1	1		1			1		1				10
2002	26.1	10		1	2			1		1	1			2							1		9
2003	26.2	8		1	1	1							1									2	6
2003	27.1	10	1		2									1					2		1		7
2004	27.2	8	1			1						1									1		4
2004	28.1	8			1	1		4	1	3	2			2		1							15
2005	28.2	6				1			1										1			1	4
2005	29.1	6			2					1						1					1		5
2006	29.2	8			2			2	1									2	2				9
2006	30.1	6			2	1				1				2							1		7
2007	30.2	8		1		1		1	1	1				1					1				7
2007	31.1	8						1		1			1	1							1		5
2008	31.2	6			1			2	1				1	1					1				7
2008	32.1	12								1			1	1							2		5
2009	32.2	6				1		1	1								1		1		1		6
2009	33.1	8		1						1				1		1							4
2010	33.2	8			2	1		2	1													1	7
2010	34.1	12			2					2			1	3								2	10
2011	34.2	12		1	2	1		1	1	1													7
2011	35.1	12	1	1	3					1				1									7
2012	35.2	8		1	1				1														3
2012	36.1	6	1		1					1			1								1		5
2013	36.2	8	1		1									1									3
2013	37.1	4						1		1				1				1					4
2014	37.2	6	1							1		1		1									4
2014	38.1	4									2						1				1		4
2015	38.2	4	1								1			1							1		4
Totals:			**17**	**24**	**77**	**49**	**11**	**129**	**83**	**45**	**31**	**20**	**62**	**81**	**18**	**21**	**26**	**47**	**30**	**19**	**36**	**35**	**861**
Percentages			2.6%	3.7%	11.8%	7.5%	1.7%	19.8%	12.7%	6.9%	4.8%	3.1%	9.5%	12.4%	2.8%	3.2%	4.0%	7.2%	4.6%	2.9%	5.5%	5.4%	

Findings

Our analysis of the newsletters revealed the frequency at which each of the categories were coded. The highest frequency in coded categories were Category 6: *Items of Possible Interest to Members* (e.g., books, workshops, resources); Category 7: *IRA Conference News/ updates/ speakers;* Category 3: *Book Reviews;* and Category 12: *SIG News and Announcements* (e.g., board changes). These four categories alone made up over half (52.5%) of the 651 coding instances.

How do you construct importance in an archival deep dive? The first of two issues is the stability of the structure, or more explicitly, does the column or category of an Excel distribution recur? A second issue concerns the actors involved in producing *HRN*. Is there someone (an individual) who is committed to its appearance issue by issue? Does variation in the clarity or quality of writing matter in establishing the archivability of the different issues? Does *HRN* qualify as an archive according to standards established by the field of archival research and inquiry?

HRN and archival adequacy. In this analysis we were looking at the text traces of *HRN* for:

1. Functional adequacy – does the document provide the information for the conduct of daily business at the time of the publication?

2. Archival adequacy – does the information constitute an adequate representation as for the organization in a resuscitated use?

   i. How does ARF, or LRA, or ILA, and their respective archived documents, appear to researchers some 200 years in the future? Here were are

imagining future researchers who are learning about professional

organizations in immediate post-typographic literacies.

   ii. Does a selected example of *HRN* discourse create a sense of the

organization, its social, professional context? This is archival adequacy.

  iii. Level 1 – Is the set of documents still there? Are the archive data

accessible? Is the source text still being published?

  iv. Level 2 – What is the quality, the characteristics, of what has been saved?

      Digitized saving presents a paradox. If it is feasible to "save it all," then choice, agenda, intention may fail to exert their deliberative influences. After all, the limits of preservation and storage exert axiomatic selection influences. With only a limited amount of space, time, and money the archiving historian must choose what to save, and what to discard, and limited resources (space, time, and money) cause (influence) archivists to deploy importance as a strategy (higher level of cognitive processing). In contrast, limitless storage space, unlimited time, energy, and expertise require no (or less) selection, virtually reproducing the world. But where would this get us? One of the primary functions of archives is selectivity, or deciding what will be saved, as well as how what has been saved will be presented to subsequent readers, viewers, consumers, historians, and/or archives. So, too much resourcing may allow us to do less selective archiving, that is, not select. How does digitized representation undermine the need to archive? For *HRN* selectivity was not operating in the construction and preservation of its archive. Interestingly, the set of newsletters was not purposefully saved. Rather, the newsletters were retrieved from an automatic Internet archiving function, the Wayback Machine (thanks to Douglas Hartman for his timely assistance). In further speculation, the capacity to complete this project (from recovery, storage, and analysis) was fueled by the same digital affordances that

permit limitless storage and lack of selectivity. So perhaps, certainly in the case of *HRN* and perhaps for all digitized records, it is an interactive wash. That is, what we lose from lack of necessary selectivity, we gain in access.

Advocating for historical reading research. *HRN* is now a record of work that was completed to advocate for historical reading research by the History of Reading SIG, both through and around its publication. The purpose of the History of Reading SIG, according to its constitution, was to:

> encourage historical research in the field of reading and literacy, to provide a forum for
> the exchange of ideas and information about the history of reading and reading
> instruction, and to promote the development of a body of historical knowledge about
> reading and literacy. (Issue 11.2, p. 4)

In light of this expressed purpose, it might come as little surprise to find historical reading research being encouraged and promoted throughout the issues of the SIG's newsletter. In our analysis we found that throughout its 40 years of publication, *HRN* was frequently used to advocate for historical reading research and communicate its work toward that mission with its members. Advocating for historical reading research is most closely related to our coding Category 10: *Calls for More Research/Arguments for Historical Research*, though Category 10 was only explicitly coded 10 times (1.5% of the total coding instances). However, a broader theme of advocacy for historical reading research was apparent in other coding categories, including *News in the Field* (Category 5) and *IRA Conference Updates* (Category 7). *HRN* served as a medium through which historical research was promoted as well as a record of this advocacy work being done behind the scenes.

> ***HRN as a medium for advocacy.*** Oftentimes, *HRN* was used by the History of Reading SIG to promote historical research in reading. While it can sometimes be difficult to discern

between informing and promoting, there are clear instances of both. In some cases, the readers

were merely provided with information about upcoming events or invited to submit historical

research for presentation at conferences, but at other times the readers were *encouraged* to

submit papers and engage in historical research (Figure 1). In those cases, *HRN* became more

than a medium of communication. It became a tool that the History of Reading SIG could use to

advocate for historical research.

Figure 1

meeting. We feel that these papers
should be presented to the convention
at large. When the call comes, we
urge you to respond.

Issue 1.1, March 1976, p. 1

As many members as possible
should submit historical research pa-
pers for presentation at the 1977
IRA Convention at Miami Beach. The

Issue 1.2, September 1976, p. 1

We Need You to Sign Up to
Promote History!

Issue 20.2, Spring 1997, p. 6

Another way in which *HRN* acted as a tool to promote historical reading research was

through persuasive articles. Editors and invited authors periodically penned articles promoting

historical reading research, such as E. Garr Cranney's article "Why Study the History of

Reading?" (Spring 1989) or Jennifer Monaghan's defense of history in an "ahistorical America"

(Issue 12.2, p. 5). Although the articles were clearly arguments for historical research, the

specific purpose of the articles is somewhat more ambiguous. Were the articles intended to

persuade the readers of *HRN*, who were already members of the History of Reading SIG? Were

they intended to share ideas with SIG members who might use the arguments to advocate for

historical research with others? In spite of these unanswered questions, the articles represent a

way in which *HRN* served to promote the SIG's mission.

    HRN as a record of advocacy. In addition to being a tool for the promotion of historical

reading research, *HRN* also recorded the work the group did in advocating for historical research

from 1976 to 2015. For example, *HRN* reported efforts to promote the history of reading in

university doctoral programs and to write letters to the editors of IRA journals promote historical

literacy research (Figure 2).

Figure 2

2. A resolution calling for the IRA to encourage universities
to include the study of the history of reading in their doctoral
reading programs.

                                                        Issue 4.1, April 1980, p. 1

The executive committee of the Hisotry of Reading SIG was
encouraged to prepare letters to the editors of IRA journals
urging them to actively seek out articles dealing with history of
literacy.

                                                        Issue 20.2, Spring 1997, p. 1

    The pages of the *HRN* tell a story of an organization which was constantly fighting for a

seat at the table within the International Reading Association (IRA) (now International Literacy

Association). For example, in 2001, the IRA dropped "history" from the call for papers for the

next year's conference, drawing outrage from the History of Reading SIG and a response from

Joseph Zimmer, the SIG president. Zimmer's response was published in the Fall 2001 issue of

HRN and the following issue (Spring 2002) reported that IRA had changed its position. *HRN* was

not the tool by which the IRA board members were persuaded to reconsider their position, but the publication did preserve the work of SIG members in doing so.

HRN captured other successes and advancements, as well as setbacks in in their mission (Figure 3). These announcements were often in regard to the IRA annual conference or the organization's journals. On multiple occasions, *HRN* shared invitations from the editors of *Reading Research Quarterly (RRQ)* for historical reading research to submit history research to the journal. These invitations sometimes hinted at the important role of power in the organization's mission. For example, in spring 1986, after the incoming editors of *RRQ* invited historical research studies, *HRN* pointed out that some of the editors were members of the History of Reading SIG (Issue 9.2, p. 1).

Implications

Our analysis of *HRN* revealed it to be a multi-layered record of the History of Reading SIG. The newsletter included events shared across the organization as they happened, capturing the construction of narratives told within *HRN*. These narratives were selective, and by their very nature the interpretations of the authors who wrote them. At the same time, *HRN* represents the actual work of the organization. It can be interpreted, not only as a narrative constructed in the past, but as a tool being used to promote the SIG's goals. In short, *HRN* is a record of the work the SIG did and the narratives the members constructed.

Figure 3

A Victory

For the first time in the history
of IRA conventions, the Studies and
Research Committee will specifically
call for historical research papers
for the 1977 Convention in Miami.

Issue 1.1, March 1976, p. 1

IRA Passes History Resolution

Issue 5.1, Winter 1981-Spring 1982, p.1

HISTORY SIG MAKES INROADS AT IRA

Issue 21.2, Spring 1998, p.1, 8

IRA Rejects Symposium;
Blow to History SIG

Issue 2.2, December 1977, p. 1

Organization of American Historians Sets Reading Session,
But International Reading Association Rejects SIG Institute

Issue 8.2, Spring 1985, p. 4

References

Agee, K. (2007). A brief history of CRLA. Retrieved 3-23-18 from the College reading and

    Learning Association website: www.crla.net/index.php/membership/about-us

Alexander, J. E., & Strode, S. L. (1999). *History of the College Reading Association, 1958-1998*.

    Commerce, TX: Texas A&M University, Commerce.

Bauer, L., & Kendall Theado, C. (2014). Examining the "social turn" in postsecondary literacy

    research and instruction: A retrospective view of JCRL scholarship, 2005-2013. *Journal*

    of College Reading and Learning, 45(1), 67-84.

Brass, J., & Burns, L. D. (2011). Research in secondary English, 1912-2011: Historical

    continuities and discontinuities in the NCTE imprint. *Research in the Teaching of*

    English, 46(2), 171-186.

Brothman, R. (1992). Records acquisition strategy and its theoretical foundation: The case for a

    concept of archival hermeneutics. *Archivaria, 33,* 34-56.

Central New York Library Resources Council Documentary Heritage Committee. (1993).

    Documenting community organizations. Syracuse, NY: Central New York Library

    Resources Council. ERIC Retrieval Number: ED 359965

Cook, J. (2001). Archival science and postmodernism: New formulations for old concepts.

    Archival Science, 1, 3-24.

Cook, M., & Littlefair, A. (2014). *Fifty years of literacy education: A history of the United*

    Kingdom Literacy Association. Leicester, UK: UKLA.

Dutro, E., & Collins, K. (2011). A journey through nine decades of NCTE-published research in

    elementary literacy. *Research in the Teaching of English, 46*(2), 141-161.

Gee, J. P. (2007). *Social linguistics and literacies: Ideology in discourses*. New York, NY:

    Routledge.

Gray, W. (1991). Historian's handbook: *A key to the study and writing of history* (2nd ed.

    Reissued). Prospect Heights, IL: Waveland Press.

Guzzetti, B., Anders, P. L., & Neuman, S. (1999). Thirty years of JRB/JLR: A retrospective of

    reading/literacy research. *Journal of Literacy Research, 31*(1), 67-92.

Hartman, D. K., Stahl, N. A. & King, J. R. (2017). Making history a verb in literacy education.

    In N. A. Vines, & S. Botzakis (Eds.). *Annual Online Yearbook of the American Reading*

    Forum, Volume 37.

    http://americanreadingforum.org/yearbook/17_yearbook/volume17.htm

Heald, C. (1996). Is there room for archives in the postmodern world? *American Archivist, 59*,

    88-101.

Hoffman, J., Wilson, M.B., Martinez, R.A., & Sailors, M. (2011). Content analysis: The past,

    present, and future. In N.K. Duke & M. H. Marlette (Eds.), *Literacy research*

    methodologies 2nd Ed., (pp. 29-49). New York, NY: Guilford Press.

Jenkinson, H. (1992). *A manual for archival administration. Economic and social history of the*

    World War (British Series). Oxford, UK: The Clerendon Press.

Jerrolds, B. W. (1977). *Reading reflections: The history of the International Reading*

    Association. Newark, DE: IRA.

Jerrolds, B. W. (1990). History of the American Reading Forum. In K. Camperel & B. L. Hayes

    (Eds.), *Achieving Excellence in Reading: 10th American Reading Forum Online*

    Yearbook. Retrieved 1-9-2017 from ARF web site:

    http://www. Americanreadingforum.org/90_yearbook/pdf/21_Jerrolds.pdf

Lindemann, E. (2010) (Ed.). *Reading the past, writing the future: A century of American literacy education and the National Council of Teachers of English*. Urbana, IL: NCTE.

McKenna, M. C., & Robinson, R. D. (1999). The impact of *The Journal of Reading Behavior* on reading scholarship. *Journal of Literacy Research, 31*(1), 93-104.

MacNeil, H. (1994). Archival theory and practice: Between two paradigms. *Archivaria, 37*, 6-20.

Morgan, G. (1997). *Images of organizations,* 2nd ed. Thousand Oaks, CA: Sage.

Muller, S., Feith, J. & Fruen, R. (2003). *Manual for the arrangement and description of archives*. (Trans. A. Leavitt). Chicago, IL: The Society for American Archivists. (Original work 1898).

Pearson, P. D. (1992). *RT* remembrance: The second 20 years. *Reading Teacher, 45*, 378-385.

Ridener, J. (2009). *From polders to postmodernism: A concise history of archival theory.* Duluth, MN: Litwin Books.

Schellenberg, T. (2003). *Modern archives: Principles and techniques*. Chicago, IL: The Society for American Archivists. (Original work 1956).

Schumm, J. S., Lewis-Spector, J., Price, D., & Doorn, K. (2014). A content analysis of College Reading Association/Association of Literacy Educators and Researchers teacher education publications: Past, present, and future. *Literacy Research and Instruction, 53*(3), 225-244.

Schwartz, J. & Cook, T. (2002). Archives, records and power: The making of modern memory. *Archival Science, 2*, 1-19.

Stahl, N. A., & Fisher, P. J. L. (1992). *RT* remembrance: The first 20 years. *Reading Teacher, 45*, 370-376.

Stahl, N. A., & Hartman, D. K. (2011). Historical research. In N. K. Duke & M. H. Mallette (Eds.), *Literacy Research Methodologies*, (2nd Ed., pp.213-241). New York, NY: Guilford Press.

Stahl, N.A., & Smith-Burke, M.T. (1999). The National Reading Conference: The college and adult reading years. *Journal of Literacy Research, 31* (1), 47-66.

Stahl, N. A., Theriault, J. C., & Armstrong, S. L. (2016). Four decades of JDE interviews: A historical content analysis. *Journal of Developmental Education*, *40*(1), 4.

Still, K. L., & Gordon, J. P. (2011). Decades of ALER conference session presentations, 1960-2010. *Literacy Research and Instruction, 50*(4), 327-347.

Street, B. (2012). New literacy studies. *Language, ethnography, and education: Bridging new literacy studies and Bourdieu*, 27-49.

Van de Ven, A. H. & Poole, M. S. (1995). Explaining development and change in organization. *Academy of Management Review, 20,* 510-540.

Young, S. F. (2006). *Don't throw it away! Documenting and preserving organizational history.* Chicago, IL: University of Illinois, Chicago.

Zapata, A., & Maloch, B. (2014). Calling Ms. Frizzle: Sharing informational texts in the elementary classroom. *Journal of Children's Literature*, *40*(2), 26.

ESOL Students and Native English Speakers: Bridging the Gap in a Digital Collaborative
Classroom

Shalander Samuels

University of Central Florida

Abstract

The purpose of this paper is to present a review and evaluation on reading intervention programs for middle school students. The author will share an analysis of commonly used reading intervention programs for middle school readers and data from a needs assessment survey of intensive reading teachers and a literacy coach from a middle school in central Florida. Discussions will focus on (a) strengths, weaknesses and instructional (or curriculum) gaps; (b) implications for reading intervention program selection; (c) implications for teacher supports; and, (d) implications for literacy coaches.

Twenty-first century advancements have evolved with how literacy is defined as well as how it looks it the k-12 classroom. The purpose of this article is to discuss a study conducted to examine English Speakers of Other Languages (ESOL) in a state assessment, along with other formative assessments in the context of a digital collaborative seventh-grade English Language Arts (ELA) classroom. A digital classroom is one that supports student learning through an e-text curriculum, with technological online and offline experiences and synchronous and asynchronous opportunities to learn and engage with text. Today, many k-12 classrooms are engaging in collaborative learning experiences to make strides in student success. Laal and Laal (2012) describe *collaborative learning* as an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task or create a product. The researcher sought to explore how a digital collaborative classroom impacts ESOL students' and Native English Speakers' reading comprehension as reflected on the Florida State Assessment (FSA) scores. The researcher also explored how teacher and student interventions help bridge the gap in ESOL student achievement.

Theoretical Framework

Boyle and Peregoy (2005) noted that ESOL students' experiences are affected by policies, trends and reform efforts in schools. Ideally, the classroom experience should be one that allows for exposure to different backgrounds and enlightening encounters. These classrooms should be encouraging, should bring students together, and allow students to analyze ideas and create solutions to develop their deficient skills. The teacher's role is not simply for lecturing but for guiding and facilitating the learning of the students in formulating their own ideas. With the appropriate support, ESOL students will learn how to become critical thinkers. Leu, Kinzer, Coiro, Castek and Henry (2013) noted that technology has influenced literacy

instruction dramatically and technological advancements have affected our academic society.

Understanding technology means using digital tools to become a proficient reader and writer in

the 21st century (Alber, 2013). Twenty-first century readers have to be able to apply offline

reading skills, along with other cognitive skills, to be proficient in reading and to gain

comprehension in an online setting. The skills that are currently needed to understand online

texts are different than those that were required a decade ago (Roswell, Kress, Pahl, and Street,

2013). To guide the study, the researcher utilized multiple theories as support for the validity of

inquiry.

Socio-Cultural Theory

The Socio-Cultural theory induces the idea that learning and language are manifested

through social interactions (Vygotsky, 1986). With this idea of how individuals learn, insight is

gained as to an individual's concept and interpretation of the world. The focus of this study is

ESOL students' perceptions of the engagement opportunities, or lack thereof, each day in the

classroom. People learn by observing and interacting with the people and knowledge frequently

around them (Vygotsky, 1986). Vygotsky (1986) proposed that children's intellectual

development is shaped by how they acquire language. That language is what aids in creating the

communication between the child and other members of society (Mercer, 2007). The idea is that

the ESOL student sees a modeled behavior and then uses those examples to create their own

thinking and reasoning (Mercer, 2007).

Self-Efficacy Theory

Bandura (1997) introduced self-efficacy theory to justify one's perception of their own

abilities. Self-efficacy has been described as "an individual judgment of his or her capabilities to

perform given actions" (Schunk, 1991). This is an extension of a social-cognitive construct

theorized to impact motivation and the acquisition of academic knowledge. Over time

researchers have found that students with high levels of self-efficacy are more motivated and

more likely to succeed in academic endeavors (Pajares, 1997). Students who exhibit these

characteristics tend to be more persistent in their attempts toward success (Bandura, 1997a).

Culturally Responsive Teaching Theory

For years there has been research conducted to analyze and assess the characteristics that

make a good teacher in terms of those who are culturally subscribing to students (Freire, 2000;

Gay, 2000; Ladson-Billings, 1995). Culturally responsive teaching creates a model to prepare

students to "build up and fill in the holes that emerge when students began to use critical analysis

as they attempted to make sense of the curriculum" (Ladson-Billings, 2006, p. 32). According to

research (Gay, 2000; Bailey & Paisley, 2004; Ladson-Billings, 1995; Ladson-Billings, 2006)

characteristics of culturally response teachers include, but are not limited to, challenging students

to strive for excellence; validating their students' cultural identity in the classroom based on their

strategies and materials used; helping students cultivate a sense of political and social

consciousness. In addition, culturally responsive teachers acknowledge students' differences and

similarities, use valid assessment instruments to make judgments about students' abilities and

achievement, and educate their students about the diversity that exists in the world. These

teachers foster a culture of mutual respect and tolerance among students; they promote

progressive relationships among the student, family, their community and school. These teachers

encourage students to think critically as they learn. We have to consider how culturally

responsive teaching creates a platform for learning for the ESOL students.

Second Language Acquisition

Second Language Acquisition (SLA) is an academic field of inquiry with a focus on analyzing a person's ability to learn other languages, after they have developed their first language (Ortega, 2007). Ellis (1997) examines second/foreign language acquisition, and notes that this process is different for each individual. Each learner takes on different learning strategies, different learning styles, as well as different linguistic and motivational skills that are more comfortable for them. Chomsky (1965) states that human beings are born with the ability to acquire language from their immediate environment. Second Language Acquisition according to Collier (1995) is based on the following four components: Sociocultural process, language development, academic development and cognitive development. This Language Acquisition for school model shows these components are dependent upon one another and are the foundation for language acquisition. If one component is neglected the others will be negatively affected. Collier (1995) noted, "To assure cognitive and academic success in a second language, a student's first language system, oral and written, must be developed to a high cognitive level at least through elementary-school years" (p. 3). It is important to gain academic development by continuing learning in the child's first language. This literacy development, concept formation, subject knowledge, and learning strategies that are developed in the first language will guide each learner as they transfer knowledge to the second language (Collier, 1995).

Methods and Techniques

Through a pilot study that analyzed the seventh-grade ESOL and native English speaking students' FSA reading assessment scores from an ELA classroom, the researcher examined the impact of a digital classroom on ESOL students' reading achievement and grade level standards. The researcher later described the proposed interventions for the ESOL students and explained how technology can play a potential role in allowing ESOL student achievement. Lastly, the

researcher identified gaps in the process being proposed and implemented offered suggestions for curricular enhancements for both teachers and students.

For the purpose of this study, data sources included a detailed analysis of results from a pilot study along with self-reflections on instruction in a digital forum. The researcher analyzed FSA reading scores of ESOL students in addition to a data reflective tool from both the students and the teachers, as well as data collected from focus groups and teacher observations conducted throughout the study for thematic results. The digital tools and strategies being proposed and implemented were assessed for impact on ESOL student learning and achievement.

A three-pronged intervention was developed in the study to inform all teachers, (those with an ESOL endorsement and those without one) and administrators about the persisting problem between ESOL students and native English speakers and how to address it. The researcher developed a diagram to identify the constructs that were connected with the interventions being proposed. The interventions recommended were to be used synchronously. Each intervention provided the individual opportunity for scaffolding to occur. The study addressed the need of the students and the teachers in the middle school to create the opportunity for change and success not only for ESOL students, but for all learners.

