Connecting the Dots: Links Between Teacher Knowledge, Print Exposure and Planning for Instruction

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A Thesis

in the

Department of Education

Presented in Partial Fulfillment of Requirements

for the Degree of Master of Arts (Child Studies) at

Concordia University

Montreal, Quebec, Canada

August 2015

CONCORDIA UNIVERSITY

School of Graduate Studies

This is to certify that the thesis prepared

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Entitled: Connecting the Dots: Links Between Teacher Knowledge, Print Exposure and Planning for Instruction

and submitted in partial fulfillment of the requirements for the degree of

Master of Arts (Child Studies)

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ABSTRACT

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To deliver high quality English Language Arts Instruction, teachers must possess specific content knowledge in order to develop a well-rounded instructional program. The aim of the present study was two-fold; first, to investigate correlations between pre-service teachers' print exposure, their knowledge of print exposure, and how they plan for instruction ($N = 35$); second, to deepen knowledge of print exposure through a two-week intervention and determine if successfully deepening knowledge affects a change in planning for instruction. The first experiment revealed correlations between participants' print exposure, their knowledge of print exposure and related concepts, and how much time they allocate for student reading. The second experiment employed an experimental design with participants randomly assigned into an experimental group ($n = 17$) or a control group ($n = 18$). The investigation showed that knowledge of print exposure can be significantly increased through a two-week intervention, and that this knowledge had a significant effect on how much time participants allocated for student reading when planning for instruction.

ACKNOLWEDGEMENTS

Undertaking the project of a thesis is daunting at the best of times. Fortunately, I traveled this journey with the guiding hands and expertise of several people, whom I would like to thank at this point.

First, to my committee members, Dr. Diane Pesco and Dr. Holly Recchia, I am most thankful for the time and effort you put into helping me reach this goal. Your support, your insightful questions and thoughts about this project, and the encouragement I have received from you, not only while writing this thesis but throughout the whole program, has made this task much more manageable and less frightening. I am very grateful for both of you.

I would also like to thank the entire faculty and staff in the Department of Education. I feel so lucky to have found a home with you, and the successful completion of the Masters is an accomplishment that I share with you. I would also like to mention my fantastic labmates who spent hours helping me, whether it be reliability coding, editing, or letting me practice things on them (Aviva Segal, April Paor, Linda Bond, Sabrina Tansey).

I am the most grateful, however, for the never-ending support I have received from my supervisor, Dr. Sandra Martin-Chang. I would never have embarked on this journey without you, and I would have never chosen to continue it without you either. You are an inspiring teacher and mentor, and I am so excited for all the future journeys I will undertake with you.

Finally, I would like to thank my family and the friends that have come to be like family to me for keeping me sane and grounded with words of encouragement, shoulders to lean on, snacks to munch on, ears to practice things on, and basically every kind of help a grad student can wish for. You made everything possible, and with you all by my side, completing a thesis was almost a breeze. Almost.

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In the United States, 65% of fourth graders are testing at basic or below basic reading skills (National Center for Education Statistics [NCES], 2013). Research over the last 20 years has drawn attention to increasing teachers' knowledge as a potential solution for improving the low reading rates among children. The National Reading Panel's (NRP) report (2000) focused on the importance of research based instructional practices, and yet there still seems to be a reluctance to incorporate these practices in classrooms (Moats, 2014). Past research has shown severe deficits in teachers' reading related knowledge (RRK; Cunningham, Perry, Stanovich & Stanovich, 2004; Moats & Foorman, 2003), specifically skills essential to early reading instruction. Joshi et al. (2009a, 2009b) suggested that teacher education programs are at least partially responsible for this deficit.

Encouragingly, studies have shown that the knowledge base of in-service and pre-service teachers can be improved through interventions offered by research-based teacher training programs and Professional Development (PD) seminars. Furthermore, these improvements in knowledge have also been positively correlated with student reading achievements (Binks-Cantrell, Washburn, Joshi & Hougen, 2012; McCutchen et al., 2002a; Spear-Swerling & Brucker, 2004; 2006). However, the bulk of this work focused on basic language constructs. Much less is known about the RRK associated with fostering literacy appreciation and comprehension in older elementary students. Therefore, the present research examines correlations between pre-service teachers' own reading habits, what they know about the benefit of recreational reading, and how it relates to English Language Arts (ELA) instruction in Study 1. Extending upon this, Study 2 seeks to establish whether this knowledge base can be deepened through an intervention and, if so, whether increasing RRK impacts how pre-service incorporate student reading when planning for instruction.

Teacher Knowledge

The NRP report (2000) identified five components of literacy instruction: phonemic awareness, phonics, vocabulary, fluency and comprehension. For children to read successfully, their teachers must not only be aware of these five pillars, they must also know how to explicitly teach each of them. Existing research has examined the state of teacher knowledge related specifically to phonemic awareness, phonics, storybooks, and to a lesser extent vocabulary (Cunningham et al., 2004; Joshi et al., 2009a; McCutchen et al., 2002a, 2002b; Washburn, Joshi & Binks-Cantrell, 2011). Across the board, teachers performed poorly on these measures. Further complicating this problem, teachers are often unaware of what they do not know, showing poor calibration between their perceived knowledge and actual skills (Cunningham et al., 2004; Cunningham, Zibulsky, Stanovich & Stanovich, 2009; Moats, 2014; Moats & Foorman, 2003). This is problematic because if teachers are unaware of the critical skills they are lacking, there can be no motivation for improving them.

To illustrate the importance of teachers' knowledge, McCutchen et al. (2002b) sought to establish the link between K-2 teachers' RRK, teachers' beliefs, and classroom practice. Skills essential to early literacy knowledge were assessed using the Informal Survey of Linguistic Knowledge (Moats, 1994). To distinguish the effect of RRK from general knowledge, teachers were also asked to complete a cultural literacy test. Teacher beliefs about literacy instruction were then sorted into one of three categories (phonics, skills-based, whole-language). While teachers demonstrated a high level of general knowledge on the cultural literacy test (average score = 76.7%), the discrepancy between the scores on the general knowledge test and the linguistic test (average score = 33.2%) was astounding, indicating that being literate and intelligent does not automatically grant knowledge of explicit word structure. To investigate if

there was a link between these knowledge bases and student outcomes, students' reading performance was assessed at the end of the year. Significant positive correlations were found between teachers' phonological knowledge and their use of explicit phonological activities across the year. This use of phonological activities, in turn, correlated positively with students' end-of-year word reading abilities. Furthermore, content knowledge had a larger effect on classroom instruction quality than identifying with either phonics or skill-based beliefs. McCutchen et al.'s findings indicate that teachers' RRK is closely related to how they plan for instruction as well as to student outcomes, and thus, its importance cannot be underestimated.

Cunningham et al. (2004) also found pervasive deficits in the RRK of American teachers. Within their sample of 722 K-3 teachers, 650 teachers were unable to recognize the majority of children's book titles from a Title Recognition Test (TRT). This is especially problematic due to the fact that the TRT serves as a proxy for measuring how frequently teachers read to their students. The study also revealed that less than 40% of the teachers were able to count the speech sounds (phonemes) in the word "say" (/s/e/ = two phonemes), and this number was reduced to 2.6% in a more challenging word such as "psychology" (/s/aj/k/a/l/ə/ĵ/i/ = eight phonemes). In addition, levels of explicit and implicit phonics knowledge were also low. Only four teachers out of the 722 in the sample were able to answer all seven multiple-choice questions about explicit phonics knowledge. Procedural knowledge was measured by asking teachers to identify regular and irregular spelling patterns of English words; less than 45% of the teachers were able to categorize the word "pint" as having an irregular spelling pattern. Additionally, a negative correlation between teachers' rating of their own abilities and results on the measures assessing phonics and phonemic awareness was found. This raises the additional issue that teachers seem to possess limited metacognitive awareness about their own skills.

Considering that teachers' content knowledge is crucial to students' reading achievement, and that many teachers show shortfalls in this knowledge, it is important to investigate the cause of this deficit. Two main problems have been identified. First, teacher education programs fail their students because education professors themselves lack knowledge about phonemic awareness, phonics, morphology and even comprehension strategies (Joshi et al., 2009a). For example, Joshi and colleagues found that professors were only able to answer, on average, 78.97% of the phonology based items and only 34.36% of morphology based items. Moreover, phonics and comprehension based questions were answered correctly about half the time (mean percentage = 56.47%, 57.5%, respectively). More alarming, when asked to identify causes for poor reading rates among children, professors in this study identified three major causes: students' low socio-economic status, students' family backgrounds, and students' English language learner status. However, none of the participants identified quality of reading instruction in elementary school as a possible cause for reading failure. It comes as no surprise then that teachers' RRK is found lacking, considering that professors lack this knowledge themselves.

A second potential cause of lacking content knowledge among teachers seems to be that the textbooks that are intended to support teacher-training programs are also inadequate. Joshi et al. (2009b) examined 17 of the most widely textbooks used in university-level reading education classes. Of the all the textbooks examined, only 10 correctly covered all five components defined by the NRP (2000). Furthermore, these textbooks devoted less attention to phonemic awareness, phonics and fluency, compared to vocabulary and text comprehension. In fact, when the books were analyzed for the percentage of text dedicated to individual topics, it was found that 2-20% of the text was spent discussing comprehension but only 1-6% of the text was spent discussing

reading fluency. Even more disconcerting was the fact that some textbooks contained incorrect definitions of basic concepts that are crucial to reading instruction (e.g., the term grapheme). Therefore, if neither the professors *nor* the textbooks can offer the relevant knowledge to pre-service teachers, it follows that many graduates from teacher education programs leave university ill equipped to teach reading.

This phenomenon has been referred to as the Peter Effect: professors, and teachers alike, cannot give what they themselves do not have (Applegate & Applegate, 2004). Originally, the Peter Effect was coined to describe pre-service teacher attitudes towards reading, summarizing the idea that unless teachers are avid and interested readers and model this behaviour, their students will be unlikely to become such readers themselves. Transferring this concept to RRK, Binks-Cantrell et al. (2012) posited that the same is true about content specific knowledge. Professors will be unable to transmit knowledge about language concepts to pre-service teachers if they themselves lack this knowledge. Teachers, in turn, would not possess this necessary knowledge when teaching their students. Thus, Binks-Cantrell and colleagues investigated whether the knowledge of professors can be improved by professional development (PD), and whether this affects the knowledge of the pre-service teachers in their classes. Professors were assessed on phonological and phonemic abilities, knowledge of phonics, and morphological skills. Professors who had received PD that promoted the use of research-based reading instruction performed significantly better than those who had not yet commenced their professional development. Furthermore, professors in the experimental group had pre-service teachers who significantly outperformed those being taught by professors in the control group.

In sum, there is an established body of research regarding teacher knowledge in three of the five pillars identified by the NRP (2000), specifically phonemic awareness, phonics and

vocabulary (Binks-Cantrell et al., 2012; Cunningham et al., 2004; Joshi et al., 2009a, 2009b; McCutchen et al., 2002a, 2002b; Spear-Swerling & Brucker, 2004). In contrast, much less is known about teachers RRK of the remaining two pillars, namely fluency and comprehension. Print exposure, which refers to reading done for pleasure (Cunningham & Stanovich, 1991, 1997, 1998; Martin-Chang & Gould, 2008; Stanovich, 1986) targets both of these components. Therefore, it would be valuable to investigate the extent of teachers' knowledge regarding the benefits of print exposure.

Print Exposure

In its simplest definition, print exposure refers to the amount of reading an individual does for pleasure (Cunningham & Stanovich, 1991, 1997, 1998; Martin-Chang & Gould, 2008; Stanovich, 1986; Sparks, Patton & Murdoch, 2014). The link between reading ability and print exposure seems to be based on reciprocal causation; better reading ability is likely to result in higher levels of print exposure, and in turn, more print exposure leads to better reading ability (Mol & Bus, 2011). Furthermore, low-ability readers increase accuracy and fluency in reading when exposed to print, suggesting that the experience gained by reading for pleasure has the potential to move low-ability readers forward and increase their abilities (Cunningham & Stanovich, 1998).

However, the opposite is also true, as illustrated by the Matthew Effects (Stanovich, 1986). The Matthew Effects espouse a "rich get rich, poor get poorer" cycle of reading development (Stanovich, 1986). Beginner readers who excel, read more for pleasure on their own, and thus become even better readers. In contrast, those children who find reading exceedingly effortful are less likely to see reading as an enjoyable activity and are therefore less likely to read voluntarily in their free time. Consequently, the gap between good readers and

poorer readers continues to widen. However, if readers who initially struggle with reading can be enticed to read for pleasure, the gap between skilled and less skilled readers can be reduced (Cunningham & Stanovich, 1997).

