

FOCUSED TEACHER PROFESSIONAL DEVELOPMENT TO
IMPROVE THE LITERACY PERFORMANCE OF MIDDLE SCHOOL STUDENTS
IN ALBERTA, CANADA

BY

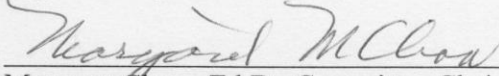
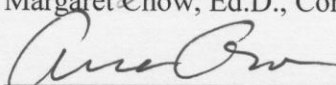
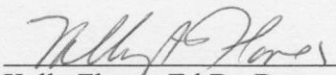
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ABSTRACT

The purpose of this applied dissertation was to examine whether focused teacher professional development in the area of literacy correlated to increased student academic performance in Alberta, Canada. This research study examines the relationship between middle school teachers who incorporated literacy strategies into their daily lessons and student academic ability. Employing a quantitative research methodology, Grade 8 Control and Experimental student groups were measured using a standardized reading screen administered at the beginning and the end of separate school years. Grade 8 cross-subject teachers were given four full-day professional development sessions that focused on high-yield literacy strategies over a 10-month period. Then, examining the two sets of Grade 8 student standardized test scores through a reliability-corrected ANCOVA, a correlation was calculated to determine if teacher professional development had an effect on student performance. Results from the study showed that there was no significant relationship between teacher professional development in the area of literacy and an increase in student academic performance as demonstrated through the Gates-MacGinitie Reading Test (GMRT). The importance of this study is relative to the issue of Grade 8 teachers incorporating literacy strategies into their daily instructional techniques and the global need for middle and high school communities to examine the pedagogical practices of all subject teachers in terms of literacy integration.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Literacy was identified as a major learning attribute and a significant achievement indicator directly related to student academic success (Allington & Gabriel, 2012). From an educational research perspective, literacy was defined as the ability of a student to read and write at a grade-appropriate, or typically developed, level (Anstey & Bull, 2006). Biancarosa, Bryk, and Dexter (2010) indicated that without sufficient access to appropriate teacher-delivered literacy skills and strategies, students were not able to experience learning in an applicable, comprehensive, and meaningful manner.

Bean and Dagen's (2011) applied research, sponsored by the *Elementary School Journal*, found that in the absence of suitable training, teachers cannot offer students the necessary literacy support to realize their full learning potential. Similarly, Shanahan and Shanahan (2008) placed an emphasis on literacy development when they stated that students and teachers alike must continually develop literacy strategies throughout the formal schooling timespan. A review of related research demonstrated that students in all grades and all subject areas benefited from literacy instruction, and proficient teachers from kindergarten to Grade 12 focused on incorporating literacy strategies into their subject areas (Afflerbach, 2012; Deshler, 2013; Shanahan & Shanahan, 2008).

Study Background/Foundation

Through a qualitative research study, the International Reading Association (2010) discovered that the vast majority of teachers in non-primary grades believed that incorporating literacy strategies into daily lessons was an elementary classroom

endeavor. This was enhanced by a perception that if targeted reading and writing interventions were needed, it should be conducted by the English language arts teacher or through resource room personnel. When surveyed, the idea of exploring increased literacy development was perceived as minimally important by secondary science and math subject teachers in relation to subject content in the United States (Allington & Gabriel, 2012).

Another study conducted by Hruby (2011) at the University of Kentucky supported the focus on subject content and found that once students progressed into the upper elementary grades, the development of literacy skills and universal learning strategies were reduced and, in most situations, stopped altogether. A reduction in the focus of literacy in secondary (middle school and high school) teaching professionals had primarily been attributed to the lack of understanding regarding techniques that address specific reading and writing concerns in the classroom (Afflerbach, 2012; Allington, 2009; Hruby, 2011).