Table 1 charts the Focus Group 1 questions (which are different from those of the second focus group) with the constructs used in the study. Table 1 also includes the exploratory questions to ensure that the ideas are connected and that they help to promote learning. The table represents how the theories played a role in the overall focus questions as well as the specific questions discussed in each focus group. Having a solid theoretical framework aids in supporting the reliability and validity of the study. Additionally, connecting with the exploratory questions ensures that an intentional emphasis was placed on the structure of the study being discussed.

Table 1. Exploring Construct Connections for Focus Group 1

Exploratory Questions	Focus Group Questions	Constructs (Theories)
In what ways does a collaborative learning environment increase the English Language understanding among ESOL students in the digital Language Arts classroom?	FG1. Do you have a daily plan to focus on the academic success of ESOL students?	Second Language Acquisition
	FG1. Have you encountered barriers in terms of acquiring the technology training you want/and need?	Self-Efficacy Theory
What collaborative learning strategies are more effective in helping ESOL students reach the same level of proficiency as native speakers?	FG1. Do your ESOL students let you know what they need to be academically successful in class?	Self-Efficacy Theory Situational Learning Theory Second Language Acquisition Theory
	FG1. Do you integrate technology? If so, how?	
	FG1. What do you think ESOL students need to be academically successful in the classroom?	
What specific collaborative learning strategies are more effective in a classroom that has access to digital learning?	FG1. Do you feel prepared to teach ESOL students?	Culturally Responsive Theory Self-Efficacy Theory
	FG1. How prepared are you to teach in a multicultural classroom? Do you integrate multicultural content in your lessons? Why or why not?	
	FG1. What additional resources do you think you need to be more successful with your ESOL students?	Second Language Acquisition

	FG1. How often is technology staff development offered at your school and/or in the district and who is responsible for conducting this training?	
How does the student-centered learning environment aid in bridging the performance gap between ESOL students and native English speakers?	FG1. Do you know what resources are available to you to assist ESOL students? How do you use them?	Socio-cultural Learning Theory
	FG1. What has been the most beneficial technology workshop you have attended and why?	Situational Learning Theory

Table 2 charts the Focus Group 2 questions (which are different from those of the first focus group) with the constructs used in the study as well as the exploratory question to ensure that the ideas are connected and that the ideas help to promote learning. This chart represents how the theories played a role in the overall focus questions and the specific questions discussed in each focus group.

Table 2. Exploring Constructs Connection for Focus Group 2

Exploratory Questions	Focus Group Questions	Constructs (Theories)
In what ways does a collaborative learning environment increase the English Language understanding among ESOL	In what ways does a collaborative learning environment increase the English Language understanding among ESOL	Second Language Acquisition

students in the digital Language Arts classroom?	students in the digital Language Arts classroom?	
	What does a collaborative learning environment look like in your classroom?	Socio-cultural theory
What collaborative learning strategies are more effective in helping ESOL students reach the same level of proficiency as native speakers?	What specific collaborative learning strategies are more effective in a classroom that has access to digital learning?	Situational Learning Theory
What specific collaborative learning strategies are more effective in a classroom that has access to digital learning?	Does the student centered learning environment aid in bridging the performance gap between ESOL students and native English speakers?	Self-Efficacy Theory
How does the student-centered learning environment aid in bridging the performance gap between ESOL students and native English speakers?	What collaborative learning strategies are more effective in helping ESOL students reach the same level of proficiency as native speakers?	Culturally Responsive Theory

The framework provided in this research creates the opportunity for ESOL students to be challenged and achieve academically. The framework also creates the opportunity for students to be given appropriate resources necessary in a digital collaborative learning environment. This framework also promotes teacher preparedness. It creates the opportunity for the teachers who

engage with ESOL students to be prepared and feel confident with accommodating ESOL

students' needs. To be successful, teachers have to scaffold instruction appropriately for all

students to gain confidence in their knowledge and to succeed with that knowledge (Walqui,

2006). Appropriate scaffolding along with differentiated instruction will yield more favorable

academic results. The overall intent is to increase knowledge of both the teachers and the

students to narrow the gap between the ESOL students and their native English speaking

counterparts (Van Garderen & Whittaker, 2006).

Conclusions

Romber, Carpenter and Dremock (2005) noted that unless persistent interventions are in

place to assist ESOL students, a vast gap will continue to exist. The pilot study area of this

research was significant because it revealed not only the teacher perception of their own

knowledge and skills, but also the student perceptions of their current learning situation.

Throughout this process, the pilot revealed that the teachers had varying levels of self-efficacy.

Some believed they were equipped, others reflected and found they needed additional resources

to positively impact student learning. Some of the tools they needed would require ongoing

opportunities to gain an understanding of their ESOL students, as well as gradual release of

information, modeling and opportunities to collaborate with teacher peers for best results.

Consequently, a professional development framework was proposed to remedy those

needs. Tellez and Waxman (2006) explain that professional development, if implemented

correctly, can provide teachers with the skills necessary to successfully aid students. The

researcher proposed a specific teacher professional development. Another intervention proposed

was the student technology course Middlde School Technology Transition course (MST[2)], which

was intended to slowly assimilate the incoming students (ESOL and native English speakers)

into the digital classroom platform. As the researcher approached the study, the intent was to

focus on the interventions (the online PD and MST^2) equally. However, throughout the focus

group the focus shifted more to the PD. The discussions held throughout the study gave the

teachers the voice they needed to share their struggles. Many found they needed guidance to

affect positive change for their ESOL students. Moving forward in the focus groups, the

teachers then chose to focus on their own self-reflections and address their needs in effectively

accommodating ESOL students. Thus, there was more focus moving forward on the online

teacher PD.

The interventions mentioned above would have the most positive result if they were to be

implemented simultaneously. They would have more potential to heighten knowledge for both

the teacher and the students, creating a link to ESOL students' higher achievement and the

opportunity to close the achievement gap between ESOL and native English speaking students.

There were limitations that needed to be addressed in this study. Firstly, the time of the

study was during the district FSA testing season. This could have impacted the attendance of

teacher participants as it was a busy time and many participants felt the need to additionally

prepare for their week resulting in not being able to attend the focus group sessions. Moreover,

there is the need to consider that towards the end of the school year many teachers have

explained they often feel fatigued or tired depending on how their academic year has progressed.

Another element to consider would be the length of the study. To solidify a more definitive

study, a possible extended study process could produce solid results and even the opportunity to

implement the interventions and assess for overall outcome. A longer study would allow for

more participants, more data and more artifacts to assess as well as more student feedback to

guide the impact of the interventions.

Educational Importance

Studying ESOL students and assessing the differences in their performances compared to their English speaking counterparts has not been a recent phenomenon. This idea, though, is being expounded upon because new elements such as how this affects students working in a collaborative setting or how this affects the students working in a digital space are being added. There are many implications to be addressed including the idea that different comprehension, predicting, and inferencing skills are required when compared to the use of a traditional text in the classroom (Coiro & Dobler, 2007). In order for the ESOL students to be successful they need to have resources to help them merge smoothly into the digital environment; hence, the need for the technology course MST^2. The potential of the course is to help the students to build on their knowledge and skills, as they are given the opportunity to enhance their self-efficacy.

The educational importance of this study is that schools can begin analyzing whether or not the curriculum and tools that they are using are effective in addressing the needs of all students including ESOL students. The Urban Institute notes that immigration is quickly changing the demographics of academia in the U.S, and school districts are being held accountable for the academic achievement of English Learners (Capps, 2005). English Learners as a population is the fastest growing group of students in U.S. schools with an enrollment increase of over 150% since 1990. A report noted that ESOL students in the United States will soon represent one third of all students in the classroom (NCELA, 2015). Therefore, this research will address the gap in achievement between ESOL students and native English speakers through the lens of the digital curriculum used at this school. Results may allow for modifications made regarding strategies and supports needed for ESOL students in the ELA digital collaborative learning classroom.

References

Alber, R. (2013, January 21). Deeper learning: Defining twenty-first century literacy. Retrieved

http://www.edutopia.org/blog/twenty-first-century-literacy-deeper-learning-rebecca-alber

Bandura, A. (1997). *Self-efficacy*: The exercise of control. New York: W.H. Freeman.

Boyle, O., & Peregoy, S. F. (2005). *Reading, writing, and learning in ESL: A resource book for K-12 teachers.* Boston, MA: Pearson/Allyn and Bacon.

Capps, R. (2005) *The new demography of America's schools, immigration, and the No Child Left Behind Act.* Washington, DC: Urban Institute.

Chomsky, N. (1965). Aspects of a theory of syntax. *Cambridge, Mass.: MI'I'. I'rw Language Journal*, *53*, 334-341.

Collier, V. P. (1995). Acquiring a Second Language for School. *Directions in language and education*, *1*(4), n4.

Ellis, R. (1994). The Study of Second Language Acquisition. Oxford Oxfordshire: Oxford University

Press.

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of teacher education*, 53(2), 106-116.

Gay, G. (2010). *Culturally responsive teaching: Theory, research, and practice*. Teachers College Press.

Laal, M., & Laal, M. (2012). Collaborative learning: what is it? *Procedia-Social and Behavioral Sciences*, *31*, 491-495.

Ladson-Billings, G. (1995). Toward a Theory of Culturally Relevant Pedagogy American Educational Research Journal, 32(3), 465-491.

Ladson-Billings, G. (2006). From the achievement gap to the education debt: Understanding

    achievement in US schools. Educational researcher, 35(7), 3-12.

Leu, D.J., Kinzer, C.K., Coiro, J.L., Castek, J., & Henry, L.A. (2013). New Literacies: A dual-

    level theory of the changing nature of literacy, instruction, and assessment. In D.E.

    Alverman, N.J. Unrau, & R.B.Ruddell (Eds.), *Theoretical Models and Processes of*

    Reading (6th ed., 1150-1181). Newark, DE: International Reading Association.

Mercer, N. (2008). Talk and the Development of Reasoning and Understanding. *Human*

    Development, 51(1), 90-100.

National Clearinghouse for English Language Acquisition. (2015). *Sources for English Learner*

    (EL) Data. Retrieved from www.ncela.us/sources-english-learner-el-data

Ortega, L. (2007). Second language learning explained? SLA across nine contemporary. In

    VanPatten, B., & Williams, J. Theories in Second Language Acquisition: An

    Introduction. Mahwah, NJ: Lawrence Erlbaum.

Pajares, F (1997). Current directions in self-efficacy research. In M.Maehr & P.R. Pintrich

(Eds.)

    Advances in motivation and achievement (Vol. 10, pp. 1-49). Greenwich, CT: JAI

Roswell, J., Kress, G., Pahl, K., & Street, B. (2013). The social practice of multimodal reading:

    A new literacy studies-multimodal perspective on reading. In D.E. Alverman, N.J.Unrau,

    & R.B. Ruddell (Eds.) *Theoretical Models and Processes of Reading* (6th ed., 1150-

    1181). Newark, DE: International Reading Association.

Schunk, D.H (1991). Self-efficacy and academic motivation. *Educational psychologist*, 26(3-4),

    207-231.

Van Garderen, D., & Whittaker, C. (2006). Planning differentiated, multicultural instruction for

      secondary inclusive classrooms. Teaching Exceptional Children, 38(3), 12-21.

Vygotsky, L. (1986). *Thought and language*. Cambridge, MA: The MIT Press.

Walqui, A. (2006). Scaffolding instruction for English language learners: A conceptual

      framework. *International Journal of Bilingual Education and Bilingualism*, *9*(2), 159-

      180.

Preservice Teachers Explore Informational Text Structures

Michelle R. Ciminelli, Ph.D.

Niagara University

Abstract

This article describes how preservice teachers gained knowledge about informational text structure. Following a model designed by Reutzel, Jones, Clark and Kumar (2016), a variety of activities were used to engage preservice teachers in learning about text structure. Quantitative and qualitative measures were used to determine growth. After a seven-step process, participants' knowledge of and ability to identify informational text structure increased significantly. Additionally, data revealed increased confidence in understanding about text structure.

Introduction

With recent changes to the Common Core State Standards, there is an increased emphasis on comprehension of non-fiction text (CCSS, 2010). This has resulted in a surge in the presence and use of informational texts in the elementary schools, especially compared to Duke's (2000) findings from nearly two decades ago. Without a doubt, it is essential that adults and children have the ability to understand material presented in informational texts.   However, many students, particularly minorities and low-income, struggle to comprehend and learn from informational texts (National Assessment of Educational Progress, 2011).

Many non-fiction texts consist of one of several structures, including cause/effect, descriptive, compare/contrast, problem/solution, and sequence. Researchers have found that comprehension of such texts is aided by understanding the text structures and learning about text features (Duke, Pearson, Strachan, & Billman, 2011). Training in the use of identifying structure of text resulted in an increase in information recalled as well as the type and organization of information with adult participants (Meyer & Poon, 2001). Similar results were found with middle school students (Armbruster, Anderson, and Ostertag, 1987) and elementary students (Williams, Stafford, Lauer, Hall & Pollini, 2009).   Furthermore, Pressley and McCormick (1995) posit that using and analyzing text structure is one of the top strategies for promoting comprehension and memory of text.

For students to benefit from this potential to increase comprehension of informational text, they must be explicitly taught about text structure. There are strong theoretical reasons that support a relationship between teacher knowledge and the ability to teach content (Cunningham, Perry, Stanovich & Stanovich, 2004). Therefore, it can be presumed that if teachers know that teaching text structure can improve student comprehension of expository text, then teachers would spend time in their classrooms with explicit text structure instruction. However, minimal attention is given to teaching informational text structures (Donaldson, 2011). This may be due in part to teachers being uncertain about teaching informational text structure or even being able to accurately identify text structure themselves (Meyer, Wijekumar, Middlemiss, Higley, Lei, Meier, & Spielvogel, 2010).

Very little research exists that explores teachers' knowledge of text structure, let alone how to enhance this knowledge. Most recently, Reutzel, Jones, Clark and Kumar (2016) examined teacher knowledge about text structure and developed a professional development training module to assist teachers with identifying informational text structures in children's informational texts. The training included using an instrument developed by the authors: The Informational Text Structure Survey (ITS^2). The authors reported that prior to training with the ITS^2, primary grade teachers demonstrated low ability to accurately identify text structures in children's informational texts. However, teachers showed significant improvements in their ability to identify informational text structures after training with the ITS^2 instrument. Therefore, teacher knowledge about text structure can be increased through training.

The work of Reutzel and colleagues (2016) focused on in-service teachers in the primary grades. It can be supposed that if practicing teachers demonstrate a lack of knowledge about text structures, the same is likely true of preservice teachers. Similarly, a review of current research

indicated a gap in understanding preservice teachers' knowledge about text structure. As preservice teachers, it is essential to first be able to identify and understand various text structures themselves before they can teach their future students. The current study was designed as a response to Reutzel and colleagues' (2016) call for "attention to teacher preparation programs" (p. 93) and to add to our body of knowledge in this field. This study was planned following many of the principles in the Reutzel, et al. (2016) study, with the major exception being the population of participants. While it is not an exact replication study, much of the methodology is similar, as will be described subsequently.

The goals for this study were to determine the status of preservice teachers' knowledge about informational text structures, and to implement a series of activities to increase this knowledge. Therefore, the following research questions guided the study:

1) What do preservice teachers know about informational text structures?

2) What are the results of a series of active learning tasks related to text structure on preservice teachers' knowledge and ability to identify informational text structures?

Methodology

The nature of this study and research questions demanded an approach that incorporates both qualitative and quantitative measures (Creswell, 2002). Qualitative data were collected during the first step of the study when participants were presented with an open-ended questionnaire related to informational text. This data informed the first research question associated with preservice teachers' initial knowledge of text structures. Participants' comments and discussions throughout the study also served as qualitative data to inform the second research question regarding participants' learning. Quantitative data were collected regarding the accuracy of text structure identification.

Informational Text Structures

For the purpose of this study, the focus of the text structures of informational text included the following: cause/effect, descriptive, compare/contrast, problem/solution, and sequence. These are the most common text structures used by other researchers when exploring text structure with students (e.g. Meyer, et al., 2010; Reutzel et al., 2016).

Participants

The participants in this study were 37 undergraduate students: one male and 36 females. Twenty-one were enrolled in a birth through grade six teacher education program, and sixteen were in a grades 1-6 Special Education program in a private university in the eastern United States. The study was conducted within two sections of a required Language Arts Birth – Grade 6 course. There were twenty students in one section and seventeen in another. All participants were in an initial teacher certification program. Participants were in their third year of their program, and were currently participating in a 20-hour field placement within their certification level. Each preservice teacher had completed a minimum of 80 field hours to date.

Data Collection and Analysis

Open-ended questions were gathered as a first step to the study. The questionnaire (see Appendix A) was distributed in person, and students anonymously completed the form in class and handed it in to the researcher when complete. Students spent between eight and twelve minutes on the questionnaire. Throughout the study, comments that participants made related to understandings of text structure were written down by the researcher. Additionally, the researcher recorded notes and observations during the study. Responses to the questionnaire and researcher notes were transcribed, and data were analyzed using open and axial coding (Strauss & Corbin, 1990). Initial coding included fiction and non-fiction, unknown (question marks or no

answer), and science fiction, poetry, mystery, romance, autobiography. Subsequent coding

revealed a macro level of understanding differences between fiction and non-fiction, superficial

understanding of text structures, and frustrations with the questions.

Prior to the study, a collection of 57 children's books was secured. The researcher and

two graduate students independently categorized each book as fiction or non-fiction, and if non-

fiction, indicated the text structure(s). There was 96.7% interrater reliability. A discussion took

place to determine discrepancies, and agreement was arrived at to conclusively categorize the

texts with contradictions. Examples of the books and their categorization are shown in Appendix

B.

The pre- and post-activities (steps two and seven) served as quantitative data to measure

accuracy of identifying text structure, which was indicative of students' pre- and post-

knowledge. It is important to note that not all texts adhere to just one structure. Since it is

common for a text to have representations of a combination of structures, if the participant

indicated at least one of the text structures, then the response was coded as correct. A

comparison of data was conducted to determine if learning occurred.

Procedures

As noted above, following a model designed by Reutzel, Jones, Clark and Kumar (2016),

a variety of activities were used to engage preservice teachers in their learning about text

structure. The study consisted of seven steps and was conducted over the course of two weeks of

instructional time, during four sessions. Step one was administered at the end of class during

the first session. In the next class meeting, step two was administered. Steps three through five

occurred during the third class session, and steps six and seven during the final session of the

study.

A detailed description of the steps of the project follows.

1. **Questionnaire.** Participants responded to three open-ended questions related to text structure (see Appendix A). This questionnaire served two purposes. First, it provided baseline data on participants' knowledge of text structures. Second, it exposed participants to vocabulary related to text structure, and potentially piqued interest in the topic. Participants completed the task in class and submitted it anonymously. Results were reviewed prior to administering the next step.

2. **Initial Book Sorting**. Participants were presented with 25 children's books. Ten were fiction and fifteen were non-fiction. They were asked to identify whether each text was fiction or non-fiction; if non-fiction, they were asked to identify the particular structure of the text. The terms of *cause/effect, descriptive, compare/contrast, problem/solution,* and *sequence* were provided to participants for use during this step. Participants worked individually to complete this task, anonymously recording their answers on a blank chart similar to that in Appendix B. Charts were collected and responses were scored as correct or incorrect. This was used as a pre-assessment to determine participants' ability to accurately and reliably sort text types and structures found in children's texts.

3. **Explicit Instruction**. Each of the major types of text structure (cause/effect, descriptive, compare/contrast, problem/solution, and sequence) was explicitly taught by the researcher by showing an example of a children's book that followed that structure. Key words that indicated a particular structure were identified (as shown in Table 1). Additionally, a graphic organizer that could be used with such structure was shown to the class, and a hard copy was given to each participant (see Appendix C).

Table 1. Key words indicative of particular text structures

Text Structure	Key Words
Cause/ Effect	as a result, therefore, because, since, before, may be due to, consequently, this led to, if…then
Descriptive	for example, for instance, such as, most important, to illustrate
Compare/Contrast	compared to, similarly, as opposed to, different from, as well as, on the other hand, instead of
Problem/Solution	the problem, a solution, the question is, an answer is, who, what, where, when, why
Sequence	first, second, next, finally, initially, before, after, then

4. **The ITS² chart**. An adaptation of the Informational Text Structure Survey (ITS²)

   developed by Reutzel et al. (2016) (see Appendix D) was explored with students by

   reviewing the text structures and making connections with various reading materials. It

   should be noted that the flow chart side of the form was not used for the purposes of this

   study, as participants were not analyzing "children's informational texts to determine

   their appropriateness for use in text structure instruction in Grades 1-3" (Reutzel et al.,

   2016, p. 95). Rather, only the second side of the ITS² was exposed to participants as a

   support to review the elements of informational texts. The children's non-fiction books

from step two were provided to the participants during this step so they could search books to locate these elements as various features were discussed.

5. **Collaborative Book Categorization**. Participants were grouped with one or two other peers. Each group was given three previously unseen informational texts and asked to collaboratively determine the text structure based on information learned in the previous two steps. Books were rotated among groups until each group examined all books. Participants were given instructions for step six, so they were prepared for the final session of the study.

6. **Peer Teaching.** Participants were paired up. They were to secure a children's informational text to bring to class. Participants located the books from their personal collection, the campus library, or the college Literacy Center. Participants taught each other about the text structures in their selected book. Particular attention was to be given to the key words and features of the text that indicated categorizing it as having a particular text structure. Additionally, each participant located and shared an appropriate graphic organizer that could be used with the book.

7. **Individual Book Categorization**. As a post-assessment, participants were presented with another book categorizing task with previously unseen children's informational books. They were given 15 non-fiction texts and asked to identify the particular structure of the text on a blank chart. Charts were submitted anonymously and scored as correct or incorrect.

Findings

Regarding the first research question, data revealed that preservice teachers were not familiar with text structures as indicated on their responses to the questionnaire and their

performance on the initial book sorting activity. On the open-ended questionnaire, all participants listed *fiction* and *non-fiction* in response to text types they could think of, indicating they had an understanding of the two main forms of text types. However, additional answers to this question included *plays, poems, newspaper, picture books, chapter books, graphic novels,* and *magazines*, which indicated confusion between text types and text genres.

Regarding the question related to text structures, only one person listed a response close to accurate: *cause and effect* and *problem/solution*. Four other individuals responded, but their answers indicated inaccurate understanding of text structures. For example, one student wrote, "prose, novel, short story, newspaper column," while another listed "poem, novel, picture book?" Another participant listed "analytic, narrative, Marxism" and the final respondent wrote, "simple one sentence." The majority of participants did not respond at all to this question, leaving the section of the paper blank. There were several who wrote question marks on the questionnaire, while others expressed written frustration by stating, "No idea!", "Not sure ☹", "I don't know what that means!" and "Does not make sense." One individual wrote, "This does not even make sense to me right now!"

Regarding text genres, participants' responses indicated a general understanding. Each participant listed at least one answer, with an average of four responses across all participants. The most common answers were *science fiction, romance, comedy, mystery,* and *autobiography*. In summary, the responses to the questionnaire indicated participants' understanding of text types and text genres, but a lack of clarity about text structures.

Results of the initial sorting task supported the evidence from the qualitative data about preservice teachers' knowledge of text types and structures. Participants were able to identify

whether a book was fiction or non-fiction with 97% accuracy. However, ability to identify text structure of non-fiction books was 67% accurate during the first sorting task.