The standard measure for print exposure involves the completion of an Author Recognition Test (ART) or a Title Recognition Test (TRT). The ART and TRT serve as a proxy measure of reading done over a lifetime. Participants are asked to check off authors or titles of books they have read (Cunningham & Stanovich, 1990; Stanovich & West, 1989). These checklists mix real authors and titles with foils to discourage participants from guessing.

Stanovich and West (1989) piloted the ART first on undergraduate students at the university level. They found that it was not only an effective proxy for print exposure, it also consistently accounted for variance in word recognition skills. Surprisingly, participants who had lower comprehension scores but who often read for pleasure outperformed participants who had high reading comprehension scores but low print exposure on measures assessing word processing skills. This finding is notable because it suggests that high levels of print exposure affects abilities beyond decoding.

Cunningham and Stanovich (1990) developed a measure similar to the ART, which involved children checking off book titles that they had read, instead of identifying authors. Identifying book titles only requires some familiarity with the titles, ensuring that the cognitive demand on participants completing the TRT would remain quite low. In order to measure exposure to print outside of school, book titles that are not commonly covered within a school curriculum were selected. The authors examined orthographic processing skills with two tasks; orthographic choice asked children to choose a correct spelling between a word and a homophonic foil (e.g., snow versus snoe), and homophone choice task asked students to choose

the correct word between two homophones (eg. Which is the fruit? Pair versus pear). The results showed that differences in orthographic processing efficiency could be linked to differences in levels of print exposure. The TRT can also be used as a proxy measure of how much adults read to children. Adapted by Sénéchal, LeFevre, Hudson and Lawson (1998), when administered to adults, it acts as a gauge of how familiar adults are with storybooks. Parents and teachers who read more to children score higher on the TRT.

It is, of course, important to examine whether a high score on a TRT or ART is necessarily representative of high levels of print exposure. Given the nature of a checklist, the role that memory plays in recognizing author names or titles of books is an important factor to consider. Martin-Chang and Gould (2008) examined whether scores on the ART were driven more by personal reading experience or memory skills. To assess this, undergraduate students were asked to specify whether they identified an author on the ART because they had read books written by him/her (print experience), or whether they had heard of the author through secondary sources (memory). Results showed that the impact of memory was previously underestimated, because both print experience and memory were positively correlated with vocabulary and reading comprehension. However, of these two, the correlations were significantly stronger between print experience and vocabulary and comprehension. In addition, print experience was the only factor correlated to reading rate. This demonstrates that high levels of print experience have a stronger association with achievements related to linguistic skills than general memory ability.

Cunningham and Stanovich (1991) also examined whether print exposure was related to achievement on measures assessing a variety of knowledge bases. A sample of 134 students in Grades 4, 5, and 6 completed assessments that measured cognitive abilities, phonological

abilities, spelling and vocabulary skills, general knowledge, and print exposure (TRT). Children who scored higher on the TRT performed significantly better on the tasks related to spelling, word knowledge, verbal fluency, vocabulary, and general knowledge. Most importantly, this study further supported the finding that individuals who scored lower on measures of cognitive ability but higher on print exposure measures did not perform significantly worse than those who had high levels of cognitive abilities and low exposure to print. In fact, children with low cognitive ability who often read for pleasure scored significantly higher on tests of verbal fluency compared to children with high cognitive ability who read for pleasure less. This suggests that high levels of print exposure not only predicts spelling, word knowledge and vocabulary skills, it can also compensate for modest levels of cognitive ability.

Supporting this further, Cunningham and Stanovich (1997) looked at long-term effects of print exposure. Children were assessed on their cognitive and reading abilities in Grade 1, and followed up ten years later. The Grade 11 sample was tested on reading comprehension, written vocabulary, Raven's Matrices, general knowledge, and print exposure. Two significant findings emerged. First, the speed of reading acquisition had a moderate effect on several abilities in eleventh grade. Specifically, the faster children became literate in Grade 1, the higher they scored on measures assessing reading comprehension, vocabulary and general knowledge in Grade 11. Second, individual differences in print exposure, measured by both the ART and TRT, predicted subsequent differences in reading comprehension ability. Therefore, early reading acquisition is important because early readers are more likely to engage in reading for pleasure, resulting in higher levels of print exposure. However, when children who struggle to read at the beginning begin to read for pleasure, it helps mediate the gap.

Sparks, Patton and Murdoch (2014) recently replicated this study, by including 54 students who were followed from Grade 1 to Grade 11. Similarly, Grade 1 students were given measures that tested reading comprehension, spelling, vocabulary, listening comprehension and cognitive ability. At the end of Grade 10, students were assessed on reading ability, language ability, cognitive ability, and their print exposure was measured using a composite score formed from the completion of an ART and a Magazine Recognition Test (MRT), a checklist like the ART that asks participants to check off magazine titles, rather than author names. Additionally, students complete a Cultural Knowledge Checklist (CKC) to assess declarative knowledge. The results indicated that print exposure was a significant predictor of 10th grade reading and language abilities, as well as declarative knowledge. Additionally, the results also further supported the finding that early reading acquisition is important in predicting engagement with reading related activities in later years. This lends additional support to the premise that those who get off to a good start in reading show more engagement with reading, leading to increased levels of print exposure.

Following their work with children, Stanovich and Cunningham (1993) also worked with a sample of undergraduate students to investigate whether the effects of print exposure could explain how people acquire knowledge. Students who scored high on the ART had better grades; they also performed better on measures assessing reading comprehension, cognitive abilities, and math skills. Print exposure was also found to be the most potent predictor of verbal declarative knowledge, more so than general cognitive ability. Again, students who scored low on cognitive measures but high on the ART did as well, or better, on all measures than students who scored high on cognitive measures but low on the ART. For example on three of the five tasks, participants who scored lower on the measures of cognitive ability but who read a lot for

pleasure outscored participants with high general cognitive ability who read less during their free time. Thus, the findings point to avid readers generally having more knowledge than indifferent readers.

In short, reading for pleasure benefits all children, regardless of reading ability. It not only increases reading ability, but can also compensate for modest cognitive abilities; increases linguistic skills such as vocabulary, reading comprehension, spelling and verbal fluency; and increases verbal declarative knowledge (Cunningham & Stanovich, 19991, 1993; Martin-Chang & Gould, 2008; Stanovich & West, 1989). Early reading acquisition is important because it leads to higher levels of print exposure over time, but print exposure can also be instrumental in changing the trajectory of struggling readers who did not get off to an early start (Mol & Bus, 2011).

Teachers' Print Exposure

As stated above, the Peter Effect (Applegate & Applegate, 2004) refers to the idea that one cannot give what one does not have. The term originated to describe the idea that pre-service teachers who are unenthusiastic about reading themselves will be unlikely to cultivate an enthusiasm for reading in their students. Applegate and Applegate argued that classroom instruction is driven by teacher beliefs. Therefore, teachers who do not believe in the value of reading are unlikely to effectively model intrinsically motivated enjoyment of reading. Examining the reading attitudes of 184 pre-service teachers, Applegate and Applegate found that only 21% stated that they enjoyed reading, and even fewer (6%) labeled themselves as avid readers. When asked why, most teachers who considered reading less enjoyable as adults listed negative reading experiences they had in early school years as children, such as dull book choices, or being taught by instructors who did not strive to make reading interesting. This is a

significant problem because if classroom instruction is, at least in part, driven by teacher beliefs, then the cycle of uninterested reading instruction may be perpetuated.

To investigate whether teachers' own reading habits impact instructional practices, McKool and Gespass (2009) surveyed the reading habits of 65 Grade 4, 5, and 6 teachers. Teachers were asked about what activities they tended to engage in outside of school, instructional practices they used in their classrooms, their own reading habits, and how they motivate their students. Results of this questionnaire showed that while 79% of teachers considered reading to be valuable, less than 60% of the sample read more than 10 minutes a day for pleasure. Those teachers who read for more than 30 minutes a day (29% of the sample) used more instructional strategies that were associated with best practices in their classrooms, such as independent reading, literature circles, guided reading and oral comprehension discussions. This suggests that while many teachers value reading, as measured by their own commitment to reading, not all teachers engage in reading for pleasure themselves. Yet, teachers' own reading habits seem to be related to a more frequent use of instructional strategies that promote reading comprehension and fluency.

Research on teachers' reading habits is scarce. Considering that high levels of print exposure are positively correlated with children's academic achievements, it seems worthwhile to investigate ways of fostering the love of reading in children. Determining whether teachers' print exposure is correlated with the types of planning instructional activities that promote print exposure in children seems worthy of investigation. Simply put, are teachers who read more for pleasure themselves better equipped to create classroom activities that foster the love of reading in students?

Present Study

Teaching children to read is one of the primary expectations of elementary school teachers. Given that an early start in reading leads to more reading over a lifetime, which in turn yields a number of cognitive benefits, ideally teachers will not only be teaching children the mechanics of reading, they will also teach children to value reading for pleasure. While teacher knowledge of phonemic awareness, phonics, storybooks and even vocabulary has been the source of much inquiry, very little is known about teacher knowledge and beliefs concerning print exposure. Study 1 investigated whether the importance pre-service teachers ascribe to their own reading, translates to how they plan for reading instruction.

Study 1

Methods

Participants.

Forty-one students from a Department of Education in a Canadian University were invited to participate in this study during the fall semester of 2014. The students were enrolled in a course, with the content focused on teaching English Language Arts (ELA) between Kindergarten and Grade 2. Of those, 35 participants remained available for testing during the Spring of 2015. The final sample consisted of 3 male and 32 female pre-service teachers, between 18 and 48 years of age (M= 23.7, SD = 5.8). Participants were, on average, in their third year of a four-year teacher education program (M = 2.8, SD = 0.8). Only three participants held previous degrees (Teaching English as a Second Language, Psychology, Ecole Nationale du Cirque), and only one participant had previously taken a course in a field related to reading education (Early Childhood Literature).

Materials

Background Information Survey. Participants completed a demographic survey, which asked participants about their age, sex, languages spoken, and years of university completed. They were additionally asked if they had any previous experiences with ELA instruction. See Appendix A for all pre-test materials.

Teacher knowledge.

Teacher knowledge was measured using two tasks. Both tasks were printed on double-sided 8x11 white paper, with blank spaces provided for written answers. The first task assessed participants' declarative knowledge of concepts related to ELA instruction. The second task examined participants' procedural knowledge of these same constructs.

Declarative knowledge task. Participants were asked to define nine concepts related to ELA instruction. Of those, three were filler items included to distract participants from the main purpose of the study. The six target items tapping specialized content knowledge related to literacy instruction included: Matthew Effects, Print Exposure, Round Robin reading, Literature circles, Guided Reading, and Sustained Silent Reading. Participants were asked to write a definition for each of the terms or to write, "I do not know" if the term was unfamiliar to them.

Fully correct answers were allotted three points. Definitions containing two correct elements were given two points. Answers that contained one correct element were allotted one point. Definitions that were incorrect or left blank were given a score of zero. See Appendix B for all coding schemes. Reliability for this task was high, with the average ICC measure of .948, $p < .001$.

Procedural knowledge task. This task consisted of a series of short vignettes that depicted a classroom practice related to ELA instruction. The six vignettes ranged between 33 and 56 words in length ($M = 42$, $SD = 8.3$), and were at 4.5 Grade level according to the Flesch-Kincaid

readability formula. The participants were asked to read and answer the questions. Each vignette asked the participant what he or she thought about the described practice or observation. Three vignettes reported teaching practices empirically demonstrated to improve children's reading, which were exposing students to varying types of literature (Ivey & Johnston, 2013), guided reading (Ford & Opitz, 2008), and an observation of the Matthew Effects (Stanovich, 1986). The remaining three vignettes recounted teaching practices that are either outdated, such as Round Robin Reading (Ash, Kuhn & Walpole, 2008) or negatively correlated with student achievement, watching films, and teacher reading to students in place of students reading independently (Meyer, Wardrop, Stahl & Linn, 1994).

When participants correctly identified a practice as being beneficial or being problematic, they were awarded one point. The quality of the explanation supporting their correct answer was allotted up to two points. Reliability for this task was high, with the average ICC measure of .969, $p < .001$. See Appendix B.

Teachers' Print exposure.

Author Recognition Test (ART). In order to gather a proxy measure of the amount of reading done by participants over their lifetime, they were asked to complete an ART (Stanovich & West, 1989). For the purpose of this study, a revised version was used to include Young Adult authors, as well as Adult authors (Paor, Tansey & Martin-Chang, 2013). This modified version consists of an alphabetized list of 68 contemporary adult authors, 23 young adult authors, and 22 foils. The participants received the following instructions:

> "Below you will find a list of names. Some of these names are popular authors and some are not. Please read the titles and put an 'x' beside the names that you recognize as being

real authors. Please do not guess. Remember, some of the names are not real, so guessing can be easily detected. Once again, please do not consult outside resources."