The International Reading Association (2010) reported that a typical situation that developed in the later grades was one where teacher frustration increased due to low academic performance and failure to recognize a student's full potential. Afflerbach (2012) believed that this was compounded by a secondary teacher's inability to address specific literacy deficiencies as a result of not having the necessary skills to recognize them. Deshler (2013) noted that student frustration was also high due to a lack of academic success, and this could manifest itself in a variety of discipline issues. Anstey

and Bull's (2006) research indicated that low student performance was not necessarily the result of a lack of intelligence, but rather a student's low literacy level. The investment in teacher professional development, focused in the area of literacy for middle and high school teachers, therefore contributed to higher student academic achievement in all subject areas and a greater teacher performance satisfaction level (International Reading Association, 2010). Afflerbach (2012) and Fullan (2014) highlighted the important role school leaders played in supporting effective professional development and priority initiatives. Afflerbach (2012) believed that the role of school administrator was vital in making literacy a priority in the school by financially supporting teachers with sufficient resources and embedded time to discuss appropriately the learning needs of struggling students. Fullan's (2014) research supported the important role school leaders play when he indicated that school priorities were substantiated when they were seen as sponsored by the principal.

Current State of the Field in which the Problem Exists

Afflerbach's (2012) research discovered that while there was adequate literacy support in Grades 1, 2, and 3, there was a notable absence of comprehensive targeted literacy intervention programs and/or classroom teaching strategies at the upper elementary, middle, and high school levels where the achievement gap was the widest (Afflerbach, 2012; Faggella-Luby, Sampson, Deshler, & Valentino, 2012). As identified by Allington and Gabriel (2012), literacy was viewed as the single most important factor determining a student's academic success, regardless of age. It was also found that

teachers could influence learning the most by infusing literacy techniques into daily instruction (Allington & Gabriel, 2012; Deshler, 2013). Concluding their research, Shanahan and Shanahan (2008) summarized that school and district administration needed to make literacy a priority given the impact that it had on student learning. It was also surmised that because teachers in middle and high school were focused primarily on content, the integration of literacy practices must be mandated (Shanahan & Shanahan, 2008).

The majority of literacy studies in the area of teacher professional development and the direct benefits of that professional development in the classroom focused on early literacy intervention (ELI) programs that used commercially created literacy structures to develop basic competencies in students (Allington, 2009). At the writing of this dissertation study, little research existed in the areas of adolescent literacy awareness and classroom strategies as they pertained to teacher professional development. There existed minimal research that had investigated the use of specific literacy strategies in cross-subject areas in secondary schools.

Afflerbach (2012) considered late literacy intervention as an important area of research given the general societal necessity that, regardless of age, students can continue to develop their literacy skills throughout their lifetimes. Allington and Gabriel (2012) agreed literacy intervention was important and developed research evidence that indicated students continued to develop skills in the areas of reading and writing throughout their academic career. Therefore, teachers in all grades and all subject areas

needed to be cognizant of the benefits of literacy development in terms of increased student performance.

Historical Background

According to statistics released by the International Reading Association, on average, 25% of the Grade 8 students surveyed in the United States in 2008 read below a basic proficient level. This percentage increased to more than 40% in urban areas where English language learner populations were higher (IRA-NCTE, 2009). In Canada, Davies and Busick (2007) reviewed high school standardized reading test scores of students in Vancouver, British Columbia, and found that 20% of Grade 11 students tested in 2006 were reading at a level that was significantly lower than the skill level required to read the majority of textbooks. In the United Kingdom, 16-year-old students who were identified as at risk of not completing school were tested in 2009, and more than 73% had a reading level that was significantly behind (two years or more) their typically developed reading peers (Hattie, 2011).

In Alberta, Canada, a comparison of the 2011-12 year-end Provincial Achievement Test scores in English language arts, social studies, science, and math for students in Grades 3, 6, and 9 offered a reason for comprehensive literacy training needs as part of all teacher professional development. The data showed that overall provincial student performance steadily decreased after the Grade 3 age group (Alberta Education, 2013). An analysis of the Achievement Test Result Multiyear Assessment Report from 2009 to 2012, sponsored by the Alberta Department of Education, suggested that students

in Grades 6 and 9 English language arts programs were maintaining acceptable levels. However, in other core subject areas where literacy was not a daily focus, there was a decline in test scores (Alberta Education, 2013).

Allington (2009) and Afflerbach's (2012) research indicated that an increased emphasis on subject-area content over basic literacy instruction in secondary schools contributed to the overall decline in standardized test scores in North America. In early research, Shanahan and Shanahan (2008) agreed with this observation and pointed to the increased importance of high-stakes testing, elevating the priority of subject knowledge over student comprehension and reading skills. Moje, Overby, Tysyaer, and Morris (2008) forecasted that, with the expansion of information-reliant professions and technology-rich cultures, those who struggled with reading and writing would increasingly find it challenging to function proficiently in society.