Informal observations during steps one and two also supported the lack of understanding regarding text structures. While completing the survey, one individual sighed loudly and grumbled, "What is this even talking about? How are we supposed to know this stuff? I've never even heard this before!" Another stated, "Good thing we're not getting graded on this!" Participants were seen looking around the room at each other and shrugging their shoulders, indicating they did not know how to respond to the questions on the survey. During the book sorting, participants were animated as they discussed options for categorizing the books, but the accuracy of the task was low, as noted above.

As steps three through six were implemented, participants' comments revealed a growing understanding of text structures. The same individual who had displayed signs of frustration while completing the questionnaire became visibly excited while examining the ITS[2] chart and a non-fiction text. She exclaimed, "Oh! This makes so much sense now! Why didn't I see that before? This is really kinda easy!" Another stated, "This is so easy when you know what you are looking for." Several others nodded in agreement as another participant said, "I get it now!"

The final step in the study required preservice teachers to participate in another individual book categorizing task. Results revealed 100% accuracy in identifying text structure of non-fiction books. Participants conveyed confidence during this task, which was a dramatic contrast from the atmosphere during the first two steps of the study.

Discussion

The results from the open-ended questionnaire, initial sorting task, and informal observations revealed that preservice teachers had considerable lack of knowledge about text

structures prior to engaging in the active learning steps. These results are consistent with Reutzel

and colleagues' (2016) findings about primary grade teachers' understandings of text-related

concepts. While participants did appear to have a distinct understanding about the terms *text*

types and *text genres*, the same could not be said for the term *text structures*. If these results

were due just to a lack of understanding the terminology, then better results would have been

expected on the initial book sorting task. Since participants performed poorly on this sorting

task, it can be assumed that they were unfamiliar with the actual text structures rather than just

the terminology. The lack of knowledge exhibited by preservice teachers may be attributed to

lack of instruction about informational text features in their K-12 experiences, consistent with

findings by Donaldson (2011) and Meyer, et al. (2010).

The increase from 67% to 100% accuracy in identifying text structures following

intervention steps indicated that preservice teachers are capable of learning about text structures

with deliberate and explicit direction. While this gain in knowledge was exhibited in the

classroom during the time of the study, it is unknown if this understanding will be sustained or

transferred to the future classrooms of these preservice teachers. Will these participants

remember text structures and text features? Will they be able to determine the text structures of

informational books used in their classroom? Will they explicitly teach text structures to their

students? Further research in this area is still needed.   Fortunately, preservice teachers often

expect to gain direct knowledge of teaching strategies that can be applied to their future

classrooms during their teacher education programs (Sjolie, 2014). Perhaps this will be an

example of knowledge that they will apply, giving their students the opportunity to learn and

comprehend information more readily from informational texts used in the classroom.

While it was not a goal of this study, it can be presumed that preservice teachers could be instructed in how to use the ITS[2] instrument as intended by Reutzel and colleagues (2016). This tool would allow them to evaluate and select well-structured informational texts to use when teaching their students about text structures.

Conclusion

Many teacher educators would agree with Johnston and Goettsch (2000) that our teachers need to know about content in order to teach it. The process presented here may be used as a model for teacher educators to promote understanding of text structure with their preservice teachers. This may ultimately provide preservice teachers with the knowledge and tools necessary to teach their future students about such concepts, which in turn will aid in comprehension. As noted by Afflerback, Pearson and Paris (2008), explicit instruction of skills and strategies can assist children in the complex task of learning to read. Once preservice teachers know about text structure, they will be equipped to explicitly teach this to their future students as one tool to use in this lifelong process.

References

Afflerback, P., Pearson, P.D., & Paris, S. (2008). Clarifying differences between reading skills and reading strategies. *The Reading Teacher, 61*(5), 364-373.

Armbruster, B. B., Anderson, T. H., & Ostertag, J. (1987). Does text structure/summarization instruction facilitate learning from expository text? *Reading Research Quarterly, 22*, 331-346.

Common Core State Standards Initiative (2010). Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects. Washington, DC: CCSSO & National Governors Association.

Creswell, J. W. (2002). *Educational research: Planning, conducting and evaluating quantitative and qualitative research.* Upper Saddle River, NJ: Pearson Education.

Cunningham, A. E., Perry, K. E., Stanovich, K. E., & Stanovich, P. J. (2004). Disciplinary knowledge of K-3 teachers and their knowledge calibration in the domain of early literacy. *Annals of Dyslexia, 54*, 139–167.

Donaldson, R. S. (2011). What classroom observations reveal about primary grade reading comprehension instruction within high poverty schools participating in the federal reading first initiative (Utah State University). *ProQuest Dissertations and Theses.*

Duke, N. (2000). 3.6 minutes per day: The scarcity of informational texts in first grade. *Reading Research Quarterly, 35*(2), 202-224.

Duke, N. K., Pearson, P. D., Strachan, S. L., & Billman, A. K. (2011). Essential elements of fostering and teaching reading comprehension. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed., pp. 51–93). Newark, NJ: International Reading Association.

Johnston, B. & Goettsch, K. (2000). In search of the knowledge base of language teaching:

      Explanations by experienced teachers. *The Canadian Modern Language Review, 56*(3),

      437-468.

Meyer, B. J. F., & Poon, L. W. (2001). Effects of structure strategy training and signaling on

      recall of text. *Journal of Educational Psychology, 93*(1), 141-159.

Meyer, B. J. F., Wijekumar, K., Middlemiss, W., Higley, K., Lei, P., Meier,C., & Spielvogel, J.

      (2010). Web-based tutoring of the structure strategy with or without elaborated feedback

      or choice for fifth- and seventhgrade readers. *Reading Research Quarterly, 45*, 62–92.

Pressley, M., & McCormick, C. B. (1995). *Advanced educational psychology for educators,*

      researchers, and policymakers. New York: Harper Collins.

Reutzel, D. R., Jones, C. D., Clark, S. K., & Kumar, T. (2016). The Informational Text Structure

      Survey (ITS[2]): An exploration of primary grade teachers' sensitivity to text structure in

      young children's informational texts. *The Journal of Educational Research, 109*(1), 81-

      98.

Sjølie E. (2014). The role of theory in teacher education: reconsidered from a student teacher

      perspective. *Journal of Curriculum Studies, 46*, 729-750.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures*

      and techniques. Newbury Park, CA: Sage.

Williams, J. P., Stafford, K. B., Lauer, K. D., Hall, K. M., & Pollini, S. (2009). Embedding

      reading comprehension training in content-area instruction. *Journal of Educational*

      Psychology, 101(1), 1-20.

Appendix A

Open-Ended Questionnaire about Texts

1. List all of the text types you can think of.

2. List all of the text structures you can think of.

3. List all of the text genres you can think of.

Appendix B

Sample of Children's Books and Categorizations

Author	Title	Fiction?	Non-Fiction?	Text Structure?
Aliki	Milk from Cow to Carton		X	Order and Sequence
Batten, M.	Aliens from Earth: When Animals and Plants Invade Other Ecosystems		X	Cause and Effect
Carney, E.	Cats vs. Dogs		X	Compare and Contrast
Daronco, M. & Presti, L.	Measuring Tools		X	Description Compare and Contrast
Falconer, I.	Olivia	X		
Fowler, A.	Energy from the Sun		X	Cause and Effect Description
Ga'g, W.	Millions of Cats	X		
Gibbons, G.	The Honey Makers		X	Description
Sill, C.	About Reptiles: A Guide for Children		X	Description
Stewart, M.	A Place for Butterflies		X	Problem and Solution
Thomson, B.	Fossil		X	Problem and Solution

Appendix C

Graphic Organizers for Use with Various Text Structures

different   Similar   different
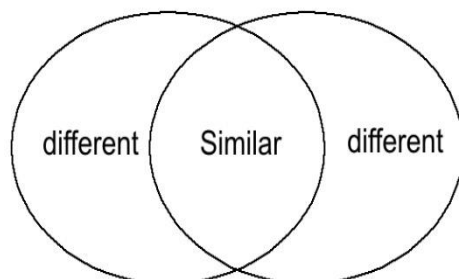
Compare/Contrast
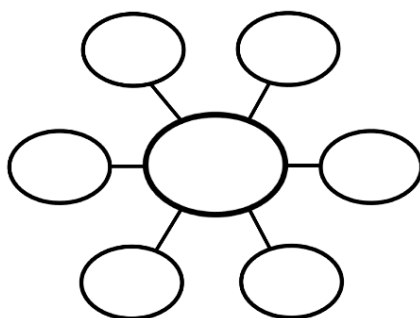
Description

name _____
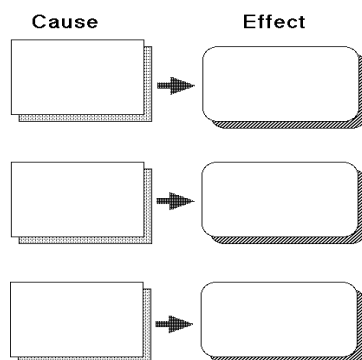
Cause   Effect

Linda J. Burkhart   www.Lburkhart.com

Cause and Effect

Sequence
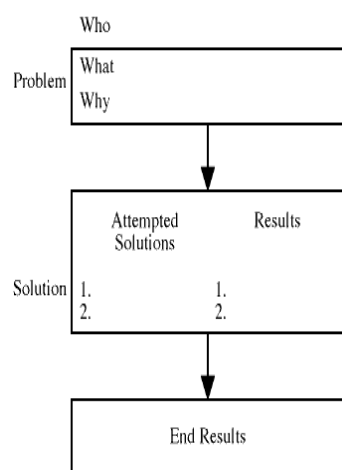
Problem/Solution

Appendix D

Adaption of Reutzel et al. (2016) ITS^2 Instrument (chart only)

Sequence (S) Text Structure	Compare/Contrast (CC)	Cause & Effect (CE)	Problem/Solution (PS)	Descriptive (D) Text Structure
Definition: Text that directly explains a time order, cycle, or process/procedure.	*Definition:* Text that explains how two or more categories of people, places, things, or actions are alike and different.	*Definition:* Text that explains how an initiating event leads to other events that culminate in an outcome or effect.	*Definition:* Text that explains what went wrong and how it was or could be fixed, or asks a question and provides an answer.	*Definition:* Text that tells about single or multiple topics.
Title: Title indicated a time order, process, cycle, timeline, chronology, procedure, steps, and directions.	**Title:** Title indicates how two or more categories of people, places, things, or actions are alike and different.	**Title:** Title indicates how an initiating event leads to other events that culminate in an outcome or effect.	**Title:** Title indicates that something went wrong and how it was or could be fixed <u>or</u> asks a question and provides an answer.	**Title:** Title represents a single topic label or category label of multiple topics, e.g., seeds, reptiles, or weather.
Table of Contents: Indicates a time order, process, cycle, timeline, chronology, procedure, steps, and directions.	**Table of Contents:** Indicates how two or more categories of people, places, things, or actions are alike and different.	**Table of Contents:** Indicates how an initiating event leads to other events that culminate in an outcome or effect.	**Table of Contents:** Indicates that something went wrong and how it was or could be fixed <u>or</u> asks a question and provides an answer.	**Table of Contents:** Lists a series of descriptions about single or multiple topics.
Headings: Represent a time, order, process, cycle, timeline, procedure, steps, or directions.	**Headings:** Represent how two or more categories of people, places, things, or actions are alike and different.	**Headings:** Represent how an initiating event leads to other events that culminate in an outcome or effect.	**Headings:** Represent what went wrong and how it was or could be fixed or asks a question and provides an answer.	**Headings:** Represent a single topic label or category label of multiple topics, e.g., snakes, clouds, and vegetable seeds.
<u>Majority</u> of sentences explain a process, cycle, timeline, chronology, procedure, steps, and directions.	<u>Majority</u> of sentences explain how two or more categories of people, places, things, or actions are alike and different.	<u>Majority</u> of sentences explain how an initiating event leads to other events that culminate in an outcome or effect.	<u>Majority</u> of sentences explain what went wrong and how it was or could be fixed <u>or</u> asks a question and provides an answer.	<u>Majority</u> of sentences describe single topic label or category label of multiple topics.
Signal Words: First, second, third, etc., to begin, starting with, next, then, after, finally, following, at last, to sum up, up to now, in conclusion, etc.	**Signal Words:** Instead, alternatively, or, but, on the other hand, comparison, contrast, the same as, just as, unlike, despite, both, alike, different, likewise, etc.	**Signal Words:** As a result, because, since, thus, so therefore, as a consequence, reasons why, on account of, it follows, etc.	**Signal Words:** Problem, <u>what, why, when, where, how,</u> question, issue, trouble, solution, answer, response, puzzle, issue, the trouble, to solve the ___, response, etc.	**Signal Words:** For instance, like, such as, in other words, thus, that is, for exmple.

Strategy Instruction, Drama, and Oral Discourse in Grades K to 2: Results from Cycle 1

Zoi A. T. Philippakos

University of North Carolina at Charlotte

Logan Robinson

University of Delaware

Sarah Munsell

University of Pennsylvania

Abstract

The purpose of this study was to develop resources and examine the effects of self-regulated strategy instruction that included drama and oral retellings on K to 2 students' story writing ($n = 219$). Further, the study strived to develop the resources and procedures for professional development (PD) support for teachers and receive their feedback on the instructional approach and the PD support. The study was a pretest-posttest design as one cycle of design research with a duration of one month. The results showed statistically significant differences on students' writing quality and teachers provided positive feedback both on the instructional approach and on the PD. Revisions, limitations and implications for practice and future research are further discussed.

Keywords: *story writing, strategy instruction with self-regulation, oral language, writing, writing instruction.*

The Common Core State Standards Initiative (CCSSI, 2010) resurfaced the neglected "R" (National Commission on Writing in America's Schools and Colleges, 2003) and brought attention to writing (Mo et al., 2014). Previous policies had given attention to reading and mathematics (e.g., No Child Left Behind, 2000), and writing had not received as much instructional attention. Nevertheless, the value of writing as a literacy outcome cannot be ignored, especially when it is important for students' academic success (Mikulecky, 1998; Wolfe, 2003). Based on the standards' guidelines, students should be able to apply the writing process in order to respond to the needs of the rhetorical task, of the purpose, and of the audience (Aristotle, 1991; Hayes & Flower, 1980; Hayes, 1996; 2006). They should be able to determine the writing purpose and whether they write in order to persuade, inform, entertain or convey an experience (CCSSI, 2010; National Assessment of Educational Progress (NAEP); Philippakos, in press). Overall, students are expected to be able to perform a rhetorical task analysis (Bereiter & Scardamalia, 1987; MacArthur & Philippakos, 2010; Philippakos, in press) to determine the writing purpose, the audience, the genre, and complete the writing process. For instance, if the goal is for students to write their opinion, the purpose would be to persuade and the genre would be an opinion essay (Philippakos, MacArthur & Coker, 2015). Thus, when students brainstorm ideas, they may generate ideas in favor and against a given topic in order to determine the side they would select or to develop ideas by considering the opposing side since argument is dialogic in nature (Aristotle, 1991; Toulmin, 1958; Vygotsky, 1981). In the process of brainstorming, students will consider reasons that would be convincing to the audience, and as they think of ways to organize their ideas, they may select ideas that are stronger and not use all of them even though they are present. The standards set expectations for students from as early as

Kindergarten to be able to complete opinion, narrative, and informative papers. Kindergartners are expected to do that through drawing, dictation, and writing. From grade 1 and later students should apply phonics skills to compose and also use peer feedback to engage in revisions and editing. Overall, students who are able to perform these challenging writing tasks fit the description of knowledge transformers (Bereiter & Scardamalia, 1987). Contrary to knowledge transformers, knowledge tellers, as the term implies, tell readers what they know about the topic without analyzing the task and with only some vague knowledge about the genre. Thus, their responses may be lengthy, but may incomprehensive or inaccurate (Graham & Harris, 2000).

Writing is both a cognitive and social task that involves the individual and her/his thoughts as well as the environment and the discourse (Prior, 2006). Within this context, social interactions and dialogic discourse can support students' composition. The role of oral language and talk should not be undermined in the primary grades. Oral language and dialogic discourse have been considered to be the foundation for meaning making (Bakhtin, 1981; 1986; Myhill, 2006). Dialogic teaching (Alexander, 2008; 2000; Mercer, Dawes, & Staarman, 2009 is based on an interaction between teachers and students and builds beyond teacher questioning, students' responding, teacher evaluating. Such talk supports students understanding and can stimulate their thinking and participation (Alexander, 2008a), and when it is well-structured and has specific goals, it could lead to better learning outcomes (Resnick, Michaels, & O'Connor, 2010). For example, work on argumentation indicates the importance of oral language in conversations and also in writing (Anderson, et al., 2001; Anderson, Chinn, Waggoner & Nguyen, 1998; Philippakos, MacArthur & Munsel, under review). In order to support second grade students' argumentative writing, Philippakos and MacArthur (2017; under review) integrated collaborative

reasoning with self-regulated strategy instruction. The effects of this integrated approach showed improvements on students' writing quality and indicated an increase in their will to write outside of the classroom.

With these principles in mind, the view that writing is a cognitive task and also a social one embedded in a social context (Prior, 2006), and with the understanding that primary grade students may require extensive support in oral discourse to understand how to construct their thoughts, we developed resources and examined their feasibility in the primary grades. Specifically, we considered that in the primary grades oral language can significantly support students' writing. In the case of learning about argument, the use of collaborative reasoning (CR) with strategy instruction promoted students' understanding about argument (Philippakos, 2017; Philippakos & MacArthur, under review). In the case of story writing, we expected that the combination of oral language for retellings, drama, and dialogic interactions among participants would improve students' story writing.

Story Writing and Story Grammar

Stories or story grammars (Mandler & Johnson, 1977; Rumelhart, 1975; 1980; Stein & Glenn, 1979; Short & Ryan, 1984) have been extensively studied for reading comprehension. A story grammar consists of an initiating event that causes a problem or sets a goal for the character or protagonist and results in a series of actions in an effort to resolve the problem or satisfy that goal (Newell & Simon, 1972). Knowledge of story grammars and instruction on those could support students' ability to focus on specific events or episodes and be able to recall information using a logical sequence (Stein & Glenn, 1979). Knowledge of those grammars can

also support students' spontaneous production of stories; even though, representation of those episodes may not initially be sequential and require revisions.

Story writing and narrative writing are challenging for young learners (Applebee, Langer, Jenkins, Mullis, & Foertsch, 1990). Writing an engaging story requires the author not only to include the story elements but assure that the problem makes sense, the events are sequential, and the solution is connected to that problem. Even though research has examined how instruction on story structure can support students' memory and comprehension of stories (Baumann & Bergeron, 1993), and how instruction on text structure through read alouds can improve reading comprehension (Stevens, Van Meter, & Warcholak, 2010), instruction on story writing using principles of strategy instruction, oral retellings, drama, and dialogic interactions could be further explored.

Instructional approaches to story writing. In schooling, stories and story writing have received attention in the primary grades (Duke, 2000; Cutler & Graham, 2008). A national survey of primary-grade teachers suggested that students primarily worked on story writing at the expense of the other genres. Indeed, story writing often takes precedence over expository structures and informative texts (Kamberelis, 1999); While expository structures and informative texts are valuable genres to learn, mastery of story grammar can support both students' written production and comprehension (Simmons, Kameenui, et al. 1993).

Storytelling and oral discourse are part of the human nature (Bruner, 1991). From as early as Homer, stories have captivated humans' imagination and shaped social interactions. Language in this context shaped and was shaped by social interactions (Bakhtin, 1981). Thus, language can function as a vehicle to support young children's thinking. Verbal and nonverbal social

interactions gradually are internalized to become inner speech (Vygotsky, 1978), which in turn guides an individual's cognitive actions.

One approach to support story writing is strategy instruction (Graham, 2006; MacArthur, 2011; Graham & Harris, 1997). Strategy instruction is based on the explicit and systematic instruction of cognitive processes such as planning and revising. In strategy instruction the teacher models by thinking out loud cognitive processes. These social interactions with learners gradually become internalized for them and part of inner speech (Englert, Raphael et al., 1991). An instructional approach with evidence of its effectiveness that is based on the principles of strategy instruction is the Self-Regulated Strategy Instruction (SRSD) approach. In this approach, students learn cognitive strategies (e.g., planning) through six steps: 1) Develop and activate background knowledge on the type of writing, 2) discuss it, 3) model it, 4) memorize it, 5) support it, and 6) practice it. Also, students in this approach are taught -regulation strategies that help them complete the writing task without feeling overwhelmed (Harris & Graham, 1999; Harris, Graham, MacArthur, Reid & Mason, 2011). Studies in SRSD for story writing for students with (Adkins & Gavins, 2012; Asaro-Saddler & Saddler, 2010; Asaro-Saddler, 2014; Lienemann, Graham, Jansen & Reid, 2006; Lane et al., 2008; Lane et al., 2010; Lane et al., 2011; Saddler, 2006; and without learning disabilities (Harris, Graham & Mason, 2006), show that instruction on the structure/forms of stories can improve students' writing quality. However, limited research on strategy instruction exists for students in grades 1 and K (Zumbrunn & Brunning, 2013).

Other approaches to story writing show the value of drama and play (Caldwell & Moore 1991; 1993). For example, Caldwell & Moore (1991) conducted a study with 42 second and third

graders who were randomly assigned to a drawing or a discussion condition. The goal of the study was to examine which of the two approaches better supported students' planning and writing quality. The results showed that the drawing activity was more effective than the discussion. In a follow-up study with 63 second and third-graders (Moore & Caldwell, 1993), the authors examined the effects of drama, drawing, and discussion on students' planning and writing quality. The results showed that participants in the drama and drawing groups outperformed students in the discussion group on writing quality. These results demonstrate the value of instructional aspects oral discourse that could be integrated with a more structured instructional approach.

Current Investigation

This current study attempted to add to the corpus of cognitive strategy instruction by examining the effects of self-regulated strategy instruction with an added emphasis on genre-based oral interactions between teachers and students for retellings, an emphasis on drama and on dialogic interactions. We find that an approach to support story writing could be based on the use of drama and on the use of oral discourse. The use of oral discourse is already present within strategy instruction as part of teacher modeling and on the use of transition words. This study attempted to increase the frequency of this practice and include oral retellings of stories read, dramatic play, and dialogue among participants. Teaching learners from as early as Kindergarten the writing process while supporting their learning about transcription and the alphabetic principle can be challenging. However, language is a powerful tool (Bakhtin, 1981) and could support students' internalization of challenging cognitive processes so when they are able to write, they can effectively do so by following the writing process.

The intervention was developed using the principles of self-regulated strategy instruction (Graham, 2016; Graham, 2006; Harris & Graham, 2009; 1997), connected reading and writing through read alouds and oral retelling by using the elements of the genre (Tierney & Shanahan, 1991), emphasized evaluation using genre-specific evaluation criteria (Philippakos & MacArthur, 2016, used the elements of the genre for planning, drafting, and revising (Englert, Raphael et al., 1991; Philippakos, MacArthur & Coker, 2015), and emphasized interactions among participants to retell information, and involve in dialogue and dramatic play. The research questions that led this investigation were:

1. Does this approach significantly affect students' writing quality?

2. Using both qualitative and quantitative information what changes should be made to improve this writing approach and its professional development?

Research Methodology and Procedures

A pretest-posttest group design was employed. The intervention lasted for two months (from November to December). At pretest and posttest, all students were asked to respond to story prompts (e.g., you are at the park when a squirrel runs down from a tree, comes closer, and then he opens its mouth …. write what happens next!).