To calculate a score for the ART, a proportion was obtained by dividing authors correctly identified by total number of authors. A proportion was also obtained for all the foils identified divided by total number of foils. To calculate a score for the ART, the proportion of foils was subtracted from the proportion of authors. This procedure was used for both the ART-A using only the adult authors ([score on ART-A/69] - [foils/22]), and the ART-YA, using only young adult authors ([score on ART-YA/23] - [foils/22]), respectively. A higher score on the ART indicates more familiarity with literature, and thus suggests higher levels of print exposure.

Title Recognition Test (TRT). Participants were also asked to complete a TRT (Cunningham & Stanovich, 1990). Similar to the ART, the TRT is a proxy measure of storybooks read to children; here, participants identify popular children's storybook titles. The version used for this study was adapted by Ladd et al., (2011) to reflect more contemporary items. This checklist was alphabetized and contained 35 real storybook titles and 15 foils. The participants were given the following instructions:

"Below you will find a list of names. Some of the titles are popular children's books and some are not. Please read the titles and put an 'x' beside those that you recognize as coming from real books. Please do not guess. Remember, some of the titles are not real, so guessing can be easily detected. Once again, please do not consult outside resources."

Similar to the ART scores, the proportion of foils incorrectly identified was subtracted from the proportion of titles correctly identified (e.g. [titles identified/35] - [foils/15]). A higher score indicates more familiarity with children's book titles, and thus higher levels of print exposure.

Planning for instruction.

Participants were given a blank grid printed on a one-sided 8x11 paper and were asked to plan a week's worth of ELA instruction for a Grade 5 class (adapted from Cunningham et al., 2009). The grid contained five text boxes, one for each school day. A total time allotment of 420 minutes (7 hours) was suggested. The instructions read:

> "According to the MELS, in Cycles II & III (grades 3 & 4, and grades 5 & 6), main language instruction (eg. English Language Arts) is allocated seven hours per week. Below is an example of how these seven hours could be distributed over the week. Please complete the grid, indicating how you would spend your English Language Arts teaching time in a grade 5 class, over the course of one week. Be as clear as you can, detailing the teacher's role and the students' role in each activity. Please also indicate the amount of time to be spent on each activity. Keep in mind that the hours allocated per day do not necessarily have to be taught consecutively; they can be broken into smaller chunks. Eg. A two-hour period does not have to be made of up one two-hour activity."

The completed activity grids were transcribed and coded according to the activities described therein. While a total minute allocation had been suggested (420 minutes), some participants deviated from the guidelines. Therefore, each code was ascribed a proportion of time allotted ([minutes allotted per activity]/ [total minutes allotted]).

Each activity was coded according to student activity: reading, writing, vocabulary, assessments, etc. There were 10 codes in total. Within reading, two subcodes were designed to clarify whether the student was reading or whether other kinds of reading were planned for. Other kinds of reading specifically included Teacher Read Aloud, Round Robin Reading, and Group Readings. A minute allocation was noted next to each activity. In the event that no time allocation was provided, the total number of minutes allocated by the grid for the given day was

divided by the amount of activities planned for on that day (e.g., with 90 minutes available on a Monday, if three separate activities were described, each activity was allocated 30 minutes). The coding scheme, including examples, is found in Appendix B. The inter rater reliability was found to be Kappa = .834, $p < .001$.

Results

The aim of this study was to examine if there were any links between teacher knowledge, planning for instruction, and teachers' own levels of print exposure. The two types of teacher knowledge were analyzed first. The mean scores on the declarative knowledge task ($M = 3.63\%$, $SD = 5.71\%$) were significantly lower than the scores on the procedural knowledge task ($M = 45.24\%$, $SD = 12.62\%$), as confirmed by a paired samples t-test, $t(32) = -21.6$, $p < 0.001$.

Next, how much time participants allocated for different activities when planning for instruction was examined. As demonstrated in Figure 1, teachers allocated far more minutes for some activities (e.g., Discussion or Writing) than for others (e.g., Assessments or Transitions). Activities that had a mean allocation time of 15 minutes or more were used in all subsequent analyses. Therefore, only Writing, Discussion, Child Reads, Other Reading and Lecture activities remained.

A one-way repeated measures ANOVA on the five activities assigned more than 15 minutes found a main effect of activity, with a moderate effect size, $F(2.5, 85.7) = 14.36$, $p < .001$, partial $\eta^2 = .30$. Post-hoc comparisons with Bonferroni corrections in place indicated that the amount of time dedicated to writing and discussion did not significantly differ from each other ($p = 1$), but time allocated for both was significantly higher than time allocated for the remainder of the activities (all $p \leq .05$). Child Reads and Lecture were also significantly

different, with more time allocated for Child Reads than for Lecture, $p = .04$. No other pairwise comparisons were significant, all $p > .6$.

Table 1 examines the correlations between the print exposure measures, the declarative knowledge task, the procedure knowledge task, and the five activities for which teachers allotted at least 15 minutes while planning.

As expected, all print exposures were moderately to strongly positively correlated, indicating that individuals who read one genre of literature for pleasure were more likely to read others as well. Of particular note, a significant positive correlation between scores on the TRT and scores on the declarative knowledge task was found. The correlation between declarative knowledge and scores on the ART-YA was also positive but failed to reach significance ($p = .073$). No significant correlations were found between the print exposure measures and the activities for which teachers planned.

As previously mentioned, though declarative knowledge scores were significantly lower than procedural knowledge scores, both tasks were moderately positively correlated. This suggests that though participants tended to be better at identifying beneficial practices than defining them, higher performance on one was associated with higher performance on the other.

Scores on the declarative knowledge task were also significantly positively correlated with time allocated for explicit teaching (i.e., Lecture). This indicates that higher scores on the declarative knowledge task were associated with more time allocated for explicit teaching.

Of particular interest to the experiment, both the declarative knowledge task and the procedural knowledge task were significantly correlated with time allocated for student reading (i.e., Child Reads). This finding indicates that participants who had higher levels of knowledge about concepts related to print exposure and its practical applications allocated more time for

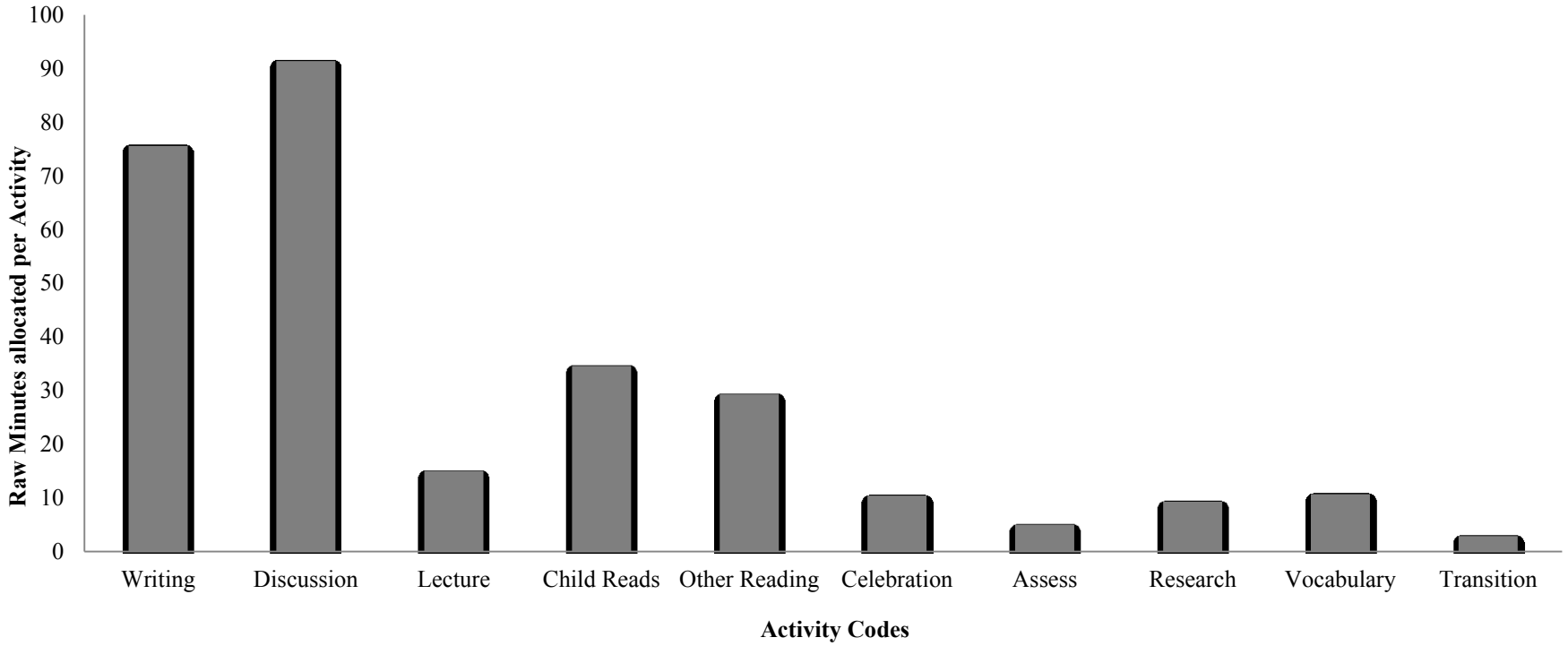

Figure 1. Number of minutes allocated for each activity code.

Table 1
Correlations between teacher print exposure, teacher knowledge, and planning for instruction in Language Arts Activity Grid (LAAG)

	1	2	3	4	5	6	7	8	9	10
1. ART-A	-									
2. ART-YA	.635**	-								
3. TRT	.472**	.540**	-							
4. Declarative	.181	.307	.478**	-						
5. Procedural	.007	.267	.131	.470**	-					
6. LAAG Writing	.051	.107	.026	.212	.124	-				
7. LAAG Discussion	-.002	.179	.144	-.019	.080	-.016	-			
8. LAAG Lecture	.143	.291	.189	.376*	.103	.184	-.041	-		
9. LAAG Child Reads	.047	.129	-.055	.469**	.487**	.188	.008	.377*	-	
10. LAAG Other Reading	.198	.182	.247	.055	-.127	.071	.467**	-.163	.061	-

Note. N = 35, all data were gathered pre-test

* $p < .05$, ** $p < .01$, 2-tailed.

students to read individually.

Finally, a significant positive correlation between how much time participants planned for students to read (i.e., Child Reads) and how much time they planned to spend on explicit teaching (i.e., Lecture) was found. This suggests that those who planned for more time for student reading were more likely to plan more time for teacher lead instruction as well. This same type of relationship was found between time spent on other types of reading (i.e., Other Reading) and time allocated for Discussion types of activities; as time allocated for one goes up, time allocated for the other does as well.

Discussion

The goal of Study 1 was to explore whether any relationships existed between teachers' personal interest reading and their professional RRK knowledge. The positive correlation between scores on the TRT and the declarative knowledge task indicates that the more teachers knew about children's storybooks, the better they were at defining terms related to literacy instruction. However, the direction of this relationship remains unclear. Specifically, it is unknown whether pre-service teachers who have gleaned more about concepts related to literacy instruction go on to acquire more knowledge about children's storybooks, or inversely, whether teachers who are more drawn to storybooks go on to acquire more declarative knowledge.

Alternatively, a third order variable might be influencing both knowledge of storybooks and declarative knowledge. For example, perhaps pre-service teachers who have more experience with children have higher levels of both storybook and explicit specialized content knowledge. This may be because more experience reading to children might be associated with more experience in early education settings. Similarly, the trend towards a positive correlation between the ART-YA and declarative knowledge may suggest that experience with young adult

literature is related to higher levels of explicit knowledge of reading related concepts. However, a larger sample size would be required to see if this trend becomes significant. Given that the ART-YA and TRT are proxy measures of reading done over the lifetime, it stands to reason that individuals who are more inclined to pick up children's or Young Adult literature in their free time may be more drawn to literacy development.

The significant positive correlations between performance on both of the knowledge tasks and time allocated for student reading is important to note. Again, the direction of this relationship is unclear. It could be that these participants simply intuitively have a feeling that time children spend reading is valuable. However, further investigation would be required to determine the cause of this type of relationship.

The correlation between the different types of activities is also noteworthy. Specifically, there seem to be significant positive relationships between Lecture and Child Reads activities, and between Other Reading and Discussion activities. To determine the nature of these relationships, and whether this relationship is context specific, further analyses would be required. For example, when a participant plans for student reading, is that followed up by Discussion opportunities? Or when a teacher explicitly teaches a lesson (Lecture), is that followed up by time for students to read (Child Reads)?