Deficiencies in the Evidence

Research in the area of adolescent literacy, particularly the effect that teacher professional development in the area of literacy has on student academic performance, is limited. In the context of primary grades, the benefits of literacy development as part of a teacher's daily repertoire is well documented. Students who learn to read and write in primary grades received strategies to overcome common issues that they may encounter (Allington, 2009). Typically developed Grade 1 or Grade 2 students therefore progressed successfully through the majority of the difficulties associated with reading and writing with their teacher's assistance at an age-appropriate level (Allington & Gabriel, 2012).

According to Faggella-Luby et al. (2012), literacy intervention strategies and programs commonly occurred during the early formal schooling grades where the achievement gap was the narrowest. Literacy intervention programs provided for early elementary students enabled them to progress at an age-appropriate level. Allington (2009) believed that these specific intervention strategies addressed issues in literacy development and provided remedial support for students.

For the last three decades Allington and Gabriel (2012) observed that teacher professional development in the area of adolescent literacy was scarce. Pre-service middle and high school teachers focused on content knowledge rather than understanding how to address specific learning deficiencies students exhibited in reading and writing (Allington & Gabriel, 2012). As a result there were limited ways in which middle and high school teachers accessed strategies that purposefully focused on improving student skills in the areas of reading and writing. Faggella-Luby et al. (2012) identified that embedded and sustained teacher professional development in the areas of reading and writing needed to occur in order to decrease the achievement gap in adolescent grades. To support the assertion of a lack of comprehensive teacher training in the area of literacy, Sparks (2013) discovered that, when encouraged by the school administration, school teams were able to focus on building a culture of change toward a desired outcome. Without defined goals of working towards a common outcome as defined by school or district administrators, unified, progressive improvement would not have taken place (Sparks, 2013).

Addressing the issues of inadequate professional training of middle and high school teachers in the area of literacy remained a concern for reading and writing specialists. Identified in literature, Biancarosa et al. (2010) recommended that literacy must be infused into all subject areas, regardless of grade. Allington and Gabriel (2012), Afflebach (2012), and Biancarosa et al. (2010) all indicated that there was a universal issue in adolescent reading and writing, specifically the lack of training for middle and high school teachers in the area of literacy instruction. This body of research also alluded to the fact that school districts needed to place an emphasis on making literacy an essential element for teacher professional development training for all grades. Allington and Gabriel (2012) described the role of school principals and vice-principals as guiding professional development in the area of literacy. Knight (2007) also believed that school administrators needed to be instructional leaders and coaches, equipped with appropriate knowledge to assist teachers in being aware of new pedagogical techniques in their classrooms. Using regular classroom observations, school administrators knowledgeable in effective literacy practices were able to guide reluctant teachers to integrate literacy strategies into their daily classroom practices far more effectively than those who were not (Allington & Gabriel, 2012).

Problem Statement

The following chapters will explore the possibility of a connection between literacy skills training for teachers and increased literacy levels among students as measured by results of the Gates-MacGinitie Reading Test (GMRT) in Alberta, Canada.

In later grades, subject teachers do not effectively use basic literacy strategies to aid adolescents in their learning, and this results in students not being able to fully realize their academic potential. This dissertation examined research that supported the importance of school leadership in sponsoring professional development in the area of content literacy. A comprehensive literature review indicated that there was an absence of classroom instructional practice outside of the English language arts subject area that concentrated on developing reading, writing, and comprehension skills in students (Afflerbach, 2012; Allington, 2009; Allington & Gabriel, 2012; Biancarosa et al., 2010; Bean & Dagen, 2011; Deshler, 2013). Paige (2011) supported the idea of increased literacy awareness for adolescents, noting classroom literacy practices were essential to all grades and all subjects. Paige (2011) observed that meaningful systemic pedagogical change occurred in school communities where site-based administrators were seen as instructional leaders who promoted literacy reform. The combination of incorporating literacy into all subjects, and having literacy integration supported by school administration were foundational for effective school growth in the area of student achievement.