The research design was based on the principles of design research (McKenney, & Reeves, 2012; Reinking & Bradley, 2008). Since 1992 (Brown, 1992), this research approach has been recognized as a method for developing and refining educational approaches through the use of iterative cycles of theory application, planning, and revision in actual educational settings. "*Design-based research methods focus on designing and exploring the whole range of designed innovations: artifacts as well as less concrete aspects such as activity structures, institutions,*

scaffolds, and curricula (Design-Based Research Collective, 2003, pp. 5-6). In design research, the researcher and the environment interact and shape the instructional approach to better align to the needs of that setting (Robinson, 1998). This specific study reports findings from one cycle of implementation that lasted from November to December (cycle of iteration).

Instructional approach. The approach used principles of self-regulated strategy instruction (Graham, 2006) addressing what strategies to teach and how to teach them. At the instructional stage, students were introduced to the writing purposes (CCSS, 2010) (to **p**ersuade, to **i**nform, and **e**ntertain or **c**onvey **e**xperience (PIECE of pie; Philippakos, in press) and were taught the elements of stories (characters with a name, time and place (setting), problem, events, solution, emotions). At this stage, a conversation took place between teachers and students on the importance of each element and on the effects of its omission by a writer on the quality of a story. Teachers then introduced the elements of the genre (Beginning with characters with names and descriptions, time, place, and problem; Middle with events; end with solution) and conducted a read aloud. Then by using the elements of the genre as a guide, teachers took notes to retell the story. Teachers reviewed with students the elements and discussed with them why lack of specific elements would or could negatively affect the reading comprehension of readers.

Next, teachers modeled for students how to write stories using the writing process. Teachers modeled how to plan, draft, evaluate to revise, edit and share a story. They thought out loud and applied coping strategies to demonstrate how to problem solve and complete the task without giving up (Harris & Graham, 1999; 2009; Pajares & Valiante, 2006).

Then teachers and students collaboratively wrote a story. During this task, teachers were strongly involved in a dialogue with students and challenged them to explain why a specific

element was needed, and why they needed to complete a specific step of the writing process. For

example, teachers would say, "*According to our elements, we need characters or character.*

Could we not have a character? Why? Our story would finish faster if we did not have a

character. Why do we need one? […] *We will have a character. Do we need a name? Does the*

character need to be described? Why? We will have a much shorter paper and finish faster if we

do not. Who cares about having characters with names and description?" This process of

arguing with the teacher about the importance of the inclusion of the elements was repeated more

than once and more than one paper was collaboratively written. Oral discourse was also evident

in the drafting of stories as the use of sentence frames was used to support students' sentence

production (e.g., Once upon a time; One ____, when the _____ was _____ and ____ was _____

(e.g., One <u>morning</u>, when the <u>sun</u> was <u>bright</u> and <u>no cloud</u> was <u>in the sky</u>) and prior to the

drafting of sentences. Information from the graphic organizer was orally reviewed first.

Teachers followed a process of saying the sentence, hearing it, writing it, rereading it. The

practice of developing the elements in sentences prior to writing them was based on oral practice.

Overall, students were guided to first say a sentence they intended to write (or collaboratively

write with the teacher), hear it, write it, and reread it ("*say it, hear it, write it, reread it, correct it*

if you need it!"). Further, when working on stories and when examining how to develop

dialogue, students were asked to talk with peers and imagine what would the character say.

Students were asked and guided to "act" like the character and interact with others to better think

what the character/s would say. In second grade, students were instructed to talk with their

partners and "be" the character. In Kindergarten and in first grade, students were asked to do the

same, and they also acted out what the character would do or walk like or talk like in order to

provide better and clearer descriptions. Through guided practice and gradual release of

responsibility (Pearson & Gallagher, 1983), students wrote stories.

   Professional development approach. The professional development model was based

on guidelines by Desimone (2009) and colleagues (Darling-Hammond, & Lieberman, 2012).

Effective writing PD it is suggested to have a content focus and be coherent with duration.

Additionally, PD should be conducted in a manner that supports learning and teachers'

participation (Neuman & Cunningham, 2009). Work on PD on writing is not extensive;

nonetheless, it is developing and research on practice-based PD on SRSD indicates that

systematic PD that is specific in its expectations, has continuity, provides ongoing support and

promotes teachers' participation can improve instruction and students' writing (Harris, Graham,

& Adkins, 2016; Harris, Lane, et al., 2012). In this study, the focus was writing and specifically

story writing. Teachers were provided with materials and resources for the instruction of this

genre and were also given a manual that included lessons. Further, in this context, teachers and

researchers collaborated and actively discussed the lessons and their formats through discussions

and meetings that took place biweekly during their Professional Learning Communities (PLCs)

(Newmann, 1996). At the beginning of those sessions the principal also participated to learn

about the progress and any needs that he could further support. The principal did not stay when

coaching feedback was discussed or when comments about specific teachers' challenges were

shared. Only when teachers found this necessary, the information was directly shared by them. In

these sessions, feedback that teachers provided was collected and progress across the lessons and

on students' work was discussed. In addition, coaching and observations were frequent (at least

three per teacher). In order for coaching to be immediate across all teachers, teachers videotaped

their instruction and sent it to the researcher for written feedback, which was provided within a day.

Participants and Setting

All teachers were invited to participate in this work via informed consent. The study took place at a public, Title I school, which was located on the east coast of the United States. The school was classified as a Focus School by the State and in need of improvement in Language Arts and Mathematics. Teachers used a basal program for reading, which incorporated writing sessions and lessons, but teachers did not have a specific writing program. As they shared, primarily, they used online resources as well as books that they independently purchased. The school's schedule provided approximately 20 minutes of writing instruction, daily.

Teacher Participants. Participants were 12 teachers ($n = 12$ female). Five of the teachers had a Master's degree. Two of the teachers were long-term substitutes. 92% of teachers were White/Caucasian. All of the 10 teachers, who were regular employees of the school had extensive experience teaching within their grade (more than 6 years on average).

Student Participants. Participants were 219 students (67 Kindergarten students, $n = 34$ female; 69 first grade students, $n = 34$ female; 83 second graders, $n = 36$ female) (See Table 1). Information on student demographics was provided by the school district and was de-identified.

Table 1. Demographic Composition of All Participants by Grade

	Grade Level						
	Grade K		Grade 1		Grade 2		
Ethnicity	Females	Male	Females	Male	Female	Male	Total
African American	11(5.02%)	14 (6.39%)	13 (5.93%)	20 (9.13%)	16 (7.30%)	28 (12.78%)	102 (46.57%)
Asian/Pacific Islander	0	3 (1.36%)	1 (.45%)	0	1 (.45%)	0	5 (2.28%)
Other	2 (.91%)	0	3 (1.36%)	2 (.91%)	0	0	7 (3.19%)
Latino/ Caucasian	21 (9.58%)	16 (7.30%)	17 (7.76%)	12 (5.47%)	17 (7.76%)	19 (8.67%)	102 (46.57%)
American Indian	0	0	0	1 (.45%)	2 (.91%)	0	3 (1.36%)
Special Education	1 (.45%)	4 (1.82%)	4 (1.82%)	6 (2.73%0	3 (1.36%)	5 (2.28%)	23 (10.50%)

Note: M = Mean and SD = Standard Deviation.

Data Sources

Analysis was conducted only with student participants who had complete pretest and posttest responses ($n = 216$). Two students arrived to the school after the study had begun and no pretest was collected from them. One student was absent (due to illness) at posttest.

Quality of stories. At pretest and posttest, students responded to prompts that asked them to complete a story. Specifically, topics provided students with the setting and the characters and asked them to generate the problem, events, and solution. For example, one of the assignment read,

"Imagine this! You are at the park and you are playing with your dog. You are playing catch. Your dog runs away and you can see that it chases a squirrel. You run after your dog that runs after that squirrel. Suddenly, the squirrel stops. It then stands up, raises it paw, and looks at both of you. The squirrel opens its mouth and ..... . Write what happens next."

The decision to work with topics that included elements of the story was twofold. First, in order to examine whether students would be able to analyze the given task and only produce information on elements that the assignment requested instead of rewriting a story from the beginning (when elements of beginning were already part of the writing prompt). Secondly, the time for students to work on writing would not have allowed for them to complete an entire story with a Beginning, a Middle, and an End).

Topics were counterbalanced. Quality of students' first and revised drafts were measured using a 5-point holistic rubric (adapted from Coker & MacArthur, 2011). The rubric asked raters to consider the ideas, organization, development, word choice and sentence structure of papers and provide a score balancing this information. Two independent raters who were unaware of the purposes of the study, rated all papers (432 total); Exact agreement for overall quality was 70% ($r = .90$).

Teacher interviews. Teachers at the completion of the study participated in grade-level focus groups in which they were asked to reflect and explain: (a) what was effective in the lessons, and (b) what should be revised in the lessons, (c) what was effective in the PD, and (d) what should be revised in the PD approach. Notes were taken during those meetings to capture teachers' feedback. Teachers were also asked to write comments at the end of the unit and record

their thoughts and concerns. Analysis of the information was based on the examination of

patterns of responses within the context of each question (Strauss & Corbin, 1998).

Observations. Observations were conducted to coach and also to collect information on

tasks that teachers or students found challenging in order to make revisions. At least three

observations per teacher were conducted with the exception of one of the substitute teachers who

was observed once (scheduling challenges did not allow the completion of the observation).

Results

Writing Quality

The Wilcoxon signed-rank test was employed across analyses due to violation of

normality (Field, 2009). The analysis (See Table 2) found statistically significant differences for

quality ($Z= -10.44$, $p < .001$; pretest M = 1.88, SD = 1.06; posttest M = 2.90, SD = 1.16).

Analyses by grade level examined whether statistical significant differences were present for all

grades. The findings showed statistically significant differences for Kindergarten ($Z= -5.80$, $p <$

.001; pretest M = 1.09, SD = .33; posttest M = 2.00, SD = .83), for first grade ($Z= -5.90$, $p <$

.001; pretest M = 1.54, SD = .81; posttest M = 2.84, SD = 1.08), and for second grade students

($Z= -6.43$, $p < .001$; pretest M = 2.80, SD = .97; posttest M = 3.66, SD = .86).

Table 2. Quality of students' papers

	Pre	**Post**	**Gain**
Kindergarten	1.09 (.33)	2.00 (.83)	.91
Grade 1	1.54 (.81)	2.84 (1.08)	1.30
Grade 2	2.80 (.97)	3.66 (.86)	.86
Overall	1.88 (1.06)	2.90 (1.16)	1.02

Note: M = Mean and SD = Standard Deviation.

Teacher Interviews

Overall, teachers were positive in their feedback. In the following section information is provided for each of the questions asked.

What was effective in the lessons. Teachers positively commented on the use of the read alouds to discuss the elements and on the use of the elements to take notes and to retell. They found that the conversation that took place about the elements and later the use of those elements to retell, better supported students' understanding about writing and reading and helped them make those connections during the instructional day. Teachers also found the posters and charts that were part of the unit useful (Philippakos & MacArthur, in preparation) and specifically the charts that included the genre elements for retelling and planning and the rubric that was used for evaluation and included the same elements. One of the first-grade teachers said,

I thought reviewing story elements in reading and writing was effective. We were able to correlate the author's purpose while reading and apply it to our own purpose as the writer. Also when reading, it gave us good ideas on how to incorporate dialogue and develop our characters in our own stories."

Teachers appreciated the suggestions for differentiation of instruction in order to support struggling readers (e.g., instead of rewriting a story changing one aspect of a story such as the problem and rewriting the end). As one of the teachers shared,

"The suggestion of having students change just one element of a familiar story, early in the story writing unit, was especially helpful for my reluctant and less able writers. That way, all students could experience the success of story writing without having to create an entire story on their own. The graphic organizers were also extremely helpful in supporting my students' transition towards independence."

Finally, they positively commented on the consistency of the provided information between the elements to retell, organize the ideas, and evaluate the ideas. They were also positive about the overall use of language to engage students in explanations and in dramatic play or dialogue as the character. Teachers appreciated the use of oral language for the construction of stories orally (during drafting) and for retellings. One of the teachers explained,

"The next time I teach this unit, I plan to start right away in the beginning of the year. Identifying the elements, using the elements to retell, and /or rewrite, collaboratively and orally many times. I pushed my students to start writing full responses and full stories before many were ready, and I found that I had to do much more reteaching and back tracking than I had expected."

What should be revised in the lessons. Regarding revisions, teachers requested for all materials to be completed and provided at the start of the year. They also requested that additional books be provided for the read aloud with elements pre-identified for them so they would not need to read all books and have a "heavy preparation." Teachers also requested specific guidelines for small-group tasks and mini-lessons.

One of the Kindergarten teachers who found that the approach was not helpful for this group of students suggested that instruction on the writing process begin later in the year or in schooling because students first needed to learn how to handle books, learn print in general and its function, how to form letters, connect letters with sounds, and develop phonological awareness skills. Another Kindergarten teacher, disagreed and explained that the collaborative practice with the constant discussions and role play were very helpful to her students. She also explained that even though they all completed together the task analysis, brainstorming, and graphic organizer, she broke the writing task across days. Thus, they wrote the beginning (characters, time, place and problem) on one day, the middle (actions) in another day, and the end (solution and characters' feelings) in another day. This teacher seemed to understand that breaking the process of planning across days was not helpful for students; but breaking the drafting across days was helpful as students and teachers could further engage into language tasks to further support writing (e.g., use of descriptive words and adjectives).

What was effective in the PD. Teachers were positive about the PD that was provided, which included modeling, coaching, and weekly discussions with goal setting. They mostly commented on the live modeling with their students that the researcher provided. They found that this live modeling was more powerful compared to videos of approaches they had watched

in the past. The reason for this was that they were able to witness their students' responses and how the researcher applied the approach and took opportunities for explanations (e.g., when students gave an incorrect response). Nevertheless, they found the videos that the researcher provided as models helpful because these videos allowed them to refer back to them if they needed to review. Some of the teachers shared that they were impressed when their students were able to complete tasks with the researcher. However, they found it challenging to complete these tasks alone later. This is one more reason videos were helpful and more videos were requested.

Teachers found the approach challenging, but the PD supportive and helpful in achieving instructional goals. As one of the Kindergarten teachers shared,

"*I love a challenge and believe that in order to improve we need to change. For me, the PD was perfect. I had another teacher who was willing to reflect and discuss which provided me with any additional support. Some other teachers may not be comfortable with change and or willing to invest the time to truly make it come alive for their students. It is much more challenging for the teacher but well worth it!* […] *How do we convince the others? Maybe if we all brought our student work to the PLC meetings each and every week?*

What should be revised in the PD approach. Teachers suggested for videos to be provided for all lessons and for all components of them. They also requested more modeling sessions to be provided with their students. As one of the teachers said, "*I would like more modeling of the entire process.*" Additionally, teachers suggested that Skype sessions (that took place when the researcher was not able to attend in person) be longer than 30 minutes. Teachers requested additional PD and follow up PD at the end of the year in the form of reflection and

goal setting so they could determine their goals and needs for the next year. They also explained,

though, that watching videos of instruction required time and that was something that the school

needed to consider for them as they moved ahead. One of the teachers shared, "

> *I will spend my own time viewing others work and reading. Therefore, for me the PD*
>
> *approach is perfect. I am not sure all teachers can or will take their own time to view*
>
> *videos."*

The comments that this teacher made reflects the need for time in the instructional time for

teachers' PD practices. Also, this comment reflects the need to consider and plan in a school

calendar for time for teachers to complete tasks that are expected from them in order to perform

better in their profession.

Observations

Some teachers found specific aspects of the lessons more challenging than others.

Primarily, two of the Kindergarten teachers considered the approach to be too demanding on

their students and initially were challenged by the suggestion for themselves to engage in oral

discourse with their students and in collaborative tasks. They considered that instruction on letter

formation, directionality, and on connections between letters and sounds was far more needed. It

was challenging for them not to address those provide instruction on genre and on lower-level

skills. One of the teachers also shared during PLC sessions that students who had limited

background knowledge and poor language skills were not able to complete any of the tasks.

However, when lessons were taught by the research team and students were engaged in language

interactions, they were able to perform those tasks. The teacher who proceeded with the

instruction using the information she had observed reported later positive effects on her students.

Through these interactions with teachers it was helpful to see that the term "writing" was interpreted from them as "students write alone without support" instead of "collaboratively writing and talking about writing." Additional feedback and support was provided with modeling in order to demonstrate how language could support students' dictation of stories.

Challenges were also observed from two of the second-grade teachers who seemed to have management challenges in the classroom. Instruction that incorporated oral discourse and dialog with a request for students to provide explanations resulted in loud discussions and interactions that were not always on topic and was challenging to manage.

Revisions from Cycle 1

Based on the information collected from this first cycle, the following revisions of the lessons were considered: Students were able to provide better-quality responses. However, their responses also showed challenges with transcription and even with second graders challenges with editing. Thus, it was considered that perhaps this type of work with the expectation for students to write their own stories should begin for Kindergarten later. In the meantime, teachers could work on collaborative writing with students, in orthography, and in letter-sound relationships. For second graders and first graders, the goal would be to also address editing skills. Even though this was included as a step of the process, not all teachers worked on that as they found that lack of lessons on grammar did not support the instruction of grammar. Second, all lessons were rewritten to be explicit on the inclusion of oral discourse and with the inclusion of sample questions to stimulate dialogue and interactions with students. In addition, a sample read aloud was included with the elements of the genre completed for retelling, and a list of books was provided that teachers could use. We did not revise the lessons to include all read

alouds with questions and with retellings. We find a certain value added to the process of lesson planning when teachers read the texts and develop the stopping points for read alouds themselves. Depending on their students and needs, their discussion may differ; thus, we decided not to make this revision.

Regarding the PD approach, we were not able to control the time allotted for PLCs as this was predetermined by the site. However, we considered including a more structured format of conversations in the form of an agenda for the PLC sessions. Further, we did develop more videos of instruction.

The concern on time to watch videos and work through resources that was chared by teachers, is one that would require coordinated efforts for the school to potentially allot Professional-Learning Communities (PLCs) time for teachers to watch the videos, read through the provided resources, and discuss with their peers. An alternative solution could potentially be the use of online modules for teachers to complete and receive PD credit. This would be an effective approach that the district could also consider for teachers of other schools to also have the opportunity to apply the approach.

Discussion

The study examined the application of self-regulated strategy instruction with K to 2 students and included a strong emphasis on language application through oral retellings of books read in class, of play, and of dialogic interactions. The results showed that students production of stories improved from pretest to posttest even though the duration of the study was relatively short. Further, teachers in general provided positive feedback on the approach and on the provided PD.

In this work, students learned the elements and form of writing, which has been found to support students' production of stories (Fitzgerald & Teasley, 1986; Fitzgerald, Speiegel & Teasley, 1987; Watanabe & Hall-Kenyon, 2011). In this study, though, oral language was present across all aspects of instruction, and students either engaged in explanations about their thinking and explanations about the importance of specific elements and/or of components of a story they produced, and/or collaborated with their teacher and classmates in the development of different elements as they acted like the characters to describe the character's feelings and actions and her/his inner thought or dialogue with others. Overall, collaborative discourse infused with oral language interactions was present in the completion of cognitive tasks.

Challenges that teachers faced were considered for revisions of this work as this was the first cycle of implementation. This work is based on the principles of formative experiment and design research (Reinking & Bradley, 2008). The basis of this methodology is in the collaboration between researchers and practitioners to make revisions of instructional approaches according to the needs of an existing site. This type of methodology allows for a true collaboration between researchers and practitioners enabling instruction to be authentic and respectful of the context (Robinson, 1998; Snow, 2015).

Limitations and Implications for Research

This study, true to the principles of design research, is only a pretest-posttest design. Even though in this study the topics were counterbalanced, there is no comparison group in order to answer the question, "*this works better than what else*?" However, this question is not the type of question answered by this research methodology as the goal is to better refine an existing

approach and learn from the feedback of the practitioners on how to best apply it in their context. Future research could examine the effects of this work with other approaches.

Another limitation refers to the lack of additional measures of students' performance and especially measures of oral language. Future research could examine the effects of the approach on students' oral (expressive language) and on production of stories, orally (Lienemann, Graham, Jansen & Reid, 2006).

Further, in this study there was no examination of students' production of stories long term and no follow-up data were collected on students' writing. Future research could follow students and examine the effects of this work across time (within an academic year or beyond). Also, future research could explore the possibilities of transfer of knowledge across subject areas and across genres.

An additional limitation is that we did not observe teachers' writing in other subject areas. Some of the teachers shared that they used the same approach and dialogic interactions with students across the instructional day. However, we cannot describe what they did or how perhaps this additional exposure supported students' understanding about stories.

Also, in this study we were not able to conduct student interviews. The data we used from students were de-identified and were provided from the district. Through informal observations we could tell that students truly enjoyed the interactions and were far more able to verbally tell a story, but we were not able to officially collect interviews to report students' perceptions. Future research could consider this information as it is also valuable.

A final limitation refers to measures of reading comprehension. Even though teachers engaged with students in retelling of stories by learning and using the elements of the genre, we

did not have a measure of reading comprehension to confirm whether this task improved or affected students' reading comprehension. Future research could further examine this.

Practical Implications

Writing is both a cognitive and a social task (Nystrand, 2006). From a sociocognitive view (Flower, 1994; Sperling, 1993; Sperling, 1996), writing is the process of meaning making, and it is shaped within a social context shared by several individuals (Graham, in press). Thus, the relationship between reader, text, and writer is a shared one. In this approach, the process of meaning making was supported and promoted through meaningful interactions between students and teachers and students alone. Language was the primary tool for production and explanation of cognitive processes and tasks.

Even though in the primary grades the goal should be the development of a reader, literacy as a whole with attention to writing should not be ignored. Students could be engaged in more tasks than the holding of a pencil, the formation of letters, copying of sentences, and writing basic words. They could be engaged into the application of cognitive strategy instruction through language and collaborative engagement.

References

Adkins, M. H., & Gavins, M. V. (2012). Self-Regulated Strategy Development and

      Generalization Instruction: Effects on Story Writing and Personal Narratives among

      Students with Severe Emotional and Behavioral Disorders. *Exceptionality, 20,* 4, 235-

      249.

Anderson, R. C., Nguyen-Jahiel, K., McNurlen, B., Archodidou, A., Kim, S., Reznitskaya, A.,

      Tillmanns, M., Gilbert, L. (2001). The Snowball Phenomenon: Spread of Ways of

      Talking and Ways of Thinking across Groups of Children. *Cognition and*

      Instruction, 19, 1, 1-46.

Anderson, R. C., Chinn, C., Waggoner, M., & Nguyen, K. (1998). Intellectually stimulating story

      discussions. In J. Osborn & F. Lehr (Eds.), *Literacy for all: Issues in teaching and*

      learning (pp. 170-186). New York: Guilford Press.

Aristotle. (1991). *The art of rhetoric* (H. Lawson-Tancred, Trans.). London: Penguin Classics.

Asaro-Saddler, K. (2014). Self-Regulated Strategy Development: Effects on Writers with Autism

      Spectrum Disorders. *Education and Training in Autism and Developmental*

      Disabilities, 49, 1, 78-91.

Asaro-Saddler, K., & Saddler, B. (2010). Planning Instruction and Self-Regulation Training:

      Effects on Writers with Autism Spectrum Disorders. *Exceptional Children, 77,* 1, 107-

      124.

Bakhtin, M. M. (1981). *The dialogic imagination: Four essays* (C. Emerson, Trans.,

      M.Holquist, Ed.). Austin, TX: University of Texas Press.

Baumann, J.F. & Bergeron, B. S. (1993). Story map instruction using children's literature:

Effects on first graders' comprehension of central narrative elements. *Journal of Reading Behavior*, 25, 407-437.

Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition.* Hillsdale, NJ: Lawrence Erlbaum.

Brown, A. L. (1992). Design Experiments: Theoretical and Methodological Challenges in Creating Complex Interventions in Classroom Settings. *Journal of the Learning Sciences, 2,* 2.)