However, it is important to note, that due to the correlational nature of Study 1 nature of the relationship between print exposure and teacher planning for reading is difficult to determine. Therefore, the goal of Study 2 was to manipulate teacher knowledge and to examine whether any changes in teacher planning for reading could be observed.

Study 2

Study 1 examined the knowledge base of the sample prior to any specialized instruction. The low performance on both pretest knowledge tasks come as no surprise, given that the targeted concepts can be considered specialized content knowledge. Therefore it raises the question of whether the knowledge base can be improved; in other words, can pre-service teachers be taught about print exposure in a two-week intervention, and if so, does this result in increased planning for reading in the classroom?

This question has been explored with regards to basic language concepts. For example, McCutchen et al. (2002a) examined whether improving K- Grade 1 teachers' knowledge through an intervention would impact student achievement. A two-week intervention was designed to instruct teachers about phonology and phonological awareness. Students of these teachers were then assessed on phonological awareness, spelling and reading abilities. Pre- and post-tests revealed that all teachers tended to have high levels of general knowledge but low knowledge of phonology and orthography. The two-week intervention significantly deepened the RRK knowledge of teachers in the experimental group, while knowledge levels in the control group remained the same. More importantly, students who were taught by teachers in the experimental group preformed significantly better on all measures, showing that improving teacher knowledge significantly impacts student learning.

Further investigating how changes in teacher knowledge can affect student outcomes, Spear-Swerling and Brucker (2004) examined the knowledge base of pre-service teachers. A sample of 147 students was divided into three groups. The "instruction and application group" received instruction about phonics and English word structure through a course on special education. In addition to the course, they tutored a group of second grade struggling readers under supervision. The "instruction only group" received the same instruction, but were not

given the opportunity to apply this knowledge in tutoring sessions. The control group did not receive any specialized instruction or tutor any students. All pre-service teachers regardless of practice condition performed significantly better on measures assessing word-structure knowledge, phonemic awareness skills and phonics than the control group, thereby indicating that university based instruction can indeed increase teacher knowledge and that this instruction need not be coupled with classroom experience.

Considering this, Study 2 is therefore guided by the following questions. First, given that preservice teachers do not seem to know much about print exposure prior to any instruction, can teacher knowledge be deepened by an intervention that targets knowledge of print exposure? If so, does increasing knowledge result in a corresponding increase of using strategies that foster a love for reading when planning for instruction?

Methods

Participants.

The same 35 participants were followed from Study 1.

Research Design.

In addition to the pre-test data gathered and analyzed in Study 1, Study 2 collected posttest data following a 2-week intervention. The 35 participants from Experiment 1 were randomly assigned into either experimental condition (n = 17) or the control group (n = 18). The 2-week intervention was administered in early Spring of 2015. The experimental group received two 45-minute workshops that focused on deepening knowledge about print exposure. The control group received two 45-minute workshops that targeted knowledge about inferencing. The posttest measures were administered in late Spring 2015, two weeks after two 45-minute intervention sessions. Pre- and posttest measures are detailed below.

Materials.

Pretest measures.

The pretest measures were described in Study 1.

Post-test measures.

Following a two-week retention period after the last intervention session, participants in both the experimental condition and the control group were asked to complete the same three tasks again, namely: the declarative knowledge task, the procedural knowledge task, and the Language Arts Activity Grid. Print exposure measures were not readministered because the ART and TRT are proxy measures of print exposure over a lifetime, and are therefore not expected to change over a few months.

Procedures.

Intervention.

The intervention took place in early Spring 2015. During the intervention periods, the experimental and control groups were placed in different rooms. The experimental group received two 45-minute sessions with the experimenter, who taught participants about print exposure, its importance, and how this knowledge can be implemented in a classroom. During these two sessions, a discussion element provided participants with the opportunities to share their thoughts and own experiences, as well as to ask questions. The first session served to teach participants the definitions of Print Exposure and Matthew Effects. The second session, which took place the following week, began by reviewing the concepts taught in the previous session, and then elaborated on the practical implications for teachers in their classrooms. See Appendix C for intervention scripts. The control group received a similar intervention, in which an

experimenter taught the pre-service teachers the definitions of different types of inferencing in Week 1, and how this knowledge can help classroom instruction in Week 2.

Coding and scoring.

The scoring and coding procedures were identical to those listed in Experiment 1. Both teacher knowledge tasks were scored on a 3-point scale. The Activity Grids were coded according to the raw minutes of time pre-service teachers allotted for each activity.

Results

One focus of Study 2 was to answer whether knowledge of print exposure can be deepened through an intervention. This was tested in a 2 x 2 x 2 mixed ANOVA where between-subjects factor was Group (experimental versus control), and the within-subjects factors were Time (pretest versus posttest) and Task (declarative knowledge versus procedural knowledge).

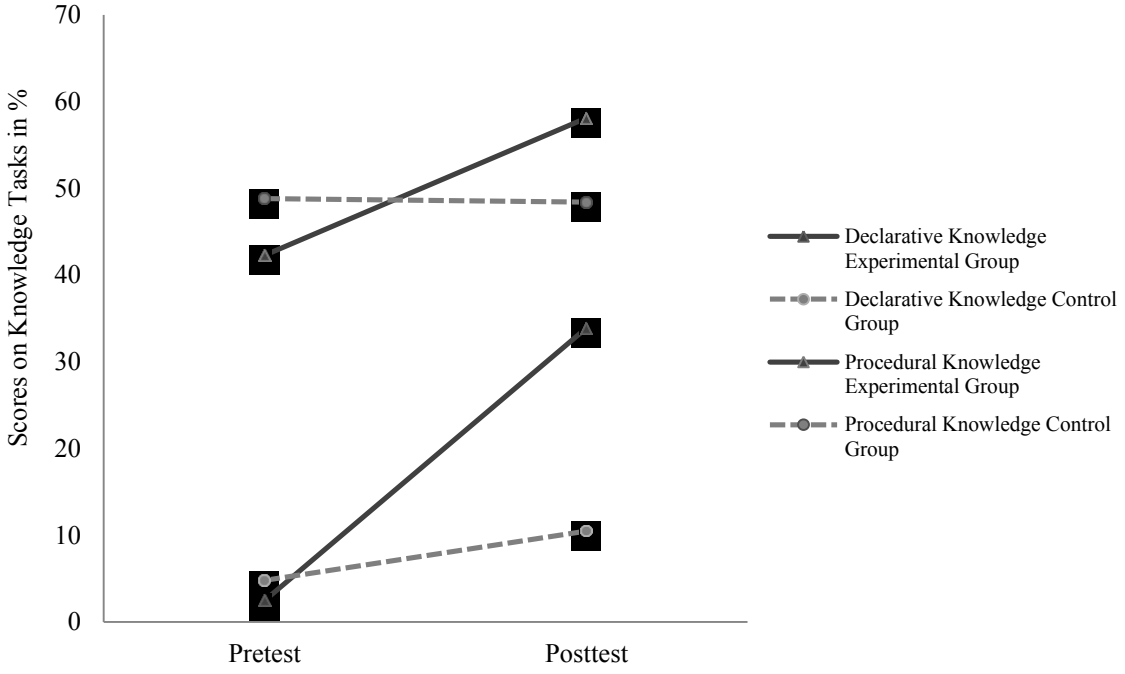

Figure 2. Scores on declarative and procedural knowledge at pre- and posttest.

There was a significant main effect of time, $F(1, 31) = 50.782$, $p < .001$ with a large effect size, partial $\eta^2 = .621$, indicating that participants significantly improved from pretest ($M = .245$, $SD = .014$) to posttest ($M = .378$, $SD = .020$) . There was also a significant main effect of task with large effect size, $F(1, 31) = 270.649$, $p < .001$, partial $\eta^2 = .897$, suggesting that participants performed significantly higher on the procedural knowledge task ($M = .494$, $SD = .021$) than the declarative knowledge task (declarative knowledge $M = .128$, $SD = .015$). Additionally, there was a significant main effect of group, $F(1, 31) = 4.678$, $p = .038$, partial $\eta^2 = .131$, with the experimental group ($M = .342$, $SD = .019$) significantly outperforming the control group ($M = .281$, $SD = .019$). These main effects were qualified by three significant interactions.

First, the Task x Group interaction was found to be significant, $F(1,31) = 4.361$, $p = .045$, partial $\eta^2 = .123$, indicating that performance on both tasks increased for both groups. Second, a significant Time x Task interaction indicated that performance on both tasks increased significantly from pre- to posttest, $F(1,31) = 8.170$, $p = .008$, though the effect size was larger for the declarative knowledge task (partial $\eta^2 = .714$) than for the procedural knowledge task (partial $\eta^2 = .166$). Finally, the significant Time x Group interaction, $F(1, 31) = 30.993$, $p < .001$, partial $\eta^2 = .500$, indicated that the amount of improvement from pre- to posttest depended on which group the participants were assigned. Specifically, as observed in Figure 2, the experimental group improved over time (partial $\eta^2 = .741$), while the control group did not. Post-hoc pairwise comparisons with Bonferroni corrections in place showed that the improvement for the experimental group was significant, $p < .001$, while the same was not true for the control group, $p = .299$. A three-way interaction of Time x Task x Group was not significant, $F(1,31) = 1.470$, $p = .234$, suggesting that the Time x Group interaction was similar across the two tasks.

It was of specific interest to this study to see how pre-service teachers planned for reading; would those in the experimental group allocate more time for activities that foster students' own reading habits after being taught about the importance of print exposure? The second research question aimed to investigate whether the experimental group allotted more time to classroom reading compared to the control group. To answer this question, the mean score of raw minutes allocated for reading (both Child Reads and Other Reading) activities in the grids were summed.

A 2 x 2x 2 mixed ANOVA was conducted to determine if there was a significant difference between groups in time allocated for reading. The between-subjects factor was Group (Experimental versus Control) and the within-subjects factors were Time (pretest versus posttest) and Activity (Child Reads versus Other Reading).

No significant main effects were found. A significant three-way interaction was found, $F(1, 33) = 6.068$, $p = .019$, partial $\eta^2 = .045$, indicating that the pattern of change was unique to each to group and differed for both tasks. No other effects were significant.

To follow up the interaction, two separate 2 x 2 mixed ANOVAs were conducted to examine the Group x Time effects for each dependent variable. The first 2 x 2 ANOVA looked at time allocated for Child Reads, with the within-subjects factor being Time (pretest versus posttest) and the between-subjects factor being group. A significant Time x Group interaction was found, $F(1, 33) = 7.883$, $p = .008$, indicating that amount of increase in time allocated for Child Reads was dependent on what group participants were assigned to. As illustrated in Figure 3, participants in the experimental group increased the time allocated for Child Reads from pre- to posttest, while participants in the control group did not change that time allocation significantly.

The second 2 x 2 ANOVA examined time allocated for Other Reading. The within-subjects factor was time (pretest versus posttest), and the between-subjects factor was group (Experimental versus Control). There were no significant main effects or interactions, indicating (neither group changed significantly over time) that there was no significant difference in time allocated for Other Reading between the groups, and no significant change in time allocated over time.