The general problem addressed in this research study is the lack of literacy professional development for teachers benefited students, teachers, schools, and school districts when a systemic focus was employed (Afflerbach, 2012; Allington, 2009; Bean & Dagen, 2011). School administrators observed the need for teachers, regardless of subject area, to devote time to develop their literacy skills (Bean & Dagen, 2011).

Specifically from a school perspective, site-based administrators acknowledged the importance of incorporating literacy into a yearly professional development plan (Allington & Gabriel, 2012). At the district level, research indicated that senior administrators wanted to ensure that all teachers had access to quality professional development. Literacy integration was seen as a benefit to student academic performance (Bean & Dagen, 2011). Allington and Gabriel (2012) suggested that school leaders should petition the various departments of education to ensure that basic literacy skills were continually enhanced throughout a student's academic career and should be written directly into the curriculum.

Allington and Gabriel (2012) believed that students should be exposed to rich literacy practices and environments on a continual basis, regardless of grade level. In a related study Au and Valencia (2010) found that, through effective communication and community awareness, parents and students emphatically embraced and supported the need for teacher professional development in the area of literacy once the benefits were made public. Specifically, the researchers reviewed in this dissertation explored a possible relationship between providing literacy skills training to teachers and student academic performance as measured by results of a standardized test. Similarly, Biancarosa et al. (2010) discovered that parents and students alike were in full support of professional development that focused on classroom literacy strategies when the positive outcomes were identified.

Specifically, through this research the concept of whether academic achievement in Grade 8 students was affected when cross-subject teachers were given literacy focused professional development over a ten-month time period was explored. Allington's (2009) research in the area of adolescent literacy concluded that initial and ongoing teacher training in the area of comprehensive literacy was absent in many school districts for secondary grade teachers. Moreover, the focus for professional development for middle and high school grade teachers was traditionally subject content- and assessment-oriented (Allington, 2009).

Specific Leadership Problem

Successful reform in schools, indicated through a successful change in teacher practices, is achieved by an effective leadership structure (Sparks, 2013). Researchers found that the active presence and commitment from the school leader ultimately determines the success or failure of an initiative in a school culture (Cole, 2013; Robinson, 2010). Since the integration of literacy into daily lessons for all teachers at the middle and high school levels was a fundamental paradigm shift, it required the cooperation and full support of school- and district-based administrators (Shanahan & Shanahan, 2008).

Fullan (2014) stated that a principal must be a committed lifelong learner if successful change were to take place. Without the support of the school administration, change would occur in an uncoordinated and isolated manner, relying on the desire of individuals to facilitate the limited momentum (Fullan, 2014). However, when systemic

change took place within the entire school, the administration team embraced, supported, and understood the need to enhance pedagogical practices (Fullan, 2014). The role of the school leader has been found to be important in terms of classroom literacy integration.

Purpose of the Study

The purpose of this research study was to investigate the possible correlation between Grade 8 teachers receiving literacy skill training and improved student performance on a standardized reading screen in Alberta, Canada. Specifically, it compared Grade 8 students' pre- and post-standardized test results from the Gates-MacGinitie Reading Test (GMRT), to determine if there was a statistically significant connection between teacher training in student literacy skills development and student literacy levels as measured by the results of a standardized test administered at both the beginning and end of a school year.

Methodology Overview

Employing a quantitative methodology research measure, this study used GMRT standardized test scores as a main data source. Grade 8 students took the GMRT in late September and then again in early May of the same school year in Alberta, Canada. From October to March, Grade 8 teachers from a variety of subject areas and schools participated in four professional development sessions that focused on how to incorporate research-based literacy strategies into their classroom instruction. Each literacy session built on concepts of awareness and integration, with an emphasis on focused classroom strategies for all subject teachers. Results were then analyzed to explore a possible

connection between teachers receiving literacy skills training and differences in student literacy skills as measured by results of GMRT scores.

Using a reliability-correlated analysis of covariance (ANCOVA) the Grade 8 GMRT student data was compared to Grade 8 GMRT data from the previous year when teachers did not receive training in student literacy skills development. The independent variable of this research was teacher training in student literacy skills development. The dependent variable for this study was student GMRT scores. The GMRT scores of the Control Group of Grade 8 students, those whose teachers had not received training in student literacy skills development, were compared to the GMRT scores of the Experimental Group of Grade 8 students, those whose teachers received training in student literacy skills development. Through the use of a reliability corrected ANCOVA, the early school year and late school year GMRT scores of Grade 8 students whose teachers did not receive training in student literacy skills development (the Control Group) were compared to early school year and late school year GMRT scores of Grade 8 students whose teachers did receive training in student literacy skills development (the Experimental Group).