Bruner, J. (1991). The narrative construction of reality. *Critical Inquiry* 18 (1), 1-21.

Caldwell, H., & Moore, B. H. (1991). The art of writing: Drawing as preparation for narrative writing in the primary grades. *Studies in Art Education, 32*(4), 207-219.

Coker, D., & MacArthur, C. A. (2011). Investigating the impact of classroom instruction and literacy skills on writing achievement in elementary schools. Proposal funded by the Institute for Education Sciences, U. S. Department of Education (4 years, $1,450,000). R305A110484

Collins, A. (1999). The changing infrastructure of education research. In E.C. Lagemann & L.S. Shulman (Eds.), Issues in education research: Problems and possibilities (pp.289-298). San Francisco: Jossey-Bass.

Common Core State Standards Initiative (2010). *Common core state standards for English language arts & literacy in history/social studies, science, and technical subjects.* Retrieved October 10, 2015, from

http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf

Cutler, L., & Graham, S. (2008). Primary grade writing instruction: A national survey. *Journal of Educational Psychology, 100*, 907–919. DOI: 10.1037/a0012656

Darling-Hammond, L., & Lieberman, A. (Eds.) (2012). *Teacher education around the world: Changing policies and practices*. New York: Routledge.

Design-Based Research Collective (2003). Design-based research: An emerging paradigm for educational inquiry. *Educational Researcher*, 32 (1), 5-8. DOI: 10.3102/0013189X032001005

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, *38*, 181-199. DOI: 10.3102/0013189X08331140

Duke, N. K. (2000). 3.6 minutes per day: The scarcity of informational texts in first grade. *Reading Research Quarterly, 35,* 202–224.

Englert, C. S., Raphael, T. E., Anderson, L. M., Anthony, H. M., & Stevens, D. D. (1991). Making strategies and self-talk visible: Writing instruction in regular and special education classrooms. *American Educational Research Journal, 28*, 337-372. DOI: DOI: 10.3102/00028312028002337.

Field, A.P. (2009). *Discovering statistics using SPSS* (3rd ed.). London, UK: Sage.

Fitzgerald, J., & Teasley, A. B. (1986). Effects of instruction in narrative structure on children's writing. *Journal of Educational Psychology, 78*(6), 424-432.

Fitzgerald, J., Lee Shiegel, D., & Teasley, A. (1987). Story Structure and Writing. *Academic Therapy Quarterly*, 22(3). 255-262.

Flower, L. (1994). *The construction of negotiated meaning: A social cognitive theory of writing.*
     Carbondale: Southern Illinois University Press.

Flower, L.S., & Hayes, J.R., (1981). Plans that guide the composing process. In C.H., Frederiksen
     and J.F. Dominic (Eds.), *Writing: The Nature, Development, and Teaching of Written*
     Composition (2), 39-58.

Flower, L.S. & Hayes, J.R. (1980). The dynamics of composing: Making plans and juggling
     constraints. In L. Gregg & E.R. Steinberg (Eds.), *Cognitive Processes in Writing* (pp. 31-
     50). Hillsdale, NJ: Lawrence Erlbaum.

Graham, S. (in press). A writer(s) within community model of writing. In C. Bazerman, V.
     Berninger, D. Brandt, S. Graham, J. Langer, S. Murphy, P. Matsuda, D. Rowe, &
     M. Schleppegrell,(Eds.), *The lifespan development of writing*. Urbana, IL: National
     Council of English.

Graham, S. (2006). Strategy instruction and the teaching of writing: A meta-analysis. In MacArthur,
     C. A., Graham, S., & Fitzgerald, J. (Eds), *Handbook of Writing Research* (pp. 187-207).
     New York: Guilford Press.

Graham, S., Bollinger, A., Olson, C., D'Aoust, C. MacArthur, C., McCutchen, D. &
     Olinghouse, N. (2012). *Teaching elementary school students to be effective writers*.
     Retrieved from http://ies.ed.gov/ncee/wwc/PracticeGuide.aspx?sid=17.

Graham, S., Harris, K. (2000) The role of self-regulation and transcription skills in writing
     and writing development. *Educational Psychologist*. 35, 3–12.

Graham, S., & Harris, K. R. (1997). It Can Be Taught, but It Does Not Develop Naturally:
     Myths and Realities in Writing Instruction. *School Psychology Review, 26,* 3, 414-24.

Harris, K. R., & Graham, S. (1999). Problematic intervention research: Illustrations from the evolution of self-regulated strategy development. *Learning Disability Quarterly*, 22, 251–262. DOI: 10.1080/09362835.2012.747180.

Harris, K. R., & Graham, S. (2009). Self-regulated strategy development in writing: Premises, evolution, and the future. *British Journal of Educational Psychology Monograph Series II, 6*, 113-135. DOI: 10.1348/978185409X422542.

Harris, K. R., Graham, S., & Mason, L. H. (2006). Improving the Writing, Knowledge, and Motivation of Struggling Young Writers: Effects of Self-Regulated Strategy Development With and Without Peer Support. *American Educational Research Journal, 43,* 2, 295-340.

Harris, K., Graham, S., MacArthur, C., Reid, R., & Mason, L. (2011). Self-regulated learning processes and children's writing. In B. J. Zimmerman & D. H. Schunk (Eds.), Handbook of self-regulation of learning and performance (pp. 187-202). New York: Routledge.

Harris, K. R., Lane, K. L., Driscoll, S. A., Graham, S., Wilson, K., Sandmel, K., Brindle, M., ... Schatschneider, C. (2012). Tier 1, Teacher-Implemented Self-Regulated Strategy Development for Students with and without Behavioral Challenges: A Randomized Controlled Trial. *Elementary School Journal, 113,* 2, 160-191.

Hayes, J. R. (2006). New directions in writing theory. In MacArthur, C. A., Graham, S., & Fitzerald, J. (Eds), *Handbook of writing research* (pp. 28-40). New York: Guilford Press.

Hayes, J.R. (1996). A new framework for understanding cognition and affect in writing. In C.

M. Levy & S. Ransdell (Eds.), *The science of writing* (pp.1-27). Mahwah, NJ: Lawrence Erlbaum.

Hayes, J.R., & Flower, L. (1980). Identifying the organization of writing processes. In L. Gregg & E.R. Steinberg (Eds.), *Cognitive processes in writing* (pp. 3-30). Hillsdale, NJ: Lawrence Erlbaum.

Kamberelis, G. (1999). Genre development and learning: Children writing stories, science reports, and poems. Research in the Teaching of English, 33, 403-460.

Lane, K. L., Harris, K., Graham, S., Driscoll, S., Sandmel, K., Morphy, P., Hebert, M., ... Schatschneider, C. (2011). Self-Regulated Strategy Development at Tier 2 for Second-Grade Students With Writing and Behavioral Difficulties: A Randomized Controlled Trial. *Journal of Research on Educational Effectiveness, 4,* 4, 322-353.

Lane, K., Graham, S., Harris, K., Little, M., Sandmel, K., & Brindle, M. (2010). Story Writing. *The Journal of Special Education, 44,* 2, 107-128.

Lane, K. L., Harris, K. R., Graham, S., Weisenbach, J. L., Brindle, M., & Morphy, P. (2008). The Effects of Self-Regulated Strategy Development on the Writing Performance of Second-Grade Students with Behavioral and Writing Difficulties. *Journal of Special Education, 41,* 4, 234-253.

Lienemann, T. O., Graham, S., Leader-Janssen, B., & Reid, R. (2006). Improving the Writing Performance of Struggling Writers in Second Grade. *Journal of Special Education, 40,* 2, 66-78.

MacArthur, C. A. (2011). Strategies instruction. In K.R. Harris, S. Graham, & T. Urdan (Eds.), *Educational psychology handbook, Vol. 3, Applications of educational psychology to*

learning and teaching, (pp. 379-401). Washington, DC: American Psychological

MacArthur, C. A., & Philippakos, Z. (2010). Instruction in a strategy for compare-contrast

writing with students with learning disabilities. *Exceptional Children*, 76, 438-456.

Mandler, J. M., & Johnson, N. S. Remembrance of things parsed: Story structure and recall.

Cognirive Psyhology, 1977, 9, 111-191.

McKenney, S. E., & Reeves, T. C. (2012). *Conducting educational design research*. New

York: Routledge.

Mikulecky, L. (1998). Adjusting school writing curricula to reflect extended workplace

writing. In M. S. Garay & S. A. Bernhardt (Eds.), *Expanding literacies: English

teaching and the workplace* (pp. 201-223). Albany: State University of New York

Press.

Moore, B. H., & Caldwell, H. (1993). Drama and Drawing for Narrative Writing in Primary

Grades. *Journal of Educational Research, 87,* 2, 100-10.

National Center for Education Statistics (2011). *National assessment of educational progress*.

Retrieved from http://nces.ed.gov/nationsreportcard/naepdata/

National Commission on Writing in America's Schools and Colleges. (2003). *The neglected

"R": The need for a writing revolution.* New York: The College Board.

Newell, A., & Simon, H. (1972). *Human problem solving*. Englewood Cliffs, N.J.: Prentice-

Hall.

Rumelhart, D. E. (1975) Notes on a schema for stories. In D. G. Bobrow & A. M. Collins

(Eds.), *Representation and understanding: Studies in cognitive science*. (pp. 211-236).

New York: Academic Press.

Newmann, F. M. (1996). *Authentic achievement: Restructuring schools for intellectual quality*. San Francisco: Jossey Bass Publishers.

Neuman, S. B., & Cunningham, L. (2009). The impact of professional development and coaching on early language and literacy practices. *American Educational Research Journal*, 46 (2), 532–566. DOI: 10.3102/0002831208328088.

Nystrand, M. (2006). The social and historical context of writing research. In MacArthur, C. A., Graham, S., & Fitzgerald, J. (Eds), *Handbook of Writing Research* (pp. 11-27). New York: Guilford Press.

Pajares, F., & Valiante, G. (2006). Self-efficacy beliefs and motivation in writing development. In C. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 158–170). New York: Guilford Press.

Pearson, P. D., & Gallagher, G. (1983). The gradual release of responsibility model of instruction. *Contemporary Educational Psychology*, *8*(3), 112-123.

Philippakos, Z. A. (in press). Using a task analysis process for reading and writing assignments. *Paper to appear in the Reading Teacher.*

Philippakos, Z. A. (under review). Effects of self-regulated strategy instruction on the quality of first graders' procedural writing.

Philippakos, Z. A., & MacArthur, C. A. (under review). Integrating collaborative reasoning and strategy instruction to improve second graders' opinion writing

Philippakos, Z. A., & MacArthur, C. A. (2016a). The effects of giving feedback on the persuasive writing of fourth- and fifth-grade students. *Reading Research Quarterly*, 51, 4.

Philippakos, Z. A., & MacArthur, C. A. (2016b). The use of genre-specific evaluation criteria for

revision. *Language and Literacy Spectrum*. 2, 41-52.

Philippakos. Z. A., & MacArthur, C. A. (in preparation). *Developing strategic writers through genre instruction: Resources for grades K-2.* New York: Guilford Press.

Philippakos. Z. A., MacArthur, C. A. & Coker, D. L. (2015). *Developing strategic writers through genre instruction: Resources for grades 3-5.* New York: Guilford Press.

Philippakos, Z. A. & MacArthur, C. A., Munsell, S. (under review). Collaborative reasoning with cognitive strategy instruction for opinion writing in primary grades. *Reading & Writing Quarterly*.

Prior, P. (2006). A sociocultural theory of writing. In C.A. MacArthur, S.Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 54-66). New York: Guilford Press.

Reinking, D., & Bradley, B. (2008*). On formative and design experiments*. New York: Teachers College Press.

Robinson, V. M. J. (1998). Methodology and the research-practice gap. *Educational Researcher*, 27 (1), 17–27.

Rumelhart, D. E. (1980). On evaluating story grammars. *Cognitive Science, 4,* 3, 313-316.

Rumelhart, D. E. (1975). Notes on a schema for stories. In D. G. Brown & A. Collins (Eds.), *Representation and understanding: Studies in cognitive science.* New York: Academic Press.

Saddler, B. (2016). Increasing Story-Writing Ability through Self-Regulated Strategy Development: Effects on Young Writers with Learning Disabilities. *Learning Disability Quarterly, 29,* 4, 291-305.

Snow, C. E. (2015). 2014 Wallace Foundation Distinguished Lecture: Rigor and Realism: Doing

    Educational Science in the Real World. *Educational Researcher, 44,* 9, 460-466.

Simmons, D. C., Kameenui, E. J., Dickson, S., Chard, D., Gunn, B., & Baker, S. (1994).

    Integrating narrative reading comprehension and writing instruction for all learners.

    National Reading Conference, USA, 43, 572–582.

Short, E.J., & Ryan, E.B. (1984). Metacognitive differences between skilled and less skilled

    readers: Remediating deficits through story grammar and attribution training. *Journal of

    Educational Psychology*, 76, 225-235.

Sperling, M. (1996). Revisiting the Writing-Speaking Connection: Challenges for Research on

    Writing and Writing Instruction. *Review of Educational Research, 66,* 1, 53-86.

Sperling, M. (1993). The *social nature of written text: A research-based review and summary of

    conceptual issues in the teaching of writing* (Concept Paper Series). Urbana, IL: National

    Council of Teachers of English.

Stein, N. L., & Glenn, C. G. (1979). An analysis of story comprehension in elementary school

    children. In R. 0. Freedle (Ed.), *Advances in discourse processes (Vol. 2): New directions

    in discourse processing*. Norwood, NJ: Ablex

Stevens, R. J., Van, M. P., & Warcholak, N. D. (2010). The effects of explicitly teaching story

    structure to primary grade children. *Journal of Literacy Research, 42,* 2, 159-198.

Strauss, A., & Corbin, J.C. (1998). *Basics of qualitative research techniques and procedures for

    developing grounded theory* (2nd Ed.). London: Sage.

Tierney, R. J. and Shanahan, T. (1991). Research on the reading-writing relationship:

Interactions, transactions, and outcomes. In R. Barr, M. L. Kamil, P. Mosenthal, and P. D. Pearson (Eds.). *Handbook of reading research, Volume II.* New York: Longman. pp. 246-280.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Watanabe, L. M., & Hall-Kenyon, K. M. (2011). Improving Young Children's Writing: The Influence of Story Structure on Kindergartners' Writing Complexity. *Literacy Research and Instruction, 50,* 4, 272-293.

Zumbrunn, S., & Bruning, R. (2013). Improving the writing and knowledge of emergent writers: the effects of self-regulated strategy development. *Reading and Writing: an Interdisciplinary Journal, 26,* 1, 91-110.

Virtual Writing Feedback as Design

Alicia Kelley

Clemson University

Abstract

This study examines writing feedback in a virtual secondary classroom through the lens of Design. The theoretical framework seeks to envision writing feedback in a different way from more traditional views by placing the power of the Discourse with the student. Survey methodology and open coding enabled an exploration of student and teacher perceptions of writing feedback. Sixteen ninth grade students enrolled in a virtual public school and the accompanying English teacher answered open-ended questions on the survey. Student responses indicated that students felt free to accept or reject teacher feedback on their writing, while the teacher saw implementing feedback as necessary for students to get the grades they wanted. Students also suggested that a primary reason for not using teacher feedback would be because they felt their writing style did not fit well with the teacher's suggested changes. Discussion includes future plans to alter the survey instrument and other aspects of the study before the second pilot begins.

Keywords: writing, feedback, Design, Discourse, secondary

The process of revision is an effective means of improving writing, and most writers move through the revision process quite naturally on their own (Hayes & Flower, 1983; Olson, 1990; van den Bergh, Rijlaarsdam, & van Steendam, 2015). However, in classroom settings teachers often seek to get involved in students' writing processes to help them improve their writing. Typical writing assignments in a language arts classroom follow the pattern labeled by Cazden (2001) as IRE: the teacher initiates a question or prompt, the student responds, and the teacher evaluates that response. Cazden has also suggested an updated version of this concept, labeled IREF, where the last letter represents the teacher giving feedback on the students' responses. Giving this feedback in written form is ubiquitous in writing classrooms across the United States (Bardine, 1999).

The prevailing view in past research has been that writing feedback is a necessary step in helping student writers hone their skills (Ferris, 1997; McArthur, 2015; Stellmack, Sandidge, Sippl, & Miller, 2015). Yet research reveals the troubling reality that much of what teachers write as feedback is unintelligible to students (Chanock, 2000; Hillocks, 1986; Hyland & Hyland, 2001; McArthur, 2015). The word "feedback" itself implies "the transmission of evaluative or corrective information" (Merriam Webster). This term supports the view that teachers control the discourses surrounding writing in the classroom (Cazden, 2001). The conceptualization of feedback as teacher-centered may encourage teachers to blindly comment on student writing without recognizing the student's power to accept, reject, or alter those comments through revision. Recasting writing feedback as a student-centered process restores the power to the writer of the text.

Within the field of writing feedback I am primarily concerned with the unique opportunities and challenges of the virtual high school. Online courses have been offered in

higher education and in some high schools since the advent of the World Wide Web (Chaika, 2005), but the all-inclusive virtual model for primary and secondary schools is a relatively new phenomenon. In 2012, virtual schools housed just under 200,000 of the United States' K-12 student population (Glass & Welner, 2011). That number grew to roughly 315,000 in 30 states by the end of the 2013-14 school year (Smith, 2014). With enrollment numbers at several of the largest virtual schools growing rapidly each year (Smith, 2014), the needs and characteristics of the virtual school student are necessary areas of study. In virtual high schools, teachers must rely on learning management systems and other electronic methods of communication as the primary means of delivering written feedback. Virtual literacy classrooms in particular have the potential to meet unique needs. ILA and NCTE have recommended full integration of information and communication technologies into literacy pedagogy, but Hutchison and Reinking (2011) found that traditional brick and mortar schools were not using these technologies in meaningful ways yet. Virtual schools often have these types of technologies built into a learning management system; therefore students are developing literacy skills mediated by multimodal texts and multidirectional communication technologies. The virtual school is a location from which to explore how students are developing writing skills in an academic world that uses technology in diverse, meaningful ways.

Helpful feedback is that which the student incorporates to make writing clearer and more effective in the eyes of its audience. In order for feedback to be meaningful to students, it must be clear, actionable, and focused on developing students' ability to "self-evaluate" their writing (McArthur, 2015, p. 275). Current research has explored student and teacher perceptions of writing feedback in limited settings such as ESOL classrooms and higher education courses (Ferris, 1997; Hyland & Hyland, 2001; Ruegg, 2015; Straub, 1997), but the field of study

focusing on virtual feedback from teachers is still small. In addition, no studies have examined writing feedback in virtual secondary schools. The unique environment of a fully online school coupled with the rapid growth of these schools in the United States make understanding student needs in this setting important. In addition, writing feedback has been framed as a primarily teacher-centered activity (Cazden, 2001). However, some studies suggest that students may enact more power over this process than previously thought (Smidt, 2002). In the following section I explore the possibility of using the framework of Discourse and Design to reimagine power within the writing feedback cycle. The purpose of this study is to understand how teachers and students in virtual secondary schools understand the purposes of writing feedback and how they are using it to propagate or push back on the prevailing discourses present in their academic environments. The following research questions will explore these ideas:

- How are teachers and students in virtual secondary schools navigating the discourses present in virtual writing feedback?

- How are students Designing writing feedback to align with their own discourses or to create new discourses?

Although this research may prove useful to establishing best practices in virtual schools, the findings may have broader applications as well due to the movement toward electronic writing feedback in other secondary school environments.

Literature Review: Building a Theoretical Framework

This section will establish a framework through which to view writing feedback. A brief review of relevant literature will provide an overview of the concepts of Discourse and Design as they relate to writing and writing feedback.

Writing as Discourse

Writing is a key method by which individuals connect to society (Bakhtin, 1986). Gee (2011) explains this societal dialogue as Discourse. Discourses fluctuate and change based on many factors including the social context and roles of power present in the discourse. Adolescents must navigate a variety of discourses each day, including academic, home, and peer discourses. In academic environments, specifically literacy classrooms, writing is even more centralized. Writing is often a form of academic socialization, a term expanded by Duff (2010) into a theory meant to explain the ways schools seek to indoctrinate students. Students are exposed to discourses meant to teach them "the pragmatics. . .of showing respect. . .[as well as] ideologies of respect, including aspects of social stratification, ranks, roles, and values" (Duff, 2010, p. 173). But students choose how they respond to this socialization; they may accept or reject these discourses based on their values and backgrounds (Duff, 2010). Nordmark (2017) asserts that students take on a variety of roles while writing, ranging from full independence and confidence to fully collaborative and lacking in confidence. Students may shift between these roles in different situations for varying purposes, and the resulting writing may change based on the roles taken. In all of these roles, however, students are actively engaged in these discourses surrounding their writing.

Smidt (2002) conducted a large study of 100 upper secondary students taking Norwegian language arts classes similar to an English language arts class in the U.S. He expands on the idea of discourse by taking on a term originated by Lotman (1990): semiosphere. Smidt's concept of semiosphere is useful to describe human interaction and how human beings communicate with roles and rules while actively changing and stepping outside of these rules as well. He further uses this idea to explain how discourse communities are fluid; students are not just changing

roles between writer and reader, but they are changing roles as they write for different purposes and within different genres. Student writing is dynamic, discourse-oriented, and situated in a larger semiosphere. Within this larger framework, a common practice in academic writing environments is for teachers to give feedback on student writing. This process could also be conceived of as a discourse and as the interaction of multiple discourses. The next section will discuss writing feedback as discourse and the varying views on how teachers and students navigate these discourses.

The Writing Feedback Cycle as Discourse

Writing feedback is an almost ubiquitous element of writing in language arts classrooms (Cazden, 2001; McGrath & Atkinson-Leadbeater, 2016). Feedback affects attitudes toward writing (Zacharias, 2007) and has the potential to affect writing ability, and therefore it is a necessary part of writing instruction (Graham, Berninger, & Fan, 2007). In the view of teachers, the ideal process would mimic Cazden's (2001) IREF model in a cyclical fashion: teachers provide specific comments on student writing, and students use the feedback according to the teacher's original intent to revise their writing (Beason, 1993; Ferris, 1997). This recursive process does fit the idea of discourse, though the teacher arguably holds more of the power in the written "conversation" that occurs.

Much of this process relies on students understanding the feedback and desiring to implement it. Research has found that to be effective, feedback must be detailed, student-focused, and intended to help students to improve their writing (Bandura, 1989; Zimmerman & Bandura, 1994; Zumbrunn, Marrs, & Mewborn, 2016). But student and teacher perceptions of writing feedback can differ. Bardine (1999) found that students in a sophomore high school English course read comments carefully and sought to understand them. They saw these

comments as a source of dialogue, or discourse, on the quality of their writing. McGrath and

Atkinson-Leadbeater (2016) interviewed first year university students to discover student views

of electronic feedback and to hear how these students were using the feedback. The researchers

use the term "engage" throughout the study to describe what students do with instructor

feedback. This term implies that interaction, and potentially discourse, is occurring not just

around feedback but actually through the feedback itself. Just as in verbal discourses, students

and teachers can misunderstand each other. Students especially may have strong feelings about

their writing, and a teacher's comments on that writing can be helpful, confusing, or frustrating

(McGrath & Atkinson-Leadbeater, 2016). These complications may be harder for students to

take because writing itself can be conceived of as Design: a process by which student writers are

actively engaged in producing a product that is in some ways an extension of themselves and

their identities. The following section further explores the concept of writing as Design.

Writing as Design

        Human beings are a social species who use language as a primary mode of

communication. Language use is "personal, cognitive, affective, and social" (Kress, 2000, p.