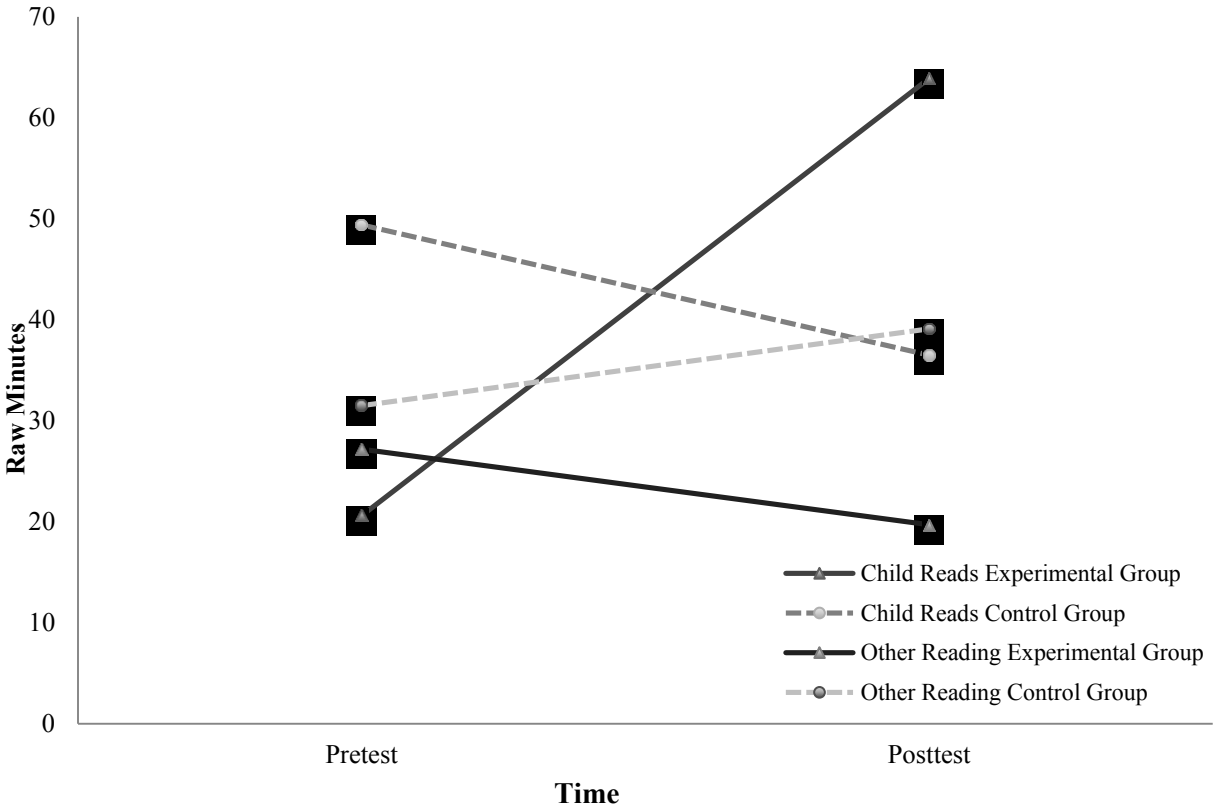

Figure 3. Minutes allocated for reading over time per group.

Discussion

Study 2 investigated whether RRK about concepts related to print exposure could be deepened, and whether that affected the way pre-service teachers planned for instruction. It stands to reason that pre-service teachers who know more about print exposure might reflect that

knowledge when planning for instruction. Specifically, when pre-service teachers know that pleasurable reading yields positive cognitive benefits, they might attempt to incorporate more such opportunities into their instructional time.

It was evident that prior to any instruction, participants knew very little about print exposure and related concepts when asked to define them. Both participants in the experimental group and in the control group scored close to floor on the declarative knowledge task at pretest. The experimental group increased their scores significantly, showing that the intervention succeeded in deepening the knowledge as measured by the declarative knowledge task.

The same is also true for knowledge as measured by the procedural knowledge task, which was significantly correlated with scores on the declarative knowledge task, even though they were much higher. Given that participants are all students in a competitive education program, higher levels of procedural knowledge at pretest come as no surprise. However, the experimental group still improved scores at posttest, while the control group remained the same, suggesting that even procedural knowledge base was deepened by the intervention.

Furthermore, this change in knowledge was reflected in how participants planned for instruction following the intervention. Specifically, the participants in the experimental group planned for more time for children to read in their Activity Grids following the intervention. Considering that participants were not knowledgeable about what print exposure is or how to use this knowledge prior to the intervention, and taken together with their improved scores on the knowledge tasks, it thus follows that by deepening knowledge about print exposure, the intervention resulted in more time planned for an activity that encourages students to read.

General Discussion

The aim of this investigation as a whole was to determine whether pre-service teachers' own levels of print exposure, and their baseline knowledge of print exposure impacted how they planned for a week of instruction for a fifth grade ELA class. Own levels of print exposure were analyzed separately from knowledge of print exposure, because print exposure itself is not a skill that can be change in a short period of time. Given that print exposure is measured by checklists that act as a proxy for reading done over a lifetime, the impact of print exposure levels were examined in a correlational investigation. However, knowledge about why print exposure is important also seemed like a worthwhile investigation.

While baseline performances on the declarative knowledge task were very low, individuals who were more oriented towards children's storybook titles, and Young Adult books as indicated by the correlation trend found, still knew a little more. In turn, participants who scored higher on both knowledge tasks allocated more time for students to read in their lesson plans. The latter finding is particularly important because it suggests that perhaps teachers who more interested in books their students might read may intuitively place more importance on fostering students' enjoyment of reading.

Even more noteworthy is the fact that though pre-service teachers are unknowledgeable about print exposure and related concepts as a whole prior to any instruction, an intervention was successful at deepening this knowledge. This change in knowledge was associated with an increase in time spent on reading activities that are known to be beneficial to literacy development. Taken together, the results suggest that it is possible to enhance language knowledge, which in turn impacts how teachers plan for instruction.

At pretest, participants planned less than seven minutes a day for student reading. While instruction time is finite, activities such as Writing were allocated more than twice that much

time (15 minutes per day). Writing is clearly also an important component of ELA instruction; it is not the goal of this study to label other activities as less important than reading. However, as demonstrated by a vast body of research, the more children read, the better they become at it, and the more of the cognitive benefits they reap (Cunningham & Stanovich, 1991, 1997; Mol & Bus, 2011; Sparks et al., 2014). However, at posttest, the experimental group that was taught about the importance of reading almost doubled that time to about 13 minutes per day. The implication is that if teachers are taught about how to provide quality research based instruction, they are likely to reflect this knowledge when planning for instruction.

What do the findings mean regarding print exposure? Reading for pleasure is a valuable tool for any student. Research has repeatedly demonstrated that reading has only positive benefits for individuals. Considering that high levels of print exposure can actually make up for perhaps more modest cognitive abilities (Cunningham & Stanovich, 1991), getting children to enjoy reading seems like a logical way to equip them with tools that will aid in academic success. The more teachers know about how important it is to get children to enjoy reading, the more they might spend valuable class time encouraging a love for literacy. By understanding how important it is for students to read, teachers might be more inclined to provide more reading opportunities and to introduce their students to a variety of books across all genres, so that even the most reluctant reader might find something of interest. Feeling successful at reading leads into more reading (Stanovich, 1986), more reading is more print exposure, and more print exposure increases reading comprehension, fluency, vocabulary, spelling, and more declarative knowledge (Binks-Cantrell et al., 2012; Cunningham et al., 2004; Joshi et al., 2009a, 2009b; McCutchen et al., 2002a, 2002b; Spear-Swerling & Brucker, 2004).

Limitations and Future Research

One limitation of this study is the sample size. It would be interesting to determine if the correlational trend between the ART-YA and the declarative knowledge at pretest would extend to significance with a larger sample size. An additional problem with the data involved large standard deviations; it stands to reason that a larger sample size might have an effect on that as well due to the natural large deviations in small samples.

A further limitation was that reading time allocated for homework was not accounted. Specifically, the Grids did not fully allow for reading assigned for homework to be considered. It is possible that this resulted in an underestimation of reading time assigned by pre-service teachers. A future study might seek to include homework by asking participants to explicitly plan for homework, including a clear minute allocation.

There are many future directions in which these data can be taken. What remains interesting are the Activity Grids as a whole. This study focused on reading, because print exposure reflects amounts of reading done. However, participants planned for a multitude of activities within their grids, and a valuable investigation would be to examine how these activities relate to each other. One potential research question to explore involves investigating whether reading activities are followed up by other activities to support comprehension and fluency, or are they considered as stand alone lessons.

Additionally, it would be of merit to further analyze the data yielded by the Grids in terms of non-reading activities. ELA instruction is not limited to reading. While the scope of this study was to examine reading, specifically reading done by students, writing and explicit teaching are also of great importance to successful ELA instruction. A future study investigating how pre-service teachers plan for instruction prior to any specialized instruction could be of

merit in determining how teacher education programs can provide the best kind of support for future teachers.

Finally, considering that this sample consisted of pre-service teachers, it would be of value to investigate how this type of intervention would impact in-service teachers. Furthermore, it would be valuable to investigate how the potential resulting change in instructional planning affects student outcomes.

Implications

The findings of this study may be of importance to teacher education programs. It is clear that teacher knowledge has been found lacking (Cunningham et al., 2004; McCutchen et al., 2002b), and that teacher education programs are partly to blame (Joshi et al., 2009a). Knowing that instructing teachers about concepts that make their students better readers, such as print exposure in this study, seems to make a difference in how they plan for instruction, it follows that teacher education programs should consider what tools to equip future teachers with to aid in their instructional planning.

Additionally, the study also indicates that the values of print exposure may even extend beyond the cognitive benefits previously investigated (Cunningham & Stanovich, 1991, 1997, 1998; Martin-Chang & Gould, 2008; Mol & Bus, 2011; Sparks et al., 2014; Stanovich, 1986). Given the significant positive correlation found between knowledge at pretest and performance on the TRT, and a trend towards a similar correlation with performance on the ART-YA, it may well be that teachers who read more for pleasure are more tuned into developmentally appropriate teaching practices.

Lastly, as print exposure is measured using checklists that act as a proxy of reading done over a lifetime, it is beyond the scope of this study to see if instructing teachers about the

importance of recreational reading might inspire them to read more themselves. It would be fascinating to follow a sample such as this longitudinally, and re-administer print exposure measures in 10 years to see if deepening knowledge of print exposure affects print exposure itself.

Conclusion

The aim of this two-experiment study was to investigate teacher knowledge and print exposure with a sample of 35 pre-service teachers. Specifically, Experiment 1 investigated correlations between pre-service teachers' own print exposure, their knowledge of print exposure, and how they planned for instruction. Experiment 2 investigated if knowledge of print exposure and related concepts can be improved and whether this subsequently resulted in a change in planning for instruction. Correlations between participants' levels of print exposure, their initial knowledge, and how they plan for instruction were found. This study also demonstrated that initially, pre-service teachers are unknowledgeable about print exposure, but this knowledge can be deepened with a two-week intervention. Furthermore, this increase in knowledge resulted in a change in how participants planned for instruction. Taken together, it is therefore imperative for teacher education programs to give preservice teachers the knowledge they require to prepare a balanced literacy program.

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Appendix A

Testing Materials

CONSENT TO PARTICIPATE IN:

Concordia Reading Investigation

This is to state that I agree to participate in a program of research being conducted by Dr. Sandra Martin-Chang of the Department of Education at Concordia University. She may be reached by phone (514) 848-2424 x8932, or email at smartinc@education.concordia.ca.

A. PURPOSE

I have been informed that the purpose of the research is to study how reading interest and knowledge are related to the instruction of reading comprehension. The survey is designed to inform our teaching for pre-service teachers in primary teacher certification.

B. PROCEDURES

I will be asked to fill out a 30-minute questionnaire about my knowledge of reading comprehension. I will participate in a reading workshop, followed by a 30-minute questionnaire. I have been informed that all of these tasks will take place during class time. I understand that my answers on the questionnaire will be completely confidential, and a participant number will used beyond this point. Data will be kept in a locked room at all times, and will be destroyed after a period of 5 years. Only group data from this project will be published.

C. RISKS AND BENEFITS

I have been informed that there is minimal risk to my involvement in this study. On the contrary, the researchers hope that I will directly benefit from my participation by learning about the types of reading-related knowledge that contribute to literacy. Upon completion of my questionnaire, I will also be receiving children's books for participation.

D. CONDITIONS OF PARTICIPATION

I understand that I am free to withdraw my consent and discontinue my participation at any time without negative consequences.

I understand that my participation in this study is confidential.

I understand that neither the school nor the Professor will have access to individualized results of this study at any time.

I understand that the data in this study may be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print): _____

SIGNATURE: _____

If at any time you have questions about your rights as a research participant, please contact the Research Ethics and Compliance Advisor, Concordia University, Dr. Brigitte Des Rosiers, at (514) 848-2424 x7481 or by email at bdesrosi@alcor.concordia.ca

Before you begin, there are a few simple, but important guidelines that we would ask you to follow while completing the questionnaire:

Please do not consult the internet
Please do not consult other people
Please do not consult your text books
Please answer the questions in the order they appear, and refrain from spending too much time on any one section.

Because compliance to these few guidelines is of critical importance to the outcome of this study, we would ask you to please indicate that you understand and will abide by these instructions. The mark in the box below will stand in place of your signature in order to ensure your privacy (as the consent form will be separated from the rest of the survey).

Yes, I will follow the 4 guidelines.	No, I will not be able to follow the 4 guidelines.

BEFORE YOU BEGIN:

On the first page, you will find a **consent form.** If you agree to participate in this study **the information must be completed and signed in order to allow me to use your questionnaire.** Your consent form will be separated from the questionnaire before it is scored in order to ensure your anonymity.

Please read all of the instructions carefully. The questionnaire was designed so that some tasks would be more challenging than others. **Don't worry if you find the questions difficult, this is very common. Please just do your best, and do not consult outside resources.**

Thank you once again for participating!