Research Questions/Hypotheses

The study measured, through standardized test scores, a potential relationship between teacher training in student literacy skills development and student literacy changes as defined by the results of GMRT assessments in Alberta, Canada. The research question was as follows:

Is there a statistically significant difference in GMRT scores between students who were taught by teachers who received professional development in the area of literacy student literacy skills development and those students who were not?

From a statistical approach, a null hypothesis (H_0) statement was developed that draws no relationship between the dependent (student performance) and independent (teacher professional development sessions) variables in the study (Creswell, 2009). The null hypothesis (H_0) for this research statement was:

H_0 : There is no statistically significant difference in GMRT scores between students who were taught by teachers who received professional development in student literacy skills development and those students who were not.

An alternate hypothesis (H_1) was that there is a relationship between teacher literacy-focused professional development sessions and an increase in student academic performance. The alternate hypothesis (H_1) for this research statement was:

H_1 : There is a statistically significant difference in GMRT scores between students who were taught by teachers who received professional development in student literacy skills development and those who students were not.

To test the null hypothesis (H_0), the researcher recorded the GMRT scores in a year when teacher literacy professional development took place and a year when it did not. In both years, students took the GMRT to measure performance in relation to the standardized benchmark of the reading comprehension screen. In each year, the students took the GMRT twice, once in late September and then again in early May. The research

population was made up of all Grade 8 students in academic year 2012-13, and all Grade 8 students in academic year 2013-14. In the second year, all Grade 8 teachers in the district participated in a series of four professional development sessions that focused on literacy awareness and instruction.

In regards to school and district leadership with the professional development of staff, Fullan (2014) believed that it was important that school administrators participated in any implementation process and that they were aware of the crucial elements involved in the initiative in order for it to be successful and meaningful. To monitor whether teachers were implementing the skills developed during the literacy sessions, district literacy leadership teachers coached school administrators to look for key items when performing their regular duties as related to district expectations of teacher evaluation and supervision. Specifically, literacy project lead-teachers asked instructional leaders to monitor how teachers were using free voluntary reading in their classrooms, employing the Gradual Release of Responsibility learning strategy and/or integrating the Three-part Learning Framework into their lessons. The district literacy team gave school leaders access to information that highlighted what to look for in a literacy-rich classroom and to engage in pedagogical dialogue as it related to the content of the division-sponsored literacy sessions. Administrators were also encouraged by the district literacy team to enter into professional growth discussions that centered on subject-specific literacy teaching strategies throughout the school year.

Study Limitations

There were a number of research design limitations associated with this study. The primary limitation involved the GMRT data and the variance of the Grade 8 student scores between late September and early May. To indicate with a high degree of confidence that student academic achievement was influenced primarily by teacher professional development would not be plausible. However, teacher employment of literacy-based learning strategies might be a contributing factor to a possible increase in student performance of a standardized reading screen.

A second limitation was that the GMRT is a Canadian-normed reading screen that requires no special training to administer. The GMRT indicates an overall grade level to which each student is performing, but with no diagnostic information (Riverside Publishing Company, 2010). Therefore, a reading screen group-standardized test is not as accurate as an individualized literacy assessment.

In terms of the homogeneous characteristics of the two compared groups, a limitation was the make-up of the Control Group from the previous year. To establish baseline data for the GMRT, two groups within the sample population were compared from two consecutive years: one Grade 8 group whose teachers did not have student literacy skills development training, and the second Grade 8 group whose teachers did receive the training. While the demographics of a population are constant in terms of gender and ethnicity, the performance of two groups of students within a student

population may vary. The possibility of two groups to perform academically in a similar manner, regardless of treatment, is an element that must be accounted for in the study.

Definitions of Key Terms

Like many disciplines, education carries with it a number of unique terms that may only have direct relevance to a focused population. Listed are a number of terms that may need further explanation to fully comprehend the research contained in the study.