156). Individuals write for these same purposes. The New London Group (2000) conceptualized

the writing process as Design. In Design, an individual takes Available Designs, which in this

case would be words, grammatical structures, and thoughts, and Designs them through complex

processes. Available Designs are Redesigned into a new text. This concept fits with previous

models of the writing process; for example Hayes and Flower (1983) sought to analyze the

cognitive steps a writer goes through to complete a text, demonstrating that writers take on

complex tasks for various reasons and impart their own purposes and personality into their

writing. Returning to Smidt's (2002) study, evidence of student Designing can be seen in how

two students within the larger study navigated assigned genres of writing in their writing. Smidt recognized that even though students encounter required writing prompts in academic settings, they ultimately decide how they will approach the writing task. Indeed, in this study the students' own stated discourse roles dictated how they Designed on the available writing prompts. One student, who had positioned herself as a literary writer and political activist, pursued writing activities and perspectives that allowed her to take on these roles. Another student, who felt reluctant to write in any context, consistently chose the simplest and most well-defined writing task available. The students in this study held true to their writing identities through several years of writing instruction.

Orr and Blythman (2002) found similarities between the writing process and design as well. Though they looked at design through a narrow lens as a field connected to art and fashion, the principles of Design are present in their analysis as well. Both writing and design use human creativity and organization to craft an idea; they also usually result in some sort of object or work crafted with the help of tools. Though studies have conceptualized writing in ways that mimic the process of Design, few studies have framed the process of writing feedback the same way. This study seeks to broaden the framework of Design to the realm of writing feedback.

The Writing Feedback Cycle as Design

Once teachers begin commenting on student writing, a new discourse is begun. Students could simply write texts on their own, using Available Designs that they choose and experiencing the intertextuality that naturally occurs when a writer begins to put words on paper, but teacher feedback is unique in that there is a fundamental disparity of power between teacher and student. Cazden (2001) accurately describes the typical format of teacher feedback in a process labeled IREF: the teacher initiates a writing assignment, the student responds, and the

teacher evaluates and gives feedback to the student. Other studies have confirmed the reality of this concept (Bardine, 1999; Smidt, 2002). But while the basic structure of an academic writing assignment may look teacher-focused, a closer look at how students view and use feedback may reveal that students are central in this process. Cazden herself acknowledged this possibility by including an "alternative interpretation" of how a mismatch between school and community discourses can cause problems for students (2001, p. 74). In the referenced study, the researcher posited that students were not just misunderstanding the teacher's attempts at communication; they were actively asserting their right to their own communication styles (Malcolm, 1982, in Cazden, 2001). Duff (2010) suggests that all academic discourse is "dialogic, not monologic" (p. 170). Students at least have the power to determine how they will respond to a teacher's communication, even if the teacher makes concerted efforts to maintain power in the classroom (Duff, 2010).

Cazden (2001) noted that within in-person writing conferences, students gained confidence and power in the ways they discussed their writing with teachers as they spent more time in the class. If students hold the locus of power in the writing process, as previously shown, and in the feedback process they choose how they respond to the feedback, then a logical hypothesis might be that students are able to wield power in how they accept, alter, or reject teacher feedback. Just as writing is seen as Design, The New London Group's (2000) concept of Designs of meaning offers potential as a means of understanding writing feedback discourses among teachers and students. Available Designs could be conceived as the writing feedback itself, given by teachers on student work. But "[designing] will never simply reproduce Available Designs" (New London Group, 2000, p. 76). The student, then, takes on the process of Designing, implementing or rejecting the teacher's suggested revisions in a variety of ways.

The teacher designs as well, offering comments based on a separate perception of the student's text. Finally, the new text emerges as the Redesigned. This approach reflects the model of the writing process itself suggested by Hayes and Flower (1983) in which writers, and therefore students, control their writing and decide when and where to make changes. This process is not simply an extension of the writing process; writing feedback is a discourse in itself between the teacher and student.

Smidt (2002) observed that the ways in which the writing teacher framed his comments toward each of these students suggested he understood the students' positions and tailored his commentary on their writing toward the students' chosen discourses. The teacher had chosen to give up some of his perceived power as the teacher to acknowledge the central position of his students as writers. In this research the concept of student participants as Designers of feedback is present, though Smidt did not use this specific theoretical lens to explain the data he collected. Stellmack, Keenan, Sandidge, Sippl, and Konheim-Kalkstein (2012) studied the effects of writing feedback on student papers in an undergraduate psychology course. Students revised their drafts based on self-critiques, feedback from peers, or feedback from instructors. Blind graders and the instructors scored the papers; roughly half of the draft scores for the revised versions rose the same amount for each student who revised, regardless of the feedback source. These findings could support the concept of the student acting as the controlling agent in each of the scenarios.

A study of another group of undergraduate writers by Straub (1997) supports this view as well. The students in this study were asked to rate their teachers' comments on their writing. Straub used narrow categories to identify the types of comments teachers gave, including imperatives, criticisms, praise, advisory comments, and open or closed questions. Results

showed that students were not opposed to hearing teachers' opinions on their writing as long as teachers worded their comments in such a way as to acknowledge this less powerful position. Students in Straub's study also wanted teachers to exhibit specificity in their comments, which would enable students to more accurately decide if and how they would address the comments. Findings from this much earlier study seem to corroborate the idea that students are opposed to teachers' pushing their power on them in harsh or critical ways. What they wanted from the teacher was advice, and by its very nature advice can be acted upon or ignored. As one student aptly stated, "Teachers are for guidance in the subject, not to rip everything apart" (Straub, 1997, p. 108).

It is important to note that this framework does not attempt to completely disregard the key role that a teacher can play as a writing mentor for students. Teacher feedback is important because 1) discussing a writer's piece with others may help some writers who learn better with more human interaction polish their writing and 2) students still need training in navigating the Discourses of power associated with certain literacy skills (Delpit, 1995; New London Group, 2000). Well-trained teachers of literacy can help students navigate these Discourses; this assistance is especially beneficial for marginalized populations that may not have equal access to wealth and power in society. Nonetheless, in this age of new literacies and postFordism, the teachers' role must be more that of a mentor to guide students toward access through literacy skills while simultaneously giving students the power to have "critical engagement" with the Discourses around them (New London Group, 2000, p. 13).

This study aims to examine discourses and evidences of power as they are displayed through the Designing that students and teachers do in the feedback cycle. While these concepts are important to explore in traditional face-to-face school settings, the advent of virtual schools

has created a new location in which students and teachers may interact differently. The next section will examine the implications of studying writing feedback through this theoretical lens in a virtual school environment.

Writing Feedback as Student Design in a Virtual Environment

In brick and mortar schools, written feedback has traditionally been given as notes on students' papers, but electronic feedback is now commonplace in these environments as well. Virtual feedback may have some benefits, such as being perceived as more convenient by students and providing a method for teachers to write longer, more detailed comments (McCabe, Doerflinger, & Fox, 2011; McGrath & Atkinson-Leadbeater, 2016). Writing itself cannot be separated from technology; indeed the earliest writing involved a tool to facilitate the act of writing. Haas (1996) argues that technology has consistently transformed communication and writing itself. Most importantly, feedback given by virtual means could destabilize traditional power structures in the classroom. Cazden (2001) points to the work of Quinn, Mehan, Levin, and Black (1983), in which a course mediated by electronic communication reduced the effects of teachers' maintaining control over classroom discourses. This reduction in teacher centrality could possibly be seen in virtual writing feedback as well. The virtual environment, then, must be considered as an integral part of the writing process when researching writing in this context.

To begin understanding these complex ideas within the theoretical framework of discourse and design, this study focused on student and teacher perceptions of writing feedback in a virtual environment. Asking these two groups to share their observations and feelings surrounding the process gives them their own voices in explaining the phenomenon and allows the theory to develop naturally around the participants' own words. While studies have analyzed student perceptions of writing feedback, the data often focused on higher education (Stellmack et

al., 2012; Straub, 1997; Watson & Lacina, 2002; Zumbrunn, Marrs, & Mewborn, 2016).

Zumbrunn, Marrs, & Mewborn (2016) extended the research of Ekholm, Zumbrunn, & Conklin

(2015) into middle and high school classrooms but still focused solely on students. Two studies

have also included data on how teachers perceive the feedback they give (Zacharias, 2007;

Montgomery & Baker, 2007). Montgomery and Baker (2007) explored perceptions of ESOL

students and their teachers along with the teachers' feedback on writing. They concluded that

some teachers were unaware of differences in their feedback perceptions versus their students'

perceptions. Teachers were also unaware of the amount and types of feedback they gave. This

lack of awareness could cause breakdowns in the feedback process and could point to the fact

that teachers assume they maintain a powerful role in a process that may actually give more

power to the student writer. Thus including teachers as part of this study is important to enable a

deeper analysis of the discourses of power that may be at play in this process.

When comparing writing feedback in written form to feedback in virtual form, some key

similarities and differences emerge. In general, writing itself may be different on the computer

than on paper. Kimmons, Darragh, Haruch, and Clark (2017) found that 8th grade student essays

were longer and more complex when written on computer. Virtual feedback differences exist as

well. Virtual feedback is generally perceived as more convenient than paper-based feedback

(McCabe, Doerflinger, & Fox, 2011; McGrath & Atkinson-Leadbeater, 2016).

This study explores writing feedback as student-led Design by analyzing teacher and

student perceptions and uses of writing feedback. The following sections will outline the

preliminary study's methods and results, the next steps planned for this study, and the

importance of this study within the field of literacy.

Preliminary Study

Research Design

This study explored the following research questions:

- How are teachers and students in virtual secondary schools navigating the discourses present in virtual writing feedback?

- How are students Designing writing feedback to align with their own discourses or to create new discourses?

To answer the above questions, I addressed the following subquestions:

- What constitutes feedback on writing?

- What discourses are present in writing feedback?

- How does giving writing feedback in a virtual environment affect teacher and student perceptions of that feedback?

  Because my research questions are focused on the perceptions of teachers and students surrounding this topic, I chose qualitative survey methods to gather data. The pilot study was meant to hone the survey itself and the theoretical framework (Jansen, 2010). The focus of the study is on the discourses of power present in feedback interactions, so survey questions were open-ended to allow individual voices to communicate their perceptions of feedback. The setting for this study was a virtual charter school in South Carolina. The participants were 192 students enrolled in English I and their teacher. Surveys were designed and administered through Qualtrics and consisted of mostly open-ended questions to encourage participants to answer in their own words. The teacher and 16 students responded for an 8% response rate. Though this response rate is lower than some previous web-based surveys by Dillman (2013), Weaver (2006)

had an 8% response rate to a similar survey with college students researching perceptions of

tutors' written feedback. I used In Vivo coding to analyze the student and teacher responses. This

type of coding was important to convey students and teacher voice, thus aligning to the

theoretical framework of Discourse and Design.

Results

      Students answered questions regarding their perceptions of feedback and concepts of

choice with feedback they receive. When asked the main purpose for teacher feedback on

writing, student responses included for "advice," to give an "opinion," and to "help [students]

understand." Another survey question asked if students believe they have a choice to use

feedback in their writing. Student responses included the following:

      It is "solely the student's decision"

      "of course I have a choice!"

      When asked the primary reason students use feedback, one student stated feedback could

"improve" writing. A subsequent question asked the primary reason students would not use

feedback. Two responses stated that students may not use feedback if they "want to remain

unique in their writing" or "have a unique writing style." Two students expressed a desire to see

fewer positive comments; none stated they wanted more positive comments.

      The teacher answered similar questions on the survey. The teacher's perceived main

purpose for feedback was to "give concrete ideas" and "suggestions." When asked if students

had a choice to use teacher feedback, the teacher responded "no." She posited that students may

feel they "must do it OUR WAY." According to the teacher, the primary reason students use

feedback is to work toward "getting an acceptable grade," and the primary reason they would not

use the feedback is because they "don't want to take the time and effort to figure out what they

need to do differently." In relation to the idea of positive comments, the teacher expressed regret that in the small feedback box (with space for only 1,000 characters) sometimes there was not "much room to praise the student for what he or she did RIGHT," and students might find that fact "discouraging."

A comparison of the student and teacher results reveals what seem to be significant differences in how the teacher and students perceived the feedback process. Students felt they had a great amount of choice; the teacher thought the students felt they did not have a choice. Some students asked for fewer positive comments; the teacher wanted to find space for more positive comments. And while the teacher thought the students were required to use the feedback if they wanted to see an impact on their grade, students instead stated there were legitimate reasons a student could choose to ignore teacher feedback. Those reasons were directly related to student efficacy and their identities as writers. These findings corroborate the findings of Cazden (2001) in which the teacher felt the position of initiator of the feedback process and the ultimate authority on whether students used teacher feedback appropriately. And yet the students' insistence on maintaining autonomy also confirms the results of Smidt (2002) where students feel their writer identities strongly. Thus, these pilot study results suggest that perhaps both the students and teacher in this study see themselves as Designers of meaning in the feedback cycle.

Next Steps

Following the initial data collection and analysis, I presented the results at the 2017 American Reading Forum Annual Conference in an Advancing Literacy session. The session allowed for discussion surrounding the study, which centered on two key questions:

- How effective is the framework of Design for explaining the feedback process?

- What changes could be made to the survey questions to align them more closely to the overarching research questions of the study?

The researchers present at the session provided helpful input and discussion. They agreed that the initial framework of Design and the virtual school setting were interesting. However, we agreed that a higher response rate could yield more robust data for analysis. Based on the general discussion and some specific feedback I received on individual survey questions, I am planning a second pilot study with several changes. First, I am adding an incentive to the survey procedures. Dillman (2013) more than doubled response rates when adding even small incentives to web-based surveys, so this strategy should boost participation. In addition, I suspected survey fatigue after noticing that several student respondents started the survey but stopped answering after answering the first three or four open-ended questions. Based on the theoretical framework of Design and Discourses of power, I chose to eliminate open response survey questions that did not directly relate to the larger ideas of power and student or teacher Design. This second pilot will be distributed in the spring semester of 2018 once the IRB amendment approval process is complete.

Importance of Future Study

This study holds importance for the field of literacy for two reasons. First, virtual feedback is becoming more prevalent according to Cope et al. (2011); therefore new ways of thinking about feedback in this medium need to be developed. Secondly, the virtual environment may change the way researchers and educators view Discourse in the classroom. The features of asynchronous dialogues are fundamentally different from synchronous conversations teachers have with students about pieces of writing (Cope et al., 2011). Quinn, Mehan, Levin, and Black (1983) posit that this type of educational situation may reduce teacher control. More recently

Nordmark (2017) found that virtual education may or may not break out of the "classroom-as-container" discourse (p. 58). The conversation surrounding teacher-student discourses of power is one that is not yet settled and deserves further study. Analyzing digital, asynchronous feedback from student and teacher perspectives will offer valuable insight into these relationships and discourses.

References

Bakhtin, M. (1986). *Speech genres and other late essays* (C. Emerson and M. Holquist, Eds.; V.

W. McGee, Trans.). Austin: University of Texas Press.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*(9),

1175-1184. doi:10.1037/0003-066X.44.9.1175

Bardine, B. A. (1999). Students' perceptions of written teacher comments: What do they say

about how we respond to them? *High School Journal, 82*(4), 239-247.

Beason, L. (1993). Feedback and revision in writing across the curriculum classes. *Research in

the Teaching of English, 27*(4), 395-422. Retrieved

from http://www.jstor.org/stable/40171241

Cazden, C. (2001). *Classroom discourse*. Portsmouth, NH: Heinemann.

Chaika, G. (2005). *Virtual high schools: The high schools of the future?* Retrieved

from http://www.educationworld.com/a_curr/curr119.shtml

Chanock, K. (2000). Comments on essays: Do students understand what tutors write? *Teaching

in Higher Education, 5*(1), 95-105. doi:10.1080/135625100114984

Cope, B., & Kalantzis, M. (2000). Designs for social futures. In B. Cope, & M. Kalantzis

(Eds.), *Multiliteracies: Literacy and the design of social futures* (pp. 203-234). New

York, NY: Routledge.

Delpit, L. (1995). *Other people's children: Cultural conflict in the classroom*. New York, NY:

New Press.

Dillman, D.A. (2013). *Achieving synergy across survey modes: Mail contact and web responses*

    from address-based samples. Retrieved from

    http://www.papor.org/files/2013/annlconf/ShortCourse%20-%20Dillman.pdf

Duff, P. A. (2010). Language socialization into academic discourse communities. *Annual Review*

    of Applied Linguistics, 30, 169-192.

Ekholm, E., Zumbrunn, S., & Conklin, S. (2015). The relation of college student self-efficacy

    toward writing and writing self-regulation aptitude: Writing feedback perceptions as a

    mediating variable. *Teaching in Higher Education, 20*(2), 197-207.

    doi:10.1080/13562517.2014.974026

"Feedback" (n.d.). Retrieved from https://www.merriam-webster.com/dictionary/feedback

Ferris, D. R. (1997). The influence of teacher commentary on student revision. *TESOL*

    Quarterly, 31(2), 315-339. Retrieved

    from http://www.ingentaconnect.com/content/tesol/tq/1997/00000031/00000002/art00006

Glass, G. V., & Welner, K. G. (2011). *Online K-12 schooling in the U.S.: Uncertain private*

    ventures in need of public regulation. Boulder, CO: National Education Policy Center.

Graham, S., Berninger, V., & Fan, W. (2007). The structural relationship between writing

    attitude and writing achievement in first and third grade students. *Contemporary*

    Educational Psychology, 32, 516-536. doi:10.1016/j.cedpsych.2007.01.002

Haas, C. (1996). *Writing technology: Studies on the materiality of literacy*. New York-London:

    Routledge.

Hayes, J. R., & Flower, L. S. (1983). *A cognitive model of the writing process in adults: Final report*. National Institute of Education.

Hillocks, G. (1986). *Research on written composition: New directions for teaching*. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills.

Hutchison, A. & Reinking, D. (2011). Teachers' perceptions of integrating information and communication technologies into literacy instruction: A national survey in the United States. *Reading Research Quarterly*, *46*(4), 312-333. Doi:10.1002/RRQ.002

Hyland, F., & Hyland, K. (2001). Sugaring the pill: Praise and criticism in written feedback. *Journal of Second Language Writing, 10*, 185-212.

Jansen, H. (2010). The Logic of Qualitative Survey Research and its Position in the Field of Social Research Methods. *Forum: Qualitative Social Research, 11*(2).

Kimmons, R., Darragh, J. J., Haruch, A., & Clark, B. (2017). Essay composition across media: A quantitative comparison of 8th grade student essays composed with paper vs. Chromebooks. *Computers & Composition, 44*, 13-26. 10.1016/j.compcom.2017.03.001

Kress, G. (2000). Design and transformation: New theories of meaning. In B. Cope, & M. Kalantzis (Eds.), *Multiliteracies: Literacy and the design of social futures* (pp. 153-161). New York, NY: Routledge.

Lotman, J. (1990). *Universe of the mind: A semiotic theory of culture*. London: Tauris.

Malcolm, I. (1982). Speech events of the Aboriginal classroom. *International Journal of the Sociology of Language*, *1982*(36), 115-134.

McArthur, C. A. (2015). Instruction in evaluation and revision. In S. Graham, & J. Fitzgerald

（Eds.), *Handbook of writing research, 2nd edition* (pp. 272-287). New York, NY:

Guilford.

McCabe, J., Doerflinger, A., & Fox, R. (2011). *Student and faculty perceptions of E-feedback.*

Los Angeles, CA: SAGE Publications. doi:10.1177/0098628311411794

McGrath, A., & Atkinson-Leadbeater, K. (2016). Instructor comments on student writing:

Learner response to electronic written feedback. *Transformative Dialogues: Teaching &*

Learning Journal, 8(3), 1-16.

Meyer, M. (2001). Between theory, method, and politics: Positioning of the approaches to CDA.

In R. Wodak, & M. Meyer (Eds.), *Methods of critical discourse analysis* (pp. 14-31).

London: SAGE Publications.

Montgomery, J. L., & Baker, W. (2007). Teacher-written feedback: Student perceptions, teacher

self-assessment, and actual teacher performance. *Journal of Second Language*

Writing, 16(2), 82-99. doi:10.1016/j.jslw.2007.04.002

The New London Group. (2000). A pedagogy of multiliteracies: Designing social futures. In B.

Cope, & M. Kalantzis (Eds.), *Multiliteracies: Literacy and the design of social*

futures (pp. 9-37). New York, NY: Routledge.

Nordmark, M. (2017). Writing roles: A model for understanding students' digital writing and the

positions that they adopt as writers. *Computers and Composition, 46*, 56-71.

doi:10.1016/j.compcom.2017.09.003

Olson, V. L. B. (1990). The revising processes of sixth-grade writers with and without peer

      feedback. *The Journal of Educational Research, 84*(1), 22-29.

Orr, S., & Blythman, M. (2002). The process of design is almost like writing an essay. *The*

      Writing Center Journal, 22(2), 39-54.

Quinn, C. N., Mehan, H., Levin, J. A., & Black, S. D. (1983). Real education in non-real time:

      The use of electronic message systems for instruction. *Instructional Science, 11*(4), 313-

      327. doi:10.1007/BF00137292

Ruegg, R. (2015). The relative effects of peer and teacher feedback on improvement in EFL

      students' writing ability. *Linguistics and Education, 29*, 73-82.

      doi:10.1016/j.linged.2014.12.001

Smidt, J. (2002). Double histories in multivocal classrooms: Notes toward an ecological account

      of writing. *Written Communication, 19*(3), 414-443.

Smith, D. F. (2014). *7 telling statistics about the state of K–12 online learning*. Retrieved

      from http://www.edtechmagazine.com/k12/article/2014/11/7-telling-statistics-about-

      state-k-12-online-learning

Stellmack, M. A., Keenan, N. K., Sandidge, R. R., Sippl, A. L., & Konheim-Kalkstein, Y. L.

      (2012). Review, revise, and resubmit: The effects of self-critique, peer review, and

      instructor feedback on student writing. *Teaching of Psychology, 39*(4), 235-244.

Stellmack, M. A., Sandidge, R. R., Sippl, A. L., & Miller, D. J. (2015). Incentivizing multiple

      revisions improves student writing without increasing instructor workload. *Teaching of*

      Psychology, 42(4), 293-298.

(1997). Students' reactions to teacher comments: An exploratory study. *Research in the Teaching of English, 31*(1), 91-119.

van den Bergh, H., Rijlaarsdam, G., & van Steendam, E. (2015). Writing process theory: A functional dynamic approach. In S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research, 2nd edition* (pp. 57-71). New York, NY: Guilford.

Watson, P.A. & Lacina, J.G. (2002, April). Teachers of writing as writers: Examining attitudes and informing practice through action research. Paper presented at the meeting of the American Educational Research Association Conference, New Orleans, LA.

Weaver, M. R. (2006). Do students value feedback? student perceptions of tutors' written responses. *Assessment & Evaluation in Higher Education, 31*(3), 379-394. 10.1080/02602930500353061

Zacharias, N. T. (2007). Teacher and student attitudes toward teacher feedback. *RELC Journal, 38*(1), 38-52. doi:10.1177/0033688206076157

Zimmerman, B. J., & Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal, 31*(4), 845-862. doi:10.3102/00028312031004845

Zumbrunn, S., Marrs, S., & Mewborn, C. (2016). Toward a better understanding of student perceptions of writing feedback: A mixed methods study. *Reading and Writing, 29*(2), 349-370. doi:10.1007/s11145-015-9599-3

We make the road by talking: Collaborative teacher education, literacy research, and

direct action through an ethic of mutual aid

George L. Boggs and Celicia L. Bell, Florida State University

Nik Heynen, University of Georgia

Abstract

Student community engagement represents an important setting where the languages and habits of mind of academic disciplines often come into contact with discourses of struggle, resistance, and injustice. A literacy researcher and geography professor ask how intentional dialogue across disciplinary, administrative, and other boundaries affords and constrains realization of critical pedagogies of local engagement. Longitudinal research on postsecondary service-learning geography instructors and students examines interlocking cycles of reflection—our own, our students', and others—driven by inter-discursive tension and synergy and suggests how content area and pedagogical frameworks complement one another in efforts to resist structural causes of poverty.