Demographics

1. Please circle your **GENDER:**
Male Female

2. Please provide your **AGE:**
_____

3a. Please provide your **NATIVE** language:
_____

3b. Do you speak any other languages? If yes, please specify below.
_____

4. Do you have a previous University degree? Please indicate the degree
No Yes, specify_____

5.Please indicate the year in the Early Childhood Education Program you are in:
1st 2nd 3rd 4th other: _____

6. Do you have a minor degree? If so, please specify
No Yes, specify_____

7a. Please provide the number of course (s) you have taken related to reading education
_____

7b. Please provide the reading education course subject(s) you have taken (e.g., introduction to elementary-level reading, assessment in early childhood reading, children's literature, content area literacy, etc.):

8. Have you previously, or currently work with children? In What capacity (tutor, daycare worker, teacher, etc)?
Please Describe:
Subject area:
Grade of children:
Years experience:

Definitions

Please define the concepts below to the best of your ability. If you really don't know, you may write "I don't know".

1. Phonemic Awareness

2. Literature Circles

3. Guided Reading

4. Matthew Effects

5. Round Robin

6. Read Aloud

7. Sustained Silent Reading

8. Print Exposure

9. Phonology

Language Arts Activity Grid

(adapted from Cunningham, Zibulsky, Stanovich & Stanovich, 2009)

According to the MELS, in Cycles II & III (grades 3 & 4, and grades 5 & 6), main language instruction (eg. English Language Arts) is allocated seven hours per week. Below is an example of how these seven hours could be distributed over the week. Please complete the grid, indicating on what you would spend your English Language Arts teaching time in a grade 5 class, over the course of one week. Be as clear as you can, detailing the teacher's role and the students' role in each activity. Please also indicate the **amount of time to be spent on each activity**. Keep in mind that the hours allocated per day do not necessarily have to be taught consecutively; they can be broken into smaller chunks. Eg. A two hour period does not have to be made of up one two hour activity.

Example of a Social Studies lesson

Monday (1.5 hours)	**Teacher starts KWL (Know-Wonder-Learn) chart with students, asking what they know about New France and 13 Colonies (20 min)** **Students get into groups and read informational text (textbook) independently, and then discuss and summarize key facts (35 min)** **Teacher divides student into two groups, representing New France and 13 Colonies. Each group begins to design a brochure advertising the benefits of their territory (35 min)** **Homework: Students are asked to come up with one question they would like answered about New France or the 13 Colonies**

Monday (90 min)	
Tuesday (60 min)	
Wednesday (120 min)	
Thursday (60 min)	
Friday (90 min)	

Author Checklist

Below you will find a list of names. Some of these names are popular authors and some are not. Please read the titles and put an **'x'** beside the names that you recognize as being **real authors**. Please do not guess. Remember, some of the names are not real, so guessing can be easily detected. Once again, **please do not consult outside resources.**

EXAMPLE:

Author	'x' real author
Dr. Suess	X
Jane Doe	
John Smith	

If you knew that Dr. Suess was an author, then you would place an 'X' beside his name. if you weren't sure whether Jane Doe or John Smith were authors, then you would NOT place an 'X' beside their names.

Author	**Pls 'x' real authors, Do not guess.**		**Author**	**Pls 'x' real Authors, Do not guess**
V. C. Andrews			Robert Emery	
Isaac Asimov			Jeffery Eugenides	
Margaret Atwood			Gordan Korman	
Jean M. Auel			Timothy Findley	
Russell Banks			John Flanagan	
David Baldacci			Robert Fulghum	
Sharon Creech			Diana Gabaldon	
James Dashner			Howard Gardner	
Roald Dahl			Elizabeth George	
Martin Ford			Stephen J. Gould	
Cornelia Funke			Sue Grafton	
Elliot Blass			Andrew Greeley	
Christopher Barr			Sheryl Green	
Lauren Benjamin			John Grisham	
Carol Berg			Alex Haley	
Pierre Berton			Mimi Hall	
Thomas Bever			Frank Herbert	
Maeve Binchy			S. E. Hinton	
Judy Blume			Erin Hunter	
Dan Brown			John Jakes	
Jennifer Butterworth			E.L. James	
Katherine Carpenter			Erica Jong	
Barbara Cartland			Wayne Johnston	

Agatha Christie			Robert Jordan	
Noam Chomsky			Frank Kiel	
Wayson Choy			Laurie King	
Tom Clancy			Stephen King	
Arthur Clarke			Jeff Kinney	
Suzanne Clarkson			Naomi Klein	
James Clavell			Sophie Kinsella	
Suzanne Collins			Dean Koontz	
Jackie Collins			Judith Krantz	
Stephen Coonts			Louis L'Amour	
Edward Cornell			Margaret Laurence	
Patricia Cornwell			Ursula LeGuin	
Robertson Davies			Madeleine L'Engle	
W. Patrick Dickson			Pricilla Levy	
C. S. Lewis			Gary Paulsen	
Lois Lowry			Philip Pullman	
Robert Ludlum			Daniel Quinn	
Alex Lumsden			Anne Rice	
George R.R. Martin			Mordecai Richler	
Ann Marie McDonald			Rick Riordan	
Morton Mendelson			J.K. Rowling	
Stephenie Meyer			Rachel R. Russell	
Janet Evanovich			Robert J. Sawyer	
James Michener			Miriam Sexton	
Rohinton Mistry			Carol Shields	

Christopher Moore			Sidney Sheldon	
Lucy Maud Montgomery			Robert Siegler	
Michael Moore			Lemony Snicket	
James Morgan			Danielle Steel	
Alice Munro			Mark Strauss	
Katherine Paterson			Destin Shaw	
M. Scott Peck			Amy Tan	
David Perry			Miriam Toews	
Kate Pullinger			Alvin Toffler	

Children's Title Checklist

Below you will find a list of names. Some of the titles are popular children's books and some are not. Please read the titles and put an **'x'** beside those that you recognize as coming from real books. **Please do not guess**. Remember, some of the titles are not real, so guessing can be easily detected. Once again, **please do not consult outside resources**.

Children's Title	"x" real Title		Children's Title	"x" real Title
Are You My Mother?			Goodnight Moon	
Backyard Safari			Grandma and the Pirates	
Bartholomew and the Oobleck			Guess How Much I Love You	
Because I Love You			Harold and the Purple Crayon	
Bedtime for Frances			House on East Eighty-Eighth Street	
Biscuit			If You Give a Pig a Pancake	
Blame it on Billy			Jamberry	
Blueberry Kazoo			Kofi and his Magic	
Brown Bear, Brown Bear, What Do You See?			Moo Baa La La La	
Chicka Chicka Boom Boom			My Friend the Mailman	
Chrysanthemum			Oh, the Places You'll Go!	
Clean up, Carter!			Open Up	
Click, Clack, Moo: Cows That Type			The Runaway Bunny	
Cootie Catchers			The Adventures of Chatterer the Red Squirrel	
Corduroy			Lazy Cat, Lazy Cat	
Caps for Sale			Colors of Me	
Danny and the Dinosaur			The Fall of Freddie the Leaf	
Dog Heaven			The Going to Bed Book	
Down by David's Pond			The Last of the Really Great Whangdoodles	

Down by the Sea			The Muffin Maker	
Eloise			The Rabbit Acrobats	
Father Bear Comes Home			The Story of Ferdinand	
Flat Stanley			Wacky Wendell	
Follow The Drinking Gourd			What Rhymes with Orange?	
Gerald McBoing Boing			Where the Wild Things Are	

Appendix B
Coding Schemes

Declarative Knowledge Tasl:

2. Literature Circles:
- Students grouped by book choice, NOT by ability
- each student assumes rotating roles to aid comprehension
- like book clubs for children, student lead

3-point answer: *"Small groups of children who are brought together based on book choice, Each child takes on a different role and it works on comprehension"*
2-point answer: *"Each child chooses a book (1st, 2nd, 3rd option), placed in groups based on choice. Children are assigned a specific role each time the group meets."*
1-point answer: *"A group whose members discuss a book(s) that they've read. They delve deeper into the story as a group."*

3. Guided Reading:
- Small group reading instruction
- students grouped by ability (homogenous)
- teacher provides differentiated support in developing reading proficiency

3-point answer: *"Grouping by ability. Scaffolding. Small groups. Able to answer questions. Can teach reading strategies."*
2-point answer: *"Reading in a small group with the teacher. Uses the ZPD."*
1-point answer: *"The teacher guides the children's reading by preparing them, asking questions, having them go back to text, etc."*

4. Matthew Effects:
"Rich get richer, poor get poorer"
- Readers who struggle will read less for fun, readers who are good will read more. The struggling ones won't get better, the good ones will
- The gap continues to widen
- Teachers should strive to encourage print exposure to level the playing field

3-point answer: *"Children who love to read for pleasure (print exposure) will continue to improve reading abilities while the children who do not enjoy it will not improve. It is our job as teachers to lessen this gap. Books of interest!"*

2-point answer: *"Rich get rich, poor get poorer; better readers will continue to get better, bad readers will get worse."*

1-point answer: *"The rich get richer."*

5. Round Robin:
- Students read aloud one after the other around the room
- text chosen by the teacher, everyone must read out loud
- has more adverse affects than good - does not necessarily improve reading and might cause anxiety

3-point answer: *"Very bad/ children are forced to take turns and read aloud a section of a book in front of the class."*

2-point answer: *"Each student has to read a part of the novel aloud. Can create embarrassment."*

1-point answer: *"Go around reading aloud."*

7. Sustained Silent Reading:

- Students read individually and silently for a given amount of time
- a book of their choice
- teacher should be reading as well

3-point answer: *"Students read independently their own book for a certain amount of time. Teacher reads too."*

2-point answer: *"Reading silently for a longer period of time."*

1-point answer: *"Reading to yourself."*

8. Print Exposure:

- Reading done for pleasure
- makes students better readers
- yields a multitude of cognitive benefits

3-point answer: *"Reading done for pleasure! Improves many things such as fluency and vocabulary. Extremely beneficial!"*

2-point answer: *"Pleasurable reading. A lot of benefits."*

1-point answer: *"Reading anything leads to print exposure. A storybook contains words and words are print. When you read you are exposed to print."*

Procedural Knowledge Task

Each answer out of 3 points: one for labeling practice as either good, "bad" or dependent on purpose, and two possible maximum points for explanation. Full marks awarded to students who correctly identify practices AND provide comprehensive explanations as to why something is good or bad.

If a "bad" practice is identified as good, or vice versa, 0 points will be given.

Below are a series of short answer questions. Please read them carefully and answer.

Mrs. Johnson is reading a novel with her fifth grade class. She has each student read aloud, line by line, taking turns around the classroom. What do you think of this teaching practice?

- *bad practice*
- *Round Robin*
- *This is bad practice because no one reaps any benefits from this practice. Good readers are only doing what they know how, poor readers are dreading as they wait their turn. The good readers suffer listening to the weaker readers, and the weaker readers are put on spotlight.*

3-point answer: "Round Robin, bad. Poor readers are put on the spot. Students are focused on their parts and don't pay full attention."

2-point answer: "I don't feel that this is a good practice. It separated the strong readers and the struggling readers."

1-point answer: "I don't agree with it. I think it should be done in smaller groups."

Mrs. Johnson overhears her Grade 5 students discussing the Percy Jackson books at the lunch table. Her students seem very excited. She decided to show them the movie that week. What do you think of this teaching practice?

- *not a good practice - though the teacher is listening to her students*
- *not necessarily relevant to literacy*
- *A better practice would be to build on the reading experience, not show the films*

3-point answer: "I think she should have done a lesson on the book to focus on the book and as a final lesson, once everyone has read the book, she can do a special movie day and ask the students about the difference between the books and movie."
2-point answer: "I believe this is a positive initiative but requires a thought-out process. Id the teacher decides to follow through with this process, he or she should have some writing material during the movie, for the children to reflect on what they are viewing. This will offer certainty throughout the movie experience."
1-point answer: "I think it's great to extend the students' comprehension of a topic that excites them."

Mrs. Johnson dedicates about an hour a week to students reading and discussing various books, including popular graphic novels and books on the Children's and Young Adult bestseller lists. What do you think of this practice?

- *good practice*
- *exposure to different types of books helps tune children into books, also makes recreational reading more relevant and relatable*
- *this leads to print exposure (fosters a love for reading)*

3-point answer: "I like the exposure to different books. Every student is different and may enjoy reading different books. We want to encourage reading."
2-point answer: "I thin this is great! It will allow for some students to discuss topics that they love and appreciate, or for other students to learn something new."
1-point answer: "An hour a week is not enough!"

Mrs. Johnson spends some of her English Language Arts instruction time working with small groups. For example, she takes a small group of students who are working at the same level and spends the time talking about specific reading strategies and reading texts that are appropriate for their level. What do you think of this practice?