Literacy level – The ability of a student to read and write at a particular grade level within a school environment.

Late literacy development – Conducted after Grade 3, late literacy refers to specific literacy instruction occurring in later grades.

Adolescent literacy – Targeted literacy support provided between Grades 4 and 12 to struggling readers.

Primary grades – Generally referring to Grades 1 and 2 within an elementary school environment.

Middle school – There are a number of different grade configurations for middle school; these can span from Grade 5 to Grade 9.

ELI – Early literacy intervention (ELI) programs target students in Grades 1 and 2 with a focus on improving reading and writing abilities.

PATs – Alberta Provincial Achievement Tests (PATs) are year-end exams in Grades 3, 6, and 9. These tests are in subject areas of language arts and math in Grade 3.

In Grades 6 and 9, the four core subject areas of language arts, math, science, and social studies are tested.

GMRT – The Gates-MacGinitie Reading Test (GMRT) is a comprehensive reading screen that assesses a student’s reading and comprehension levels in comparison to regionally normed standards. To that end, the GMRT in Canada will be normed for that population.

Inclusive learning environments – Learning that is delivered within the context of the traditional classroom and not performed as a pullout strategy removing the student to another separate classroom.

Cross-curricular subject areas – A variety of subject areas taught in a traditional middle school or high school environment, including English language arts, math, science, social studies, etc.

Gradual Release of Responsibility – A four-part teaching methodology that slowly transfers the responsibility of learning from the teacher to the student.

Free voluntary reading – Student reading for a sustained amount of time at a high accuracy level, a high comprehension level, and a high interest level.

Three-part Learning Framework – Working with students on reading comprehension before, during, and after a piece of material is distributed; either by hand or digitally.

Summary

This research compared standardized reading screen scores in Alberta, Canada, to explore whether teacher training in the area of literacy impacted student achievement. The study used a reliability corrected ANCOVA to compare GMRT scores from Grade 8 students whose teachers did receive training in student literacy skills development (the Experimental Group) and GMRT scores of Grade 8 students whose teachers did not receive training in student literacy skills development (the Control Group). Afflerbach (2012) believed that focusing on literacy intervention within the primary years of formal schooling excluded a large population of students who struggle with reading and writing in later grades.

In Chapter 2 a review of related literature suggested that there is little research for teacher professional development in the area of literacy for later grades and the impact that literacy development has on student academic performance. A further review of the quantitative methodology used in this study is outlined on Chapter 3. The research presented in this study contributes to the literature supporting the need for classroom literacy strategies at all levels: elementary, middle, and high school. It supports the understanding that focused cross-subject literacy implementation needs to become part of a comprehensive schoolwide and districtwide professional development plan.

CHAPTER 2: LITERATURE REVIEW

Introduction

As students mature, the academic reading and writing gaps between those progressing at an age appropriate level and those who are not widens (Biancarosa et al., 2010). Students who progressed at grade level with their ability to read and write appropriately in Grades 1 and 2 experienced closer performance symmetry than those students who struggled in later years (Allington & Gabriel, 2012). As struggling readers get older, the difference in their performance level widened from that of their typically developing peers. Eventually, at the middle and high school levels, there was a wide diversity in terms of reading and writing abilities amongst students (Afflerbach, 2012). The premise of early reading intervention in Grades 1 and 2 was the most effective in terms of time, training, and resources (Allington, 2009).

In later grades, literacy intervention diminished, with students and teachers unable to address particular academic difficulties in the areas of reading and writing (Afflerbach, 2012). Faggella-Luby et al. (2012) believed that the performance reading and writing gap in Grade 8 could be substantial, with as little as 60% of the class reading at grade level and writing at an appropriate level. In a similar study, Paige (2011) examined the effects of a sustained 16-minute reading block on middle school students and successfully increased the comprehension and fluency level of low readers over a 2-year period. The research indicated that reading levels might increase through implementing free voluntary reading strategies with the middle school age group (Paige, 2011).