Keywords: *service-learning pedagogy, democratic education, talk, collaboration, 21st century literacies*

Competing visions for a common good suffuse contemporary secondary and postsecondary education and complicate the widely acknowledged need for teachers, students, administrators, families, and communities to build "cultural cohesion" (Leonard, 2011, p. 987) toward goals shared among schools and communities. A disastrous 'close-enough' has surfaced: Teachers' ability to move the needle on students' K-12 test scores and postsecondary job placement somehow roughly approximates fighting the effects of structural racism and classism despite restricting vital elements of the curriculum (Milner, 2014). Urban teachers are publicly challenging this reductive approach, often by arguing that the problems of urban teaching and learning cannot be separated from the communities in which they live and work (Author A and colleague, 2016).

Literacy research and teacher education that explores urban education through partnership with human geography education offers some new possibilities for thinking about accountability in ways that expand far beyond individual student performance, to include the sovereignty of urban communities (Mitchell, 2003). Working together in and through these three disciplinary groundings can strengthen the resolve to resist cheap surrogates for meaningful learning, even when these interdisciplinary, partnership-based alternatives appear fragmented, move at a glacial pace, and often require toilsome maintenance. This paper explores the radical embracing of accountability in teacher education and literacy education in interdisciplinary terms of

- rich descriptions of student learning and engagement,
- economic welfare *now and in the future* in urban communities that encircle the large university in which the study took place,

- disciplined ways of knowing in human geography, the focal teacher's content area,

- contemporary literacy practices that enable students to interact with their world, and

- socially just relationships with students, teachers, and community partners.

Problem

In this paper we consider the complexities of building and mobilizing partnerships with, not for students, and with, not for teachers—alongside diverse community partners (Freire, 1970, 1998; Milner, 2012). Our roles as researcher and teachers of both service-learning and non-service learning courses motivate us to form partnerships that can adapt and survive, not on the margins, but in meaningful dialogue with others as challenges arise. We write from an attitude of exasperation, hope, and determination about converting educational energy toward the common good during an era of radical and increasing disparities of access.

Numerous obstacles often force individual teachers to bear or reject alone the responsibility of organizing meaningful curricula rooted in community life beyond the classroom (Fraser, 2003). Constructing unifying goals and adapting together over time are epistemic and political work for which few, ourselves included, have the stomach (Valli, Stefanski, & Jacobson, 2014). We are interested in the notion of *partnership* as part of a perennial dilemma about relevance in education: How does inquiry (and by extension a teacher and a discipline) *become* valuable in a community in which it is situated (Zenkov, et al., 2016)?

In our season of collaboration, literacy research and teacher education became

valuable to the work of human geography, and vice versa. Each semester groups of

students coalesced as learning communities. The students placed value on what they

believed the course offered, and members of communities outside the university

evaluated partnership experiences with the university's students and teachers. As we

recount phases of an evolving partnership, the purpose of the study is to argue for careful

consideration of how diverse visions of the common good may be reconciled without

coercion as hallmarks of urban education.

Earnest partnerships that connect with community members outside the school,

with members of other disciplines, with students, and with teachers are essential for

modeling future vitality in urban education. The notion that curricula can, do, or should

prefigure, not just prepare for, improved future realities has deep roots. Apprenticeship

models of instruction abound in high-status fields of science, medicine, and law. At least

since Aristotle, people have conceptualized school as a generative modeling space for

society as it *ought to and will be*, a view that assumes that teachers can engage effectively

in collective action for the common good.

Vygotsky (1987) and others in the sociocultural tradition developed this idea

further, focusing on the role of schooling and cooperative activity in fostering the forms

of consciousness necessary for life in complex modern communities, and helping

organize schooling so that political realities necessary for progress might be embraced or

internalized without coercion (Cole, 2006). Fine-grained discourse practices such as

student-teacher interactions (Cazden, 1988) and broader analyses of home and school

language (González, Moll, &Amanti, 2005; Heath, 1983) have been examined as

domains for enacting meaningful social change, especially regarding problems with the

post-industrial city. Stuckey (1990) and many others have added an important critique, that schooling separated from meaningful social contexts often acts as a sorting tool and a politically expedient surrogate for race- and class-based segregation (Gee, 2007; Lankshear & Knobel, 2007). Contemporary sociocultural research among students and teachers cannot account for the many important factors, however, and so a patchwork is formed of studies seeking critical, culturally sensitive, methodologically ethical approaches to understanding literacy research as partnership.

In the multi-year collaborative project discussed here, we consider how strategic educational partnerships supported materially productive dialogue among university students, teachers, and members of local communities outside the university. Whereas talking is often juxtaposed with action, as theory to practice, we treat talking as a process of becoming that makes possible new forms of action. Our view is rooted in ideas of dialogue as generative action (Buber, 1923) by which groups of people speak phenomena, such as democratic processes (Kim & Kim, 2008) into existence (Horton & Freire, 1998). Talking with others focuses and augments thinking and doing. This assertion, however, does not diminish or overshadow the importance of individual learning and action. Our contention is that despite inevitable exhaustion and exasperation, partnership facilitates talk that constructs new paths for reaching diverse goals embedded in academically rich and community-relevant ways. Talk fosters the socially necessary tasks that drive other literacy practices such as writing and other forms of socially necessary action (Brotton, 1970; Vygotsky, 1987).

Consider the following excerpt from a transcript of class discussions from the second of three iterations of the course:

Claire: We should invite folks from Family and Consumer Sciences.

Terri: That's good, Claire.

[John writes "Family Connection" on board]

Maria: I'm creating a google doc of organizations. I can think of more.

Craig: Anyone not feel comfortable with a class google doc? With the invitations, people really respond better to the paper invitations.

Rachel: Paper? Aww—

John: Who'd take a stab at writing a press release?

Maria: I need to learn how to do that.

Author B: [aside to Maria] I have a shit ton of stuff to help you think about that.

In this brief interchange among six participants and an instructor, the positive effects on student agency of the democratic organization of the course are on display. The instructor (and co-author) facilitates with help that challenges Maria to start where she is, and to *move*. The discussion is shot through with awareness that scholastic activity is accountable to the community, in this case another academic department, although the brainstorming session identified and ultimately included more than a dozen community partners from outside the university.

Theoretical Frame

Reflecting the anthropologist's faith in human resourcefulness, research reported in *Funds of Knowledge* (González, Moll, & Amanti, 2005) was intended to benefit local urban communities near universities in the southwestern United States. The useful interplay between home and academic ways of knowing became visible through humble attention to local labor practices via hundreds of home visits by teachers. A similar

pattern may be seen in Paolo Freire's work in Brazil described in *Teachers as Cultural Workers* (1998) and *Pedagogy of the Oppressed* (1970).

Unfortunately, attention to the interplay among local community needs, teaching, and learning rarely characterizes educational research deeply, even when research invokes the *funds of knowledge* approach. The original Tuscon-based project illustrates the tension between the rich rewards of learning from local problems and the moral and methodological consequences of extracting that knowledge for narrow purposes of school success. The *funds of knowledge* teachers and researchers came to understand the vulnerability of local economies and understood the centrality of economic stability in growing and preserving funds of knowledge, yet they could not take responsibility for the totality of the problem they outlined. They argued that "labor histories are critical in the production of funds of knowledge" (González, Moll, & Amanti, 2005, p. 26), and that "individuals gain funds through work and through participation in labor markets" (p. 57), yet treated the funds as capital that teachers ought to help children trade upon for school success. The research team observed a trend toward decreased community sovereignty as diverse artisanal knowledge was homogenized through low-wage occupations serving the booming housing market, for instance. On this side of the housing crisis, the "paradox" (p. 57) for funds of knowledge might more aptly be called a moral and instructional problem to which teachers and researchers are accountable along with the communities seeking to redevelop knowledge resources gained and lost over centuries.

A *funds of knowledge* approach informs this research theoretically and methodologically by directing our view beyond teacher knowledge and practice first to

the situated knowledge and practices of students and second to the possibilities for shared

knowledge and action in partnership with members of urban communities located near

the university. Pedagogical work and research are framed as sustained efforts to tap into

students' and communities' funds of knowledge. The "tapping in" is not unilateral

however, but rather a co-mediating process that results in fundamental changes in how

teachers and researchers think and act. We hope to extend the funds of knowledge

approach, originally developed in an elementary setting, to explore university students'

and teachers' use of diverse meaning-making resources in educational settings that use

community engagement to advance interdisciplinary learning.

Method

We used design-based research to explore the theoretical principle of

collaboration and partnership in human geography education and teacher education (at all

levels, teaching, research, community action). The research question guiding the evolving

design goals was "How do mutual aid-based research partnerships benefit student

learning in a university urban activism course?" The goals of this design research

experiment (Collins et al., 2004; Brown & Campione, 1996) were to adapt literacy

research to support instructors' specific goals as part of an investigation of the role of

literacy in developing students' ability to participate in complex adult life in the 21st

century (Gee, Hull, & Lankshear, 1996). The human geography instructor's goals

focused on facilitating local direct action informed by human geography learning and

mutual aid-based principles of nonhierarchical collaboration. The literacy researcher's

goals concentrated on understanding how discussion about course goals—especially

community-oriented action—influenced students' engagement in and understanding of

situated literacy practices. The research team set up literacy research to respond to opportunities present in the teaching and learning setting. In the first phase, the focus was on deepening shared understanding of how students made sense of the course. One year later, a second phase focused on documenting new patterns of student engagement following strategic revision of course activities. Again, one year later, a third phase involved an attempt to build on and investigate literacy development patterns observed in the second phase.

Context

With its massive university, vibrant local food system, and many cultural and natural resources, Amesville (pseudonym), Georgia keeps getting its home county promoted in the ranks of the poorest in America, making it a city of glaring contradictions and opportunities. We (the authors) moved to the city within a few years of each other but from different places in the United States, at different stages of our careers, imagining different roads shaped by different disciplinary origins and many other factors for engaging with our students in contexts of local struggle. The setting of the Urban Food Collective course changed from design phase to design phase based on place, time, and people (students, instructors, researchers, community).

Instructor/researcher. Author A was a graduate student throughout the period of the study; he enrolled in the course twice and played the role of participant-observer. Author B was primarily concerned with teaching the UFC courses, but his participation in the research began to evolve as results from the first phase of research emerged. Authors A and B had very different research positionalities owing to their employment status, age, and experience in the field of geography, university, and community engagement

settings. Author A was participant observer in phase 1 and 2, co-instructor in phase 3.

Author A shared Author B's teaching goals through common interest in student-driven,

experiential education as well as local food system issues.

Author B originally designed his course to interrupt and provide an alternative to

school-as-usual through an anti-school atmosphere. His approach was intended to

embody anarchist principles: affinity-based (rather than coerced) grouping of people;

direct action rather than use of established, official political channels to press for social

change; nonhierarchical relationships; and prefiguration—living out in a microcosm of

freedoms anticipated on a larger scale in the future. With these commitments, Author B

selected readings, assignments, and classroom organization strategies to create a space

within school in which students might explore nonacademic identity as anti-hunger

activists connected locally to local problems and people through a tradition of radical

urban geography (Bunge, 1974). The goal was for students to earn academic credit for

engagement in community activism informed by human geography inquiry.

Author A's goal was to support Author B's learning about his own teaching and

provide information that would help him make future decisions about the kinds of

literacy practices that supported the kind of work students engaged in during the course.

He undertook this research as a longitudinal, ethnographic investigation, part of which

would eventually become a doctoral dissertation.

Students. As a democratically-organized service-learning course, students in three

semesters of the Urban Food Collective (UFC I-III) negotiated the format, content, and

organization of the course to emphasize consensus-based student decision-making as a

kind of apprenticeship in food activism embedded within the university and scaffolded by

readings from a syllabus and formal discussion. With his students, Author B discussed consensus-based decision-making at length and developed rules with each group of students for consensus-based discussion. Author B positioned his students as responsible for course content through the students' development of community action projects. From students' perspectives, the course provides an opportunity to enact critical awareness stimulated by popular media such as books by Michael Pollan and Barbara Kingsolver, movies like *Food, Inc.*, *Super Size Me*, and *King Corn*, and in prior, traditional courses in geography, women's studies, history, anthropology, and psychology. Many advanced undergraduates, especially geography majors, report taking UFC in search of *application* of their knowledge prior to graduation. Several case studies show students using the course conceptually as a bridge between academic development and the ethical imperatives of raised consciousness (Freire, 1970).

The work. UFC I-III were offered as "hands-on" complements to majors' human and urban geography studies, although the courses attracted a minority of nonmajors each semester. The course originally developed as an opportunity for those interested in food justice to grow food themselves on their academic building's green roof. Over time, additional forms of concrete action shifted the course's focus toward community engagement and activism. Around the time the study began, students typically passed along food they had produced to UFC partner organizations Food Not Bombs and a food bank hub. Later, raised beds were constructed, and the course was offered as an independent study. Soon thereafter, UFC became a regularly available course, open to anyone, even non-students. As an official course UFC was designed to integrate critical perspectives of radical human geography with its activist side, informed by an anarchist,

anti-racist, and feminist commitment to local scholarly engagement in struggle against the causes of inequality. Over time the notion of participatory responses to unevenness in the food system expanded from growing food for distribution to a wider scope of possible forms of community participation. Three instructors taught the course on rotation. Author B taught UFC the first, fourth, and fifth times Author A observed, participated, and finally co-taught.

Many participants came into the UFC course seeing it as a complement to other courses in human geography that were critical with regard to their content but traditional in their focus on codified disciplinary knowledge and graded performance tasks. These tasks positioned students as decision makers in the course and partners with community members. The course motto, "direct learning through direct action," illustrates this desire in the relationship it highlights between learning and social action. We envisioned a radical departure from what one student regarded as "typical academic activities" and from ways of knowing that schooling influences: discovering "right" answers, following leaders, comparative measurements of competence, and performances of knowing geared toward individual, esoteric rewards.

Phase I. The focal reading for the first iteration of the course was James Vernon's (2009) *Hunger: A modern history*. The book set familiar notions of hunger as a social problem against a complex anthropological, historical, and political backdrop. Chapters investigated hunger in British colonial India and the Women's Suffrage Movement in England, for example, where people intentionally abstained from food for political purposes in the context of the fairly recent development in the cultural imagination of Western Europe that hunger is primarily a social problem and a failure of

governance. The small class of eight students met in various places. Initially they met in a repurposed storage room in the basement of the human geography building to discuss the readings and make plans for a garden on the building's green roof. Then class meetings split time between the basement and the rooftop, where the students cultivated the garden and continued to discuss an expanding set of issues around food and hunger. Later, they would meet at a local elementary school to develop a community activism gardening project; they met as subgroups in the community to construct gardens at local residences and at transition shelter for homeless community members. Several of the participants were featured on national television when their work with the transition shelter attracted the attention of a homelessness advocate making a historic trek from Florida to the nation's capital. Students were asked to keep "farm journals" to reflect upon their experiences, but this request was not well-received by students. Several students construed the journal as an academic assessment, an opportunity for students to "show [they] did the reading."

The students were strongly encouraged to create a local food activism "zine" that positioned the UFC course as a long-term peer organization to local farms, businesses, and food and hunger activist groups. Students participated in course activities on campus as a group, with elementary school students, with local community gardeners, with local tenants interested in producing their own food, and residents in a transition shelter. The instructor (Author B) taught the course as an overload (no compensation). The participant observer (Author A) enrolled in the course and sought permissions to collect interview data on willing participants along with transcriptions of course meetings.

Phase II. Author B focused, in the second phase, on projecting an image of community organizing as an approachable, heterogeneous set of tactics ranging from highly visible to extremely mundane. Author A was participant observer, but with different authority after participating in the course in a prior semester. Author B redesigned the readings dramatically for Phase II. One strand focused on the day-to-day concerns of anti-hunger, food system, and environmental activists in the U.S. Scholarly publications in a second strand focused on community organizing and popular education. The class met around a large conference room table on the third floor of the geography department building, around the corner from the stairway up to the rooftop garden, which students once again maintained. The UFC course formally joined forces with a local activist organization and an urban planning course to participate in a worldwide protest of the automobile-oriented preferential use of public space. Students collaborated with urban planning students to create a richly layered participatory protest verging on art installation. They created a mock home on two parking spaces with garden plants squeezed into drawers and cracks everywhere. They offered a community meal from food they had reclaimed from dumpsters. They hosted a public forum in which passersby could contribute their own ideas about how the city's inhabitants could better utilize downtown public space and public space in general.

Students then collaboratively planned, researched, composed, and published two newspaper articles to develop momentum following the community action event. Their articles drew attention to an activist networking event to build consensus for future local food system action. The article announced an activist networking summit the class was

organizing to maintain momentum for changing views and policies regarding public space.

Phase III. Authors A and B co-taught the course in the third phase. Our goal was to build upon the dynamic role collaborative literacy practices played in the previous semester, Phase II. We resurrected the journaling activity but sought to make it collaborative and interactive. Students wrote in journals about important underlying issues in the course they had selected in the first few weeks and renegotiated later in the course. They passed these journals among group members from week to week, generating a rich and often more personal, soul-searching dialogue that complemented formal discussions in class. Students discussed religious beliefs, burnout, ethical misgivings, and assumptions they saw having an influence on the course. They convened at alternate sites with church administrators and community leaders to develop a market garden project on donated church property on the edge of a large, low-income neighborhood with a large Latino population situated near the city's industrial chicken processing facilities. They designed a flyer to accompany outreach efforts in the community. The students met door-to-door with 1,000-plus local residents, potential market gardeners, church administrators, and other community leaders to develop the garden project.

Evaluation and Redesign

Author B's reluctance to be the subject of Author A's investigation is central to the structure of the design experiment that emerged; he did not offer to allow Author A to study his teaching, or even to be included in the research, initially. Author A focused instead on Author B's students' human geography learning with the intent to create rich and deep accounts that could aid Author B in developing the course to be a regular,

capstone-type course in human geography. The current study is informed by the following research questions:

1. How did students understand their own role in addressing urban food insecurity?

2. How did students experience community action in the course?

3. What did students learn about food, food systems, and hunger?

4. How does literacy support learning in highly informal courses like the Urban Food Collective (UFC) experience?

Data collection. To produce data for these questions, Author A conducted interviews early in the first semester of the first class he studied and at semester's end. He also audiotaped class meetings, collected photographs and documents produced by students. Author A recorded and transcribed these interviews as well as class meetings occurring throughout the semester. He analyzed themes in the classroom discussion and interview data and correlated changing patterns in the data to particular events and periods in the course where possible. He compiled local and national press coverage of their community action initiatives. Engagement outside class was viewed as a culmination of classroom discussions. He coded disciplinary and other conceptual tools indexed by arguments participants employed as they discussed food issues, urban agriculture, and engagement in a southeastern city. The concept-based assertions were treated as stimuli in a social process of finding and/or creating common ground for thinking together. In addition to class meetings, Authors A and B recorded several conversations between 2009 and 2012 as collaborative reflections on the course and the research. After the conclusion of data collection and transcription, Author A and B began

discussing the first semester of the study. Over three years, the design of the study changed to meet the needs of the changing course and students.

Analysis. As we review a road that we have made by talking, we tell a kind of history of learning to teach for critically reflective, disciplinarily literate, local engagement. We paid special attention to the role of educational and human geographical theories in our conversation and pedagogies in order to evaluate, over time, how and whether disciplinary languages afforded efficiencies or particular problem-solving advantages.

Phase 1 focused on individual participant's case studies as evidence of the mediating influence of course activities, such as the readings. Phases 2 and 3 focused on discourse analysis of participants' collaboration in class to describe the acquisition or performance of literacy practices related to community organizing, advocacy, and engaged scholarship. The redesign attended to patterns in classroom- and field-based collaborations among students because Phase 1 adjustments had fostered a shift in the participants' focus toward agency as community activists. Phase 2 focused on investigation of that shift to understand the process of students' developing cohesive group and individual identities and literacies through collaborative experiences. Phase 3 redesign examined the processes that led students from collaborative writing and intensive interpersonal exchange (e.g., journals) to collective action (e.g., canvassing a neighborhood). In Phase 3 we specifically pondered why collaborative writing as *activists* (rather than as team members) appeared as emotionally taxing *preparatory* work, in contrast to the role played by collaborative writing in Phase 2. With each new design phase, the researcher and instructor designed and investigated evolving talk scenarios to

promote student-driven activities and disciplinary identities and literacies. In Phase 1,

intensive interviewing played a special, auxiliary role in learning about students'

experiences in the course, whereas in Phases 2 and 3, classroom talk was the vehicle for

evaluating our efforts to *make the road by talking.*

Talk Scenario #1 – Case Studies of Talking Towards Activist Identity

Case studies tied perceived inefficiencies in the curriculum to hierarchical

classroom relationships (i.e., student-teacher) despite intentional efforts to challenge their

influence in the course. One of the most poignant ways this orientation was made explicit

was through an ethic of working "with, not for" students, colleagues, and community

partners. The incarnation of "with, not for" into a curriculum was a dialectic process. But

case studies suggested that high regard for activities, texts, and information directly

sanctioned by the teacher, despite other measures of significance, were more important to

respondents than informal learning experiences.

We had called our method of achieving synergy with students, faculty, and

community partners "tacking back and forth" to evoke its experimental and emergent

nature. The phrase aptly describes the way we selectively used or conspicuously

eschewed "typical academic activities" to mediate students' and other stakeholders'

beliefs about UFC as a significant project.

Conceptualizations of local engagement bear the marks of our efforts to make the

course meaningfully different from traditional schooling. Our initial efforts to emphasize

opportunities in the course had an unforeseen negative effect. Juxtaposing the world of

school with social change radicalized students' conceptions of local engagement and

unnecessarily opposed students' desires to reach agreement about a (feasible) project

with their desire to do a *real* (that is, edgy) project. Emphasis in course readings on extreme forms of social action such as hunger striking resonated with the presentation of the course as extreme. Classroom discussion transcripts and interviews reveal how students struggled, on the basis of the radicalized-yet-opaque definition of community action, to reach consensus on forms of community engagement that met demanding criteria students constructed. Such vetting starkly contrasts with prior and subsequent semesters, when, without consternation, food grown on the rooftop was given to a homeless shelter or other service provider for distribution. The radicalization of ideas of community action was accompanied by a desire to perform meaningful action with or without consensus. Thus subgroups of the course had different amounts of contact with community partners through elective participation in "side projects" that didn't gain full group support.

Case studies of UFC I students confirmed our hypothesis about coercion as an essential feature of the educational experiences of high-achieving, self-disciplined, and successful students. All UFC I students that Author A interviewed initially expressed personal interest and commitment to responding to local hunger and supporting a vibrant local food system. Exit interviews showed that the students had progressed significantly in their thinking, but we found some of their conclusions troubling. Here we present three brief cases studies: Elspeth, Kate, and Racquelle (pseudonyms). Elspeth and Kate were eager to take on additional projects. The two appeared in a nationally syndicated report about homelessness when they helped construct a community garden with residents in a transitional shelter. Racquelle was reluctant to participate in class activities that met

outside regular meeting times. She was the only nonmajor among students who agreed to participate in interviews.