- *good practice*
- *this is called guided reading: it enables the teacher to teach specific comprehension strategies*
- *also helps teacher to monitor the students' progress*

3-point answer: "I think this is a great practice and allows all students to benefit! Because they are scaffolded according to their level and due to this design, about to better reach their zone of proximal development."

2-point answer: "This is good. It helps students work on their weaknesses. However, must be done in such a way that poorer readers don't feel ostracized."

1-point answer: "Two thumbs up! It's a great strategy to do more in-depth learning and it helps teachers keep an eye on shy or quiet students."

Over the years, Mrs. Johnson has taught several grades. She has noticed that the best readers in Grade 1 seem to also be the best readers in Grade 6 and also to enjoy reading more for fun. What do you think about this observation?

- *good observation*
- *The Matthew Effects: children who get off to an early start in reading are likely to enjoy it more and read more for pleasure, whereas weaker readers are unlikely to do the same*

3-point answer: "This seems to be true. They may be exposed to a literate household. Also, if they like reading, they may do it often which may be why they're great readers."
2-point answer: "It's a fair observation and I could see the truth in it. It's difficult to break the cycle of these children who are not as good readers and as a result care less for reading (which will not help them improve)."
1-point answer: "A positive observation. It is important to foster the love of reading very young."

The teaching neighbour of Mrs. Johnson (Miss Kay) spends the majority of her Language Arts time reading a novel aloud to her class. Miss Kay says reading aloud allows children of all different levels hear the same book. What do you think about this practice?

- *depending on the purpose of the exercise, not necessarily the best practice*
- *read aloud does nothing to improve students reading skills, but it can be valuable for other readings: listening comprehension, breaching sensitive topics, general class enjoyment or bonding*

3-point answer: "In terms of vocabulary there is a benefit. Also in terms of listening comprehension. However, children learn what they are doing. If children are not able to decode, they cannot read. Decoding is not learned by listening to someone red."
2-point answer: "I believe that storybook reading is positive and beneficial to a certain extent. For example, it helps with listening comprehension but does not with decoding."
1-point answer: "I think it is good to read a book to the class that is at a more advanced level than the students."

LAAG Coding Scheme

Coding Scheme for LAAGs
Descriptive Coding (Saldaña, 2013, p. 87)

Time allocation:
- where not specified, one chapter of reading will be coded as 15 minutes
- this applies to homework too (MELS Homework and Studying Supporting and Guiding my Child - no more than 60 minutes at the end of Elementary School, total)

For the purpose of this study, the focus will be on reading.

- Activities that pertain to writing (eg., journals, creative writing, script-writing, including editing and revision processes, brainstorming) will be coded was WRITING
- Activities pertaining to vocabulary (e.g., finding unknown words, finding definitions) will be coded as VOCAB
- Activities that involve presenting (e.g., plays, skits, book talks, Hot Seat, etc.) or discussion (e.g., grand conversations, review, reflections, KWL charts) will be coded as DISCUSSION (this includes the listening component for the students who are not presenting)
- Activities that involve students drawing or sketching, watching a film, that are celebratory (parties, tea party), or that pertain to playing games (e.g., crosswords, word searches, free time, trivia games, etc.) will be coded as CELEBRATION
- Assessment activities (tests, quizzes) will be coded as ASSESS
- Activities in which the teacher "explains", lectures or explicitly "teaches" will be coded as LECTURE
- Activities in which students are asked to research given topics (e.g., project-based research, gathering news reports) will be coded as RESEARCH
- Activities in which students are in transition (e.g., explanation of homework, asked to get into groups) are coded as TRANS

  All activities pertaining to reading will be coded as READ but these activities will also have a subcode pertaining to the type of reading (Saldaña, 2013, p. 77).

Types of reading:
- when the teacher is reading out loud, when students are reading out loud, taking turns (e.g., Round Robin) or when students are reading in small groups or pairs, the code will be READ: OTHER READING
- when students are reading independently, or when the Activity Grid just states "Children read" (i.e., vague indicator of reading), the code will be READ: CHILD READS (this also includes library visits, and also activities in which students are rereading such as comprehension questions, segmenting into story grammar elements, go back and find examples)

When none of these codes can be applied, because the activity is not specific enough, they should be coded as UNCODABLE

Appendix C
Intervention Scripts

Week #1

You may have already come across the term "print exposure" at this point in your education. But what exactly is it? What do researchers and educators mean when they refer to print exposure? Any guesses?

While "exposure to print" is usually a good guess, it won't get you any full marks on a test. What it primarily refers to is reading done for pleasure, outside of school. Specifically, it refers to reading that is fun and done for enjoyment. It doesn't refer to academic reading that you do for classes - it's when you read what makes you happy, and when you're totally immersed in what you're reading. It feels frivolous and it feels like a waste of time, because it is fun and it brings you pleasure. Print exposure is reading for fun.

What is print exposure? (*Reading for fun*). It's the kind of reading that feels like it's a guilty pleasure. Think back to the last book that you really enjoyed. How did you feel as you were reading it? What was the book? Did you feel like you were working or learning or straining your brain?

But what if it told you that print exposure, (*reading for pleasure*), is actually all kinds of good for you? That while you're reading for fun and enjoying yourself, you're doing some really amazing things for your brain? What if I told you that print exposure - which is *(reading for pleasure*) - when you're reading something like Jackie Collins, or 50 Shades of Gray is actually positively affecting all kinds of things?

Research over the last thirty years and more has shown that people who have higher levels of print exposure, so people who read more for pleasure, are just smarter people.

How can print exposure (*reading for pleasure*) be measured? Well, you actually completed the checklists that are most frequently and widely used to measure print exposure - the Author Recognition Test and the Title Recognition Test. If you remember, it's that long list where real published authors are listed next to "foils", so fake authors and you are asked to check off the names of people you recognize to be real authors. Some of the authors on this list are people like E. L. James (50 Shades of Grey), Danielle Steele, Jackie Collins, George R.R. Martin, Stephenie Meyer (Twilight) - all of these are popular writers. Print exposure, so reading for pleasure, is not limited to highbrow, high-quality literature - unless of course that is what you enjoy reading. It includes things that are considered "guilt pleasures". This is an important distinction to keep in mind.

People who score higher on this checklists, and therefore had higher levels of print exposure, meaning (*they were reading more for fun)*, do better in school. They are better readers. They do better on measures assessing declarative knowledge. This means that they just know more facts and trivie. They are exposed to more print, but they are also exposed to more information.

High levels of print exposure - which is (*high levels of reading for fun)* - are positively correlated with performance related Comprehension, Reading Fluency, Vocabulary, Spelling and Phonological Abilities. This means that people who read more for pleasure have larger

vocabularies, are better spellers and are able better to detect and manipulate sounds in words. This is important because when you're working with children, phonological abilities are closely related to reading abilities. The more a child reads, the better they become at it, because reading increases all of these abilities, which in turn makes reading easier. We call this a reciprocal causation: you're good at something, so you do it more frequently, and then you become better at it.

Keep in mind that this refers to pleasurable, fun and engaging reading. Something else that happens when you read more for pleasure, so when you have higher levels of (print exposure), is that you can actually make up for lower levels of cognitive abilities. What this means is that researchers found that when they took their sample and split them in the middle, based on their scores on a cognitive measures test - and here they tend to use something like Raven's Matrices most frequently, because it's a non-verbal intelligence test - they found an incredibly fascinating effect of levels of print exposure, which refers to (*how much they read for pleasure*). This sample consisted of undergrads, people like you guys, and those who scored lower on cognitive measures, but had higher levels or print exposure - (*reading for pleasure*) - actually outperformed a group of undergrads that had higher cognitive abilities and lower levels of print exposure, meaning that they did NOT *(read for pleasure*).

This is basically like the academic, literacy research equivalent of telling you that chocolate is AS GOOD for you as a balanced, low-carb, high in vitamin diet. Something that feels good and is fun is actually doing a very very good thing for you. Reading for pleasre is like neuroscience chocolate - it feels like a frivolous fun thing but it is making you smarter. In fact, they found that

people who read more for pleasure had thicker cortexes - READING FOR FUN MAKES YOUR BRAIN BIGGER. Kids with higher levels of print exposure scored higher on theory-of-mind development measures - meaning their theory-of-mind development progressed faster and became more complex sooner if they had high levels of print exposure.

Why is this so important? What it means is that when you get kids reading, you're giving them all of these positive things. Some kids will come into your classroom and tell you about their favourite books. Others will come in and say that they don't like reading. Your point should not be to force them to love what you choose for them to read. Your point should be to expose them to as may different kinds of books as possible, books that they'll like, and to give them as many opportunities and as much encouragement to read what they like. While you as a teacher have a curriculum to teach, and you cannot always accommodate every student's taste, you also cannot force them to love everything you choose. The point is that when a child finds something to read and enjoys themselves, they are doing something good. They are increasing their Comprehension, their Reading Fluency, their Vocabulary, their Spelling, their phonological abilities, their general knowledge, and they are getting better at reading.

Can you name three skills that print exposure affects?

Can you give me a definition of print exposure?

Can you tell me what you think this means for your as a future teacher?

Now let's just recap for a second: what exactly is print exposure? What are some of the benefits? Why is it important?

(*Reading for pleasure. More world knowledge. Increases vocabulary, spelling, phonological abilities, reading speed, comprehension. Theory of mind. Cortical thickness. Better academic performance*.)

Imagine for a second that you happen to be in a class where ice-skating is core component of your curriculum. Everyone is expected to ice-skate, and as the curriculum gets harder, you're not only expected to straight up ice-skate, you're also supposed to choreograph routines, and do jumps and tricks. Imagine that you're bad at ice-skating. FYI, ALL KIDS ARE TERRIBLE AT ICE SKATING WHEN THEY FIRST START! They fall, over and over and over again. It looks like a form of punishment to watch 4 year olds skate! But let's talk about me….I have bad balance, my ankles hurt when I skate, and braking is difficult. Falling hurts. Getting up is almost impossible BECAUSE THE ICE IS SLIPPERY PEOPLE!!! Because I spend all day skating at school, and struggling with it, how likely is it that I am going to go home and practice skating some more? Not very likely right? In fact, I'd probably rather do anything BUT skate. But you (*pick student in class*), are actually slightly less horrible than everyone else. You still fall, and it's still hard, but you get a glimpse of the light a the end of the tunnel. You get a taste of success, so you go home and you put on your skates and you skate in your back yard (on the rink that your dad 'waters' ever day) and you play hockey with your friends at the local rink, or you go and google a new trick to try, or practice a routine. You're good and every time you do it, you become better. What's going to happen with each of you in the long run? The person who NEEDS the extra practice (which would be me in this case) goes home and would rather do ANYTHING but practice more. And the skater who is doing ok goes home and practices for fun.

(*One will stay bad, one will get better*).

The same thing happens with reading. You're going to have kids in the classroom who come in and are already reading. They're good at it, it's easy for them, and those are the one who, because they find it easy, think it's fun. When you give them free choice, they're the ones that are gonna pick up a book and sit in a corner and read, escape to Hogwarts or Narnia or Panem for a few hours (if you have no idea of where these places are, it's ok, you've come to the right place for help: "Hello, my name is (blank) and until 381 I used to be a nonreader).. They'll be immersed in what they're doing, they're having fun, their cheeks are getting pink with excitement (mine do when I read something really good), and they are doing what? (*Raising levels of print exposure, reading for pleasure*). The ones who struggle when they read in class, who have to fight to decode every word, who struggle to decode and don't really reap the enjoyment that comes with comprehension? How likely are they to pick up a book during free choice?

So what happens with each of those kids? Your reader is going to keep reading and keep practicing and is just going to keep getting better. That kid is going to start with Judy Blume and Diary of a Wimpy Kid and end up with Tolkien and Harry Potter - that kid will get faster, his or her vocabulary will get bigger, and all of those great things that come with print exposure will be happening because he or she is reading for pleasure, and enjoying it and immersed in what he or she is doing. Your kid that doesn't like to read? He or she is not going to be improving those skills at the same rate, or at all, if he or she never receives any support. The gap in the reading abilities is going to widen over the years, as the first kid continues to read for pleasure and the second never really starts.

This is called the Matthew Effects, and its basic definition is: the rich get rich, the poor get poorer. So, the Matthew Effects is this idea that as the good readers read more and become better, the poor readers read less and do not become better, and this gap between rich and poor, good readers and poor readers, continues to widen.

Can anyone explain it back to me?

So why is this important for you as a teacher to know?

As we talked about, high levels of print exposure, which is (*reading for pleasure*) are positively correlated with a wide array of benefits - name some (*vocabulary, spelling, phonological abilities, cortical thickness, theory of mind, being smart, reading speed, comprehension*). Also, we know that people who read more can make up for perhaps modest levels of natural cognitive ability. your job as a teacher is to make sure that you are doing everything you can to ensure that your students succeed. These Matthew Effects are real and you will see them happen.

What do you think you can do to help level the playing field?

(*Print exposure*)

Exactly - think back to the ice skating example. Imagine all of a sudden that you master one small skill. Having a really knowledgeable teacher can help with that, but that's a whole different lecture… so let's take TEACHER KNOWLEDGE and put it over here as something we are aiming for… but you master one small skill. Now you start to see that this impossible thing we call ice skating might be doable. Now what if your teacher played a piece of music that just inspired you to choreograph something. And you really just wanted to skate to this amazing song. So you try and work really hard. You start practicing because that song and how you feel when you skate to it makes you want to get better and practice more. Your teacher turned you on to something that made it worth it.

This is the same thing that happens in reading. Imagine your reluctant reader. If you manage to get this kid tuned into reading, by giving him or her something that's interesting and engaging, at the right level, and that feels like it's more fun than effortful? What do you think will happen? What would the consequences be?

(*More reading for fun, higher levels of print exposure*)

Research shows that the earlier kids start to read, the better it is for them. Why? The better they are, the more they do, the better they get - reciprocal causation. (*The better they are, the more they do, the better they get - reciprocal causation*). But research also shows that when initially reluctant readers get off to a later start, they can catch up if they read for fun, so if they have high levels of (*print exposure*). This means that even when you have a student that's struggling, if you get them tuned into reading, if you manage to get them excited and find the gateway book, if you will, if you manage to make reading FUN, and they start to do it for fun, they can catch up and that gap the Matthew Effects refers to becomes less and less.

Do you see the connection?

(*Discuss - answer questions*)

Week #2

Let's just take a moment to recap for a second. What is print exposure? (Reading for pleasure). Can you name some positive outcomes that are associated with high levels of print exposure? (Comprehension, fluency, vocabulary, spelling, phonological abilities, theory-of-mind, cortical thickness).

We talked about how print exposure positively affects children and adults alike, and how important it is. But how can this knowledge be actively implemented in a classroom? How does this knowledge help you as a teacher?

The first thing to keep in mind is that when we're talking about reading for pleasure, the material is going to vary greatly across the students in your class. And if you are a good teacher who is switched on to what your class likes, what you assign as reading WILL be pleasurable – <u>even though</u> you assigned it. Take for example Ranger's Apprentice. We have assigned it as a reading, but from what I've heard, you are enjoying it! Based on what normally happens in this class, I predict that some of you will REALLY like this book and go on to read a number of other books in this series, maybe some of you will even read all 11 books. If so, you will be greatly improving your print exposure. For those of you who stop at this book, you will still have improved the knowledge you need to do you job well as a teacher because you will now know one more book that can be recommended to future readers in your classes. So as we are talking today I want you to keep two things separate 1) Your own print exposure – how much you, as a teacher read for pleasure and 2) Your KNOWLEDGE of print exposure – how well equipped you are to foster the love of reading in your students.

So let's talk about your own print exposure for a minute. Last week as you were reading (and hopefully enjoying) the Ranger's Apprentice, you were positively affecting your vocabulary (I now know what "fractious" means), and your spelling. Now because this is a historical fantasy novel, it might seem like you are not learning any 'facts' in it, but that is misleading. In fact, your declarative knowledge is still improving by learning detailed things about archery and swordsmanship that would most likely hold true in all sorts of stories. You're also practicing reading so you're improving your speed and fluency. You will have read that book, and your peers who have not yet taken EDUC 381, will have not. You've experienced all of the benefits that come with reading a book you have enjoyed. Some of you will finish Book 1 and continue to read the other 11 books in the series. But even if you've "just" read the one, you've still been exposed to the benefits of print exposure. JUST THE ONE IS BETTER THAN NONE.

Take a second and think about it: what were your best memories related to reading in school? Did you have teachers who made reading interesting? How did they do it? Or was reading painful?

In one study, pre-service teachers who themselves stated that they did not enjoy reading cited unpleasant reading experiences at school as a reason. Specifically, they remembered both teachers who failed to make reading exciting, and boring reading materials as reasons.

Does anyone remember those read alouds that teachers do, where everyone reads in turn around the classroom? Each student gets a paragraph and takes turns to read out loud? Remember that?

Remember what you were doing while you were waiting for your turn? Were you listening to what your peers were reading, and maybe exercising your listening comprehension? Or were you just counting down until it was your turn, practicing your sentence over and over in your head? That's called Round Robin reading. Teachers think they're doing something beneficial for their students because they're practicing reading out loud, and listening skills, and everyone gets a turn. But really, it's almost like when you take something horrible embarrassing and make it public. Imagine you're going surprise bathing suit shopping! It's already kind of awful in and of itself. But you wake up in the morning and someone comes and says, "SURPRISE! YOU'RE TRYING ON BATHING SUITS TODAY" and then just hijacks you. Even worse, imagine that you and everyone else trying on bathing suits has to come outside of the changing room and stand on a pedestal under a spotlight, for every single suit you try on. And all you can think is "Oh boy, I'm not prepared for this." Some people are super comfortable in bathing suits, others are not. It's the same with reading - some kids are totally okay with reading out loud. They'll volunteer to do it all the time. Other kids will start sweating at the thought of having to read something they've never read before out loud to their peers. It's as if I had said to you at the beginning of class, "Okay, get your books ready because we're each gonna be reading out loud from Ranger's Apprentice." Some of you would have been like UGH WHY - I could be doing so many better things than reading this book out loud, like, I could be at home watching Vampire Diaries (is that still on on Thursdays? I haven't had a Thursday night at home in like 5 years.) Others of you would have started worrying, thinking "I don't WANT to read out loud in front of these people" and you would have spent this whole time stressing about having to read. Round Robin is a PAINFUL READING EXPERIENCE. It's not just painful for the struggling readers, it's painful for the good ones, too. It HURTS listening to people who struggle, not only because

you might be empathetic and hate that your peer is suffering, it's also just frustrating to hear them do something that's so easy to you. So Round Robin is PAINFUL.

We don't want you to be one of these teachers. We want you to be the one of the teachers who turns children INTO readers, and not off of reading. How can you be those inspiring, life changing teachers? How do you make reading interesting?

One major element in engagement and motivation is the element of choice. You cannot expect that your whole class will like a book you choose, no matter how great it is. Think back to Ranger's Apprentice. It's fantastic and most of you seem to be enjoying it, but I'd bet that there are a few of you who would rather be reading something else. That's ok. But if you've done a good job MOST of your class will like the book. As a teacher, it's going to be very difficult to please all of your students but that shouldn't stop you from doing at least one classroom book a year. If you don't agree, just think about what it would be like if you had to have 100% of your class LOVE every movie you showed in class. That will probably never happen, this student will have already seen it, it will not be that students favorite… that's ok as long as it's appropriate and enjoyable for most of your class. You don't need 100% agreement – but you also shouldn't even show a movie that is grossly inappropriate/scary for any of your students. There is a difference between "not your favorite and will give you nightmares" It's a balance, but it's achievable.

As mentioned last week, one of the goals you should have as a literacy teacher in order to foster a love for reading among your students is to expose them to as many different kinds of books as

possible. You're going to have some students who love reading and who are comfortable picking what they want to read. Forcing them to read all of your choices is more counterproductive for these kids. But you're also going to have some kids who say that they don't like reading. Here is where a really great teacher will act as a matchmaker between those students and books that they might love. Here's where you expose them to as different books and offer as many different reading experiences as possible. It's like when someone is an athlete, like say Vera (I'm gonna pick on you for a second again) who ice skates, but me, thinking I'm being helpful will tell her, "NO. You have to try TENNIS now." And she's just gonna be like… But I like skating… Why are you making me do tennis? And meanwhile there's Jen, for example (we all know this isn't true) who HATES sports and I know that's bad and I need to fix it. So one week we try yoga, then we try dance, then we try running, until we find something she likes.

What is important is that you use as many "real" texts as possible. By that I mean texts that students might read for pleasure outside of school. Using novels and books students come across in bookstores, and talk about after school, is more engaging than texts created solely for the purpose of comprehension exercises. No one has ever stayed up all night because they couldn't put the textbook down… the same is true of children's text books.

Texts are engaging when students can relate to them on a personal level and when they can connect what they are reading to what they know.

In one incredibly study, teachers decided to try a new approach to Language Arts instruction and pre-selected about 200 books, popular fiction and non-fiction titles, appropriate for their

students' age levels. At the beginning of they year, they held a series of book talks, telling the students about each book, because they had read each one. They told their students that they were allowed to choose their own books and read at their own pace. And the results were amazing - some kids began the year saying that they hated reading, and ended the year as newly converted readers. They said they felt smarter (declarative knowledge), they made friends with people they never talked to before based on shared book interests (there's a link to empathy), they felt that they did better at school (which they actually did based on test performances), and they felt that they were better people at the end of the year.

Another simple strategy is to leave time for Sustained Silent Reading, but to also include the steps that are so often forgotten. Not only do your students get to chose what they are reading, and spend a designated amount of time reading. You as a teacher also read. And then you set aside time for discussion. Your students can talk about what they are reading. This is taking the reading and making it relevant. It's exciting and engaging to talk about what you're reading, especially if it's fun and brings you pleasure.

Another strategy that you will be experiencing first hand yourself is the use of literature circles. How it works is that you pre-select a set of books and present them to your students. Each student choose a book. Then groups will be made around book choices, NOT around reading ability. It's difficult to give everyone their first choice, and it won't happen every time you do a literature circle, but there still is a sense of ownership that comes with choice. Groups usually consist of four or five people, but this can be adapted to suit your needs. Each student will be responsible for a different role each time the circles meet. Each of these roles focuses on a

different level of comprehension. Students get to choose what they are reading, and they each have a turn (sometimes more than one) at each of these roles, that help develop comprehension. The roles scaffold what expert readers do when they are reading…basically, these are book clubs for children.

Again, with literature circles, students are NOT grouped by ability. There are times when you're going to want to group students by ability and there are merits for both. In fact, you should be using both kinds of groupings, but there are different reasons for using both. Literature circles are engaging because students get to read what they WANT. This is not the time for you to tell a student that Harry Potter is too hard - if that kid wants to read Harry Potter, he or she will find a way. They are already quite motivated because it's the book they want to read. But if you use homogenous groupings, so grouping with students of the same ability, you should have a different goal.

One way to work with grouping by ability is Guided Reading. Here, you group students based on their reading levels. Of course you're not gonna call them "the slow readers" and "the whiz kids" but don't think you're fooling anyone when you call one group they yellow group and one group the green group - kids are whip-smart. You can do things to keep them guessing about how you're making these groups, there are ways to make it less obvious that that's what you're doing. We're going to be talking some more about this in class. But when you do work with them based on ability, this is the opportunity to teach them strategies to make them better readers. This is where you *would* be reading aloud with children, and where, because you are working with a small group, you can provide individual attention and feedback as they read. Because your

students are grouped by ability, it means that the solid readers aren't showing up the ones who struggle. You can correct mistakes as they arise, and encourage them as they go. Guided reading involves rereading the text you've selected with your students, so you're practicing fluency. Here, you're improving word recognition and comprehension by rereading the text. You can also focus on vocabulary, or word families, and teach your students strategies that will help them when they are reading independently. You're also asking questions and talking about the text to work on comprehension. This is about skill development. And again, WHAT you are reading is important. You're choosing texts here that are simple enough for the students to feel successful, but where they can still grow with help - classic Zone of Proximal Development stuff.

What we have are some good practices and some bad practices. Each practice has a purpose - literature circles and sustained silent reading might be more geared towards enjoyment, whereas guided reading is about skill development (and skills are necessary to be able to enjoy!). What is important in all of these is the texts that you are selecting. Sustained reading - the kids are choosing. Literature Circles - they're also choosing but from a pre-selection you have made. Guided reading, you are selecting a text that's at the right level. What we're hoping to do is that with this knowledge about print exposure, which is (reading for pleasure), and why it's so important, you'll be equipped to turn your students into readers.

Who can tell me what the merits of literature circles are? (*Student choice, grouped by interest and therefore engaging, rotating roles that cover different aspects of comprehension*)

Merits of Sustained Silent Reading? (*Student choice, self-paced, lets them talk about what they*

are reading) Elements that are often forgotten? (*teacher reads, subsequent discussion period)*

Merits of Round Robin? (*None. Students are neither really reading or comprehending*)

Why would you group students by ability? (*Guided Reading - opportunity to tailor instruction and offer strategies that help with reading comprehension*)