   Elspeth. Elspeth was most passionate about waste. She taught first and second graders about composting, journaled about the social significance of teaching children about sustainable practices, and even smuggled compost from her apartment to the rooftop compost heap. But in her final interview, Elspeth expressed disappointment that she hadn't learned anything: The course had been "theoretical, and I like that," but it hadn't "taught me anything." To our dismay, *after* participating in numerous hands-on activities with multiple groups of community members, constructing gardens, teaching low-income residents in multiple venues about urban food production, Elspeth questioned the effectiveness of the course in terms of meaningful urban *action*. She distinguished, on several occasions in that interview, between achieving "credibility" by being associated with the collective and developing "competence" that would have helped her be more productive. Clearly credibility and competence have related but somewhat different social purposes, and Elspeth saw credibility as a prerequisite to competence, but she had hoped the course might accomplish both. Convinced of a contradiction between Elspeth's reflections and her performance, we turned to discourse analysis for further information.

   We coded Elspeth's initial and final interviews to identify the arguments or conceptual structures she used to reflect upon the course and answer protocol questions about food production and local food issues (See Table 1, below). These arguments were grouped topically.

Table 1

Arguments Elspeth employed in interviews. Asterisks indicate arguments sub-coded as

"knowledge-oriented codes"

Conceptualize Local Engagement	Before	After course
Purpose of course in question*	3	8
Produce food to eat	3	1
Grow to feed people	3	4
Grow to learn	1	2
Food production social	1	2
Evaluate experience		
Knowledge as obstacle*	4	9
Hands-on experience*	-	4
Basics of gardening*	-	3
Hobby, not vital*	1	1
Material obstacles to producing food	2	-
Model food producer	-	2
Class as obstacle to learning	-	5
Nature as obstacle	2	1
Targeting poor as obstacle	1	1
Represent issues		
Theory vs. practice concept*	3	8
Climate determines diet	4	1
Complex food issues	4	3
Composting	8	7
Doing what you can	3	3
Ecological crisis	6	-
Urban ag. a "solution to so many things"	3	2

Avoid hypocrisy	2	2
Vegetarianism	2	2
Water conservation	7	1
Food independence/security	2	2
Non-food to food analogy	3	-
Masses of poor hungry people	2	3
Engage locally		
Application of AUFC experience*	-	4
Credibility vs. competence*	2	12
Eat produce	2	-
Local food system	5	-
Fit between local and local tastes	6	-
Remote origin of food	4	1
Social change by planting gardens	1	10
Social justice	4	3
Space	1	4

Coding transcripts of Elspeth's initial and final interviews revealed signals that she was doing focused epistemological work as part of her idea system relative to the course. Table 2 represents the frequency of all arguments sub-coded as epistemological in nature, comparing the initial to the final interviews in terms of frequency. The protocol did not change, although follow-up questions did. The increase in knowledge-oriented codes suggests she sought particular kinds of knowledge and knowledge experiences.

Table 2

Elspeth's focus on the role of high-status knowledge increased

Knowledge-oriented arguments/all arguments	12/95=13%	42/121=35%

Specifically, she emphasized the importance of experts that could guide her into desired competence. She asked in the initial interview, during a series of questions about gardening, "If I don't learn that in the class, I want you to teach me, ok?" We attributed Elspeth's initial conceptualizations of socially meaningful action to influential individuals and required readings designed to challenge norms of hunger as a social problem. For instance, she quoted her father when expressing her disdain for wasted patches of grass in urban commercial space. She expressed excitement about hands-on experience, but she saw learning as a verbal transmission from expert to novice in real-life context.

In the final interview, Elspeth employed many conceptual and argumentative constructs from the initial interview, but she employed a set of knowledge tools in particular that she used to categorize knowledge itself. We surmise that explicit concepts oriented on the nature and status of knowledge helped Elspeth to make sense of informal dialogic experiences in which authoritative instruction was lacking or withheld.

This increase in her reliance on a hierarchy of what counts as knowledge marked a trend we found troubling. The course was designed to place students in charge of decision-making, and to us that meant stepping back from the teacher-authority role, to give students more opportunity to engage in meaningful construction of disciplinary and other identities through peer talk.

Kate. In a very different case that complemented what we learned from Elspeth, Kate used the readings and discussions in the course to identify authoritative voices outside the course, particularly in her home community in which she began to apprentice herself. Both students developed epistemologies of learning-by-doing geared toward paternalistic talk with experts. The notion of playing in the sand with peers, figuring things out, learning as they went was no more appealing to Kate than it was to Elspeth. It appeared that teaching practices and course organization were steering students' epistemologically in contradictory directions, both toward and away from talk among respectful equals. Our course was affirming passive reception of established knowledge, even if the content of that knowledge was radical.

Racquelle. Kate and Elspeth shared a high view of local engagement and a low view of negotiation. Their standards for what constituted social change were black-and-white. Their classmate Racquelle presented a different, yet confirmatory case. Although Racquelle had the most prior gardening experience and was involved in a powerful, intergenerational family, food knowledge project, she only sporadically and peripherally participated in class food production and other activities. She never revealed to classmates that she and other women in her family were producing a multi-generational compendium of shared food preparation traditions expressing the family's Italian immigrant heritage.

Elspeth, Kate, and Racquelle conveyed a similar concern that the course had not satisfied the fundamental goal that had motivated them to join. They saw work on their own, outside of human geography as promising, by comparison. Irritated that the course hadn't really taught her to grow food or meaningfully reduce waste, Elspeth pictured real

social action as guerilla gardening, illegally salvaging medians and Wal-Mart parking lot buffers. Throughout the semester, she had covertly shuttled compostable materials from her living quarters to the rooftop compost heap.

Talk Scenario #2 – Talking Towards Action

Moving forward. As we discussed these cases over the next twelve months, Author B decided to dial back his critique of traditional schooling and to emphasize integration of existing students' proficiencies. He sought to build bridges from students' schooled experiences to future community action. In Phase 2 class meetings, he specifically drew attention to local engagement as multifaceted, heterogeneous, and often mundane processes involving multiple literacies, including research, writing, web design, interviewing, arbitration, and public speaking. He modeled patience and multiple literacies as an activist, telling many stories of prior experiences in which he played dual roles as scholar and activist. He used opportunities during class to help students recognize themselves and each other as participating in social action *already* as they talked through ideas for action, believing such experiences could prepare them to be more resilient, better informed community partners or organizers in the future. He regularly reminded students that the tedium of deciding how to act, an element of talking lamented in the case studies, was a fundamental part of effective direct action.

Author A studied the course during the implementing of these changes. First, while we understood the risks of *not* distinguishing the course from school as usual, early case studies warned against overplaying distinguishing features. The results of our inclusive strategy have been mixed. In Phase 2, for example, collaborative research and writing became central in one semester, and students expressed great satisfaction at the

way they stretched themselves as writers (see Figure 1).

Figure 1. Newspaper article composed through small- and whole-group collaboration.

The students felt they were walking in the shoes of thousands of activists before them.

John, a student, would reflect on his role in organizing local stakeholders in the food system, "If the goal is to get everybody on the same page, I'll allow the time it takes to do this. This conversation is great because what does it take for us to get on the same page?" In Phase 3, however, this connection between collaborative writing as a form of scholarly engagement was not appealing.

Talk Scenario #3- Using Writing to Intensify Transformative Talking

The following semester, in response to the multifaceted gains we saw through students' activist writing, we replaced a perennially neglected journaling requirement with periodic collaborative journaling (Figure 2). While students were enthusiastic about the sharing and honesty in the journals, they rejected collaborative authorship as an

avenue for meaningful collective action. Writing together would be too hard, they agreed.

They may have come to this realization based on their experience with the collaborative

journaling, which dramatically increased the effectiveness of that portion of the course,

albeit with unintended results of souring students on collaborative writing as a form of

community action. Examples of journal prompts created by students are presented in

Figure 2, below.

Figure 2. Two student-generated collaborative journal prompts.
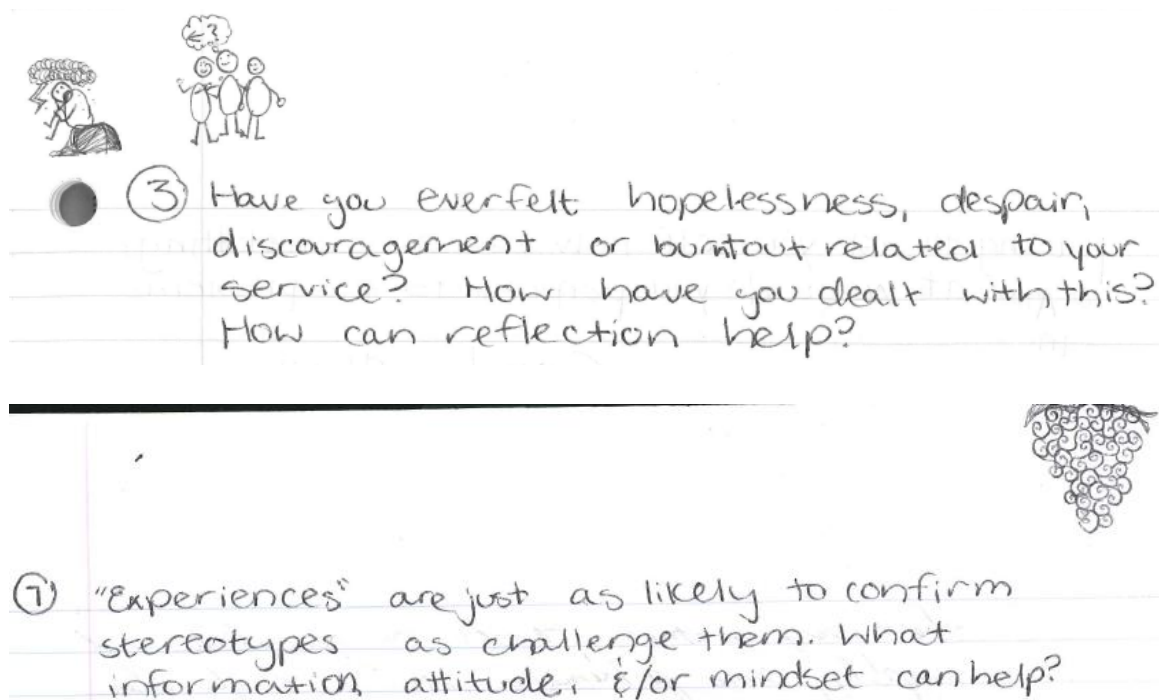
Students in this class characterized collaborative writing as an impractical,

schoolish challenge, and they expressed wonder and dismay that the previous semester's

students had managed such a feat. Expanding our view of literate activities based on the

roles they play in local engagement has contributed to expanding notions of successful

action. In fact, while students gravitated toward or away from collaborative writing

somewhat unpredictably, multiple literate practices were nonetheless necessary features

of the work students elected to do. The interpretation and production of graphs, internet

communication and research, other forms of collaborative writing, developing networks of experts, and other 21st century literacies (National Council of Teachers of English, 2013) were regular features of students' participation in UFC.

Reflection

Together Author A and Author B were able to draw on resources that teacher education is prone to overlook with its persistent problem of seeing teaching finally as an activity performed *upon* students. Author B's experience as an activist and geographer, as well as prior teaching experience, helped him alter his teaching by forming new reflective categories.

Since sculpting the notion of radical community action was a high priority in the course's design, we evaluated and modified the curriculum and teaching strategies by dropping and replacing the course text and class discussion that presented extreme forms of community action with readings and discussion about ongoing community organizing and popular education. The shift away from incisive, renegade activities like hunger striking meant relinquishing reflection on the normative assumption that hunger is a problem. In the first class meeting of the revised curriculum, Author B wryly acknowledged that, "for the purposes of this class, hunger is a bad thing." In place of the "question everything" approach, anecdotes from Author B's community organizing past and required readings of community organizing news became fixtures of the curriculum as we demonstrated the importance of working together in comparatively mundane forms of social action.

With the hunger strikers out of view, Author B embraced a modified role as model of the locally engaged citizen-scholar. The revised setting better integrated the

garden project and provided stronger stimuli for students. About a conversation between two of the more advanced students, Aaron said,

> The setting is important, allows for conversation, allows them to build and open up. The setting is important to how a conversation takes place, or if a conversation is allowed to evolve. So being in a different setting, doing work, encouraged us to talk about things that we hadn't yet talked about.

The garden prompted "big" questions, too, that the students addressed in other ways later on in the courses. Tim asked, "Why aren't we doing this everywhere. There's roofs like this everywhere, why not do this everywhere?" A classmate pondered,

> I don't have any super-profound thoughts. But when I was walking home I felt really good, that I'd done something. And I think that can get lost really easily no matter what kind of educational format, by both rote memorization and critical stances. They both lose the concrete product at the end. Programs that emphasize critical thought are like, "We'll discuss or we'll tear the idea down," but what concrete thing did we produce? It's not a given, but sometimes you want to produce something. This class, pairing doing something concrete with the critical thought—The critical thought can tend toward just talk, with nothing to go with it.

The instructor's anecdotes continually emphasized the glacial progress of the community action students thought most meaningful: frequent setbacks and dead ends and the variety of specific activities, many of which were mundane, out of which movements and change are often born.

Students introduced new words and phrases like "angles," "trajectories," and "coming together," a meta-consensus among divergent means of engaging in popular

protest, that reconciled the romanticized forms of political protest that students considered important at the start of the class with the students' networking and incremental activist work studied and conducted during the class, which Author B argued makes social change possible, sustainable, and just. The new message was twofold: that many forms of protest can contribute to the common good, and that students in a school classroom likely had efficiencies that could be utilized given the multiple angles that often come together to alter local urban hunger problems.

Discussion

The principle for this design research is derived from theoretical literature about teacher facilitation of funds of knowledge (González, Moll, & Amanti, 2005), talk as a form of social action (Buber, 1923), and learning environment design research (Brown & Campione, 1996; Collins, et al., 2004).

The idea of working "with, not for" (paraphrasing Freire, 1970) a variety of partners was the guiding principle of the service-learning course that began a year prior to our multi-disciplinary partnership. The phrase refers to a means of community organizing that foregrounds the goals of the community and actively seeks to avoid coercive relationships. For activists who think *they* know what *the* problem is *there*, it may seem inefficient to spend time eliciting and sharing "local" perspectives and local ways of seeing a problem. The ways that potential partners pose problems may seem inapplicable, pedestrian, misguided, ignorant, and even counter-productive. But the idea is that working with, not for people sets in motion a way of acting in concert that prefigures the better world for which we are working. The process, in other words, can serve as a means of raising consciousness about exploitative conditions hitherto unrecognized or

apparently unassailable. As research and teaching partners, this perspective meant an

opportunity to imagine nonviolent or less-coercive teacher education and literacy

research. Structurally, the geographer (Author B) was the member of a content area

community at a university; the teacher educator/literacy researcher (Author A) thus faced

the "with, not for" principle.

When we say "our" goals, it is important to recognize that as we are writing we

are looking back to a time when our goals had only just met. Figures 3 and 4 dramatize

two ways goals in a partnership can influence teaching and learning.

 In Figure 3, educational researchers work *on* a teacher, ostensibly to *cause* him or her to

have *right* goals.

Figure 3. Trickle-down partnership targets the instructor in order to influence classroom
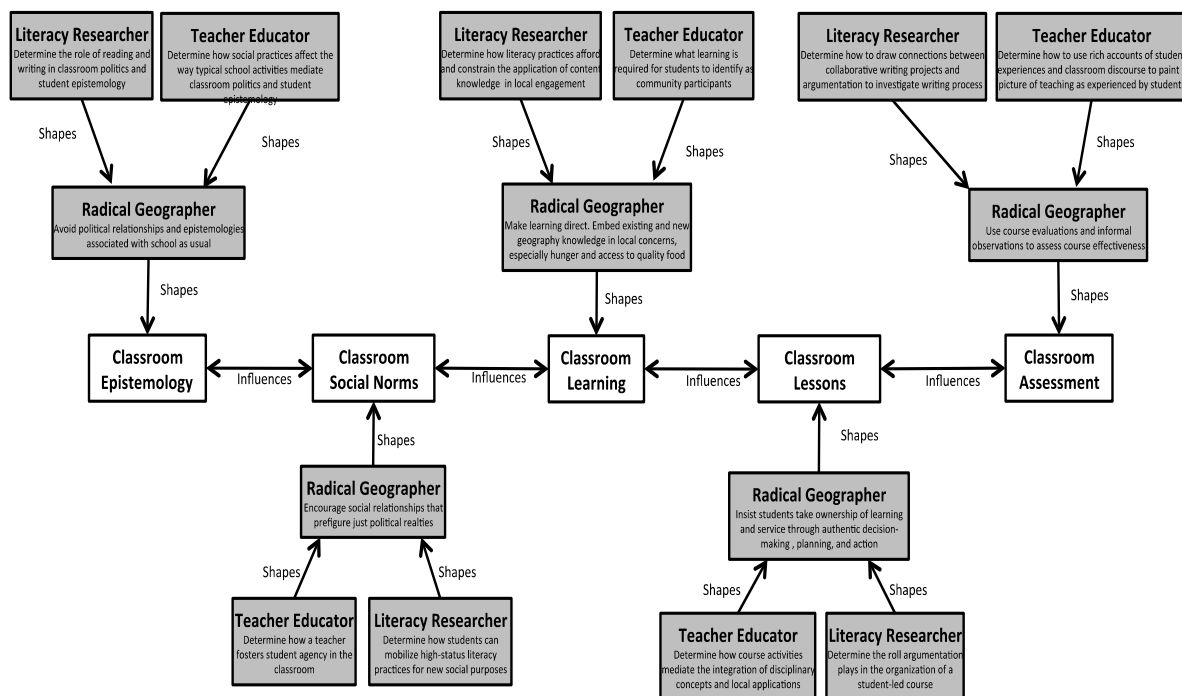
Figure 4. Phronetic partnership produces fluid articulations of goals with, rather than for instructional focus areas.
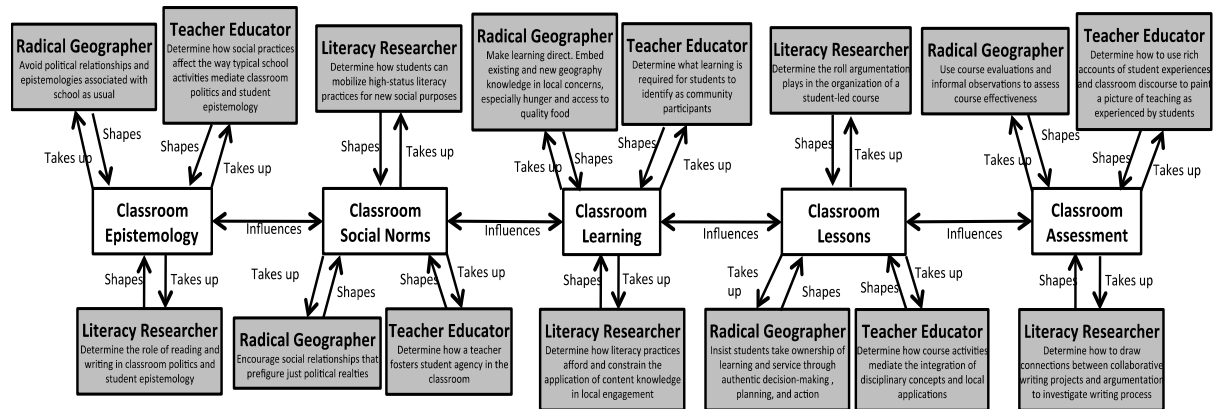
In Figure 4, members of a partnership are accountable to and influenced by the settings themselves. Those wishing to improve instruction, thinking, or literacy development must adapt their understanding and interests to multiple aspects of the teaching and learning setting. When we say "our" goals, we mean goals that began as Author B's and Author A's separately, then became shared through dialectic engagement with Elspeth, Kate, and Racquelle's epistemologies; university and geography department social norms; student and teacher learning; instructional units; and assessment. The process produced new and value-added ways of tackling shared problems through embedded experiments.

Our understanding of the implications of mutual aid-based partnerships among students, faculty, and community members of the community draws on the work of Horton and Freire (1990) who made roads by talking, searching out solutions by listening to the ways people saw the world, and discussing possibilities for concerted action. More specifically, our work together was inspired by the urban geographic activism of the radical geographer William Bunge (1974), who in a reply to an attack upon an essay he had written titled "The Geography of Human Survival", said:

[G]eography departments in the end must be accountable to the people

among whom they lie. Academic geographers seem to feel they actually

own geography. If things are mislocated in the cities that house geography

departments, academics do not seem to consider these mislocations their

business, their responsibility even in part. p. 482

Too often, what little attention is given to local concerns serves academic

purposes primarily. In literacy research, a rich tradition connects centers of higher

education with the places in which they are located. Still, even when researchers and

teachers become accountable to local funds of knowledge in disenfranchised

communities (Gonzalez, Moll, & Amanti, 2005), the McNamara Fallacy continues to

operate, when school success operates as a surrogate for, rather than complement to, the

set of tactics that build momentum toward mutual-aid based community change. To

Bunge, urban community vitality is teachers' and researchers' business.

References

Aristotle (1982). (J. Barnes, Ed.) *The politics.* London, UK: Penguin.

Author A & Colleague (2016).

Brown, A. L., & Campione, J. C. (1996). Psychological theory and the design of innovative learning environments: On procedures, principles, and systems. In L. Schauble & R. Glaser (Eds.), *Innovations in learning: New environments for education*. Routledge.

Buber, M. (1937 [1923]). *I and thou* (R. G. Smith, trans). Edinburgh, SC: T. and T. Clark.

Bunge, W. (1974). "Fitzgerald from a distance," *Annals of the Association of American Geographers*, *64*(3), 485-489.

Cazden, C. (1988). *Classroom discourse: The language of teaching and learning.* Cambridge, UK: Cambridge University Press.

Collins, A., Joseph, D., & Bielaczyc, K. (2004). Design research: Theoretical and methodological issues. *The Journal of the Learning Sciences*, *13*(1), 15-42.

Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY: Seabury Press.

Gee, J. (2007). *What video games have to teach us about learning and literacy*. New York, NY: Palgrave Macmillan.

Gonzalez, N., Moll, L. C., & Amanti, C. (Eds.). (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. Mahwah, NJ: Erlbaum.

Heath, S. B. (1983). *Ways with words: Language, life, and work, in communities and classrooms*. Cambridge, UK: Cambridge University Press.

Horton, M. & Freire, P. (1990). *We Make the Road by Walking: Conversations on Education and Social Change*. Temple University Press.

Kim, J., & Kim, E. J. (2008). Theorizing dialogic deliberation: Everyday political talk as communicative action and dialogue. *Communication Theory, 18*(1), 51-70.

Lankshear, C., & Knobel, M. (2008). Introduction: Digital literacies—concepts, policies, and practices. In C. Lankshear & M. Knobel (Eds.), *Digital literacies: Concepts, policies, and practices*. New York, NY: Peter Lang.

Leonard, J. (2011). Using Bronfenbrenner's ecological theory to understand community partnerships: A historical case study of one urban high school. *Urban Education, 46*(5), 989-1010.

Milner, H.R. (2012). Challenges in teacher education for urban education. *Urban Education, 47*(4), 700-705.

Milner, H.R. (2014). Culturally relevant, purpose-driven teaching and learning in a middle school social studies classroom. *Multicultural Education 21*(2) 9-17.

Mitchell, D. (2003). *The right to the city: Social justice and the fight for public space*. New York, NY: Guilford Press.

Valli, L., Stefanski,A., & Jacobsen, R. (2014). Leadership in school-community partnerships. *Procedia—Social and behavioral sciences, 141,* 110-114.

Vygotsky, L. S. (1987). *Thinking and speech.* In R. Rieber & A. Carton (Eds); N. Minick, Trans., Collected works, vol. 1, 39-285. New York, NY: Plenum.