In terms of grade intervention programs, Buehl (2011) suggested that primary classroom teachers relied on literacy specialist teachers to assess and implement any remedial strategies. The use of professionals and paraprofessionals other than the classroom teacher for literacy intervention has been an area of debate. Research has indicated that if the classroom teacher was not involved directly in the literacy assessment of students, which guided universal lesson planning as a result of the testing data, limited whole class literacy improvement was achieved (Allington, 2009; Buehl, 2011; Routman, 2007). Fuchs, Fuchs, and Vaughn (2008) concluded through their research that classroom teachers ought to be the initial users of diagnostic reading and writing assessment material on a regular basis to respond to the general and specific literacy needs of children in their classrooms.

An analysis of related literacy research indicated there was an absence of inclusive teacher-focused literacy intervention programs at the upper elementary, middle, and high school levels (Afflerbach, 2012; Hume, 2010; Shanahan & Shanahan, 2008). Deshler (2013) discovered that a vast majority of teachers in non-primary grades believed that literacy strategies were an elementary pursuit, and English language arts teachers or designated special education teachers should provide the necessary interventions. Similarly, literacy development was seen as minimally important by secondary science and math subject teachers (Deshler, 2013). Once a student progressed into the upper elementary grades, literacy skills and universal learning strategies declined, with an emphasis placed on subject content. A reduction in the focus on literacy by secondary

(middle school and high school) teaching professionals was primarily due to their lack of understanding techniques to address specific academic concerns in the classroom (Afflerbach, 2012; Allington, 2009; Collins & Collins, 2005; Hume, 2010; Shanahan & Shanahan, 2008).

Observing the larger societal impact of literacy, Krashen (2014) observed that approximately 25% of U.S. adolescents have specific issues that prevented them from acquiring age-appropriate reading and comprehension skills. Using case study data, Krashen (2014) determined that issues in adolescent literacy contributed significantly to students failing classes, falling academically behind their typically developed peers, and eventually leading them to drop out of school (Krashen, 2014). Deshler (2013) also identified the adolescent performance gap that widened after the age of 12 as contributing to students not being able to realize their full learning potential.

Literacy and Leadership

Creating effective, focused professional development for teachers was a step in establishing a systemic process to address literacy. Equally important to professional development for teachers was the need to ensure that school administrators become instructional leaders in sponsoring and supervising a comprehensive literacy plan in all classrooms (Fullan, 2014; Routman, 2000; Sparks, 2013). Allington (2009) stated that if school administrators, particularly principals, were not active in understanding the components of literacy as it applied to classroom instruction, then its development would be sporadic at best. Au and Valencia (2010) believed that in the absence of school

administrators fostering literacy in the school, full adoption of a comprehensive literacy program might not occur. Sporadic literacy initiatives may occur in classrooms by committed teachers, but wholesale school-wide change would not likely result. As with any initiative, the administration at the school and district level should be seen as leading the implementation or its importance will diminish (Cole, 2013; Marzano & Waters, 2009).

Looking at developing a school literacy plan, Coiro, Knobel, Lankshear, and Leu (2008) confirmed the important role school administrators played in the process. Without school administrators' continued involvement in terms of professional development and resource support, the success of a comprehensive literacy program is reduced. Routman (2007) believed that school leaders should do instructional walk-throughs and have meaningful literacy-focused conversations with teachers in order for effective change to take place. Allington (2009) and Routman (2007) both agreed that effective implementation of a comprehensive literacy program was not effective without school administrators understanding the rationale behind the teaching strategies. This body of research indicated that unless site-based administrators understood the elements of comprehensive literacy instruction and engaged in meaningful classroom instructional conversations, the likelihood of a successful whole-school adoption was limited.

Teacher Professional Development in Literacy

The International Reading Association (2010) reported that because of low literacy levels, secondary school teachers felt that they were not able to recognize a

student's full academic potential. High and middle school teachers believed they were not trained to address literacy issues, and this phenomenon manifested in struggling students entering non-academic programming (Afflerbach, 2012). Student and parent disappointment increased due to the lack of academic success, which manifested itself in a number of unrelated discipline problems (Phelps, 2005). Anstey and Bull (2006) believed that it was the lack of literacy, rather than lack of intelligence, that contributed to low student performance levels. In research that was sponsored by the International Reading Association (2010) on assessment practices of middle and high school teachers, the conclusion stated that professional development in classroom literacy would likely result in higher student academic achievement.

Research studies that target teacher literacy professional development primarily addressed issues in the primary grades. This area of research focused on Early Literacy Intervention (ELI) programs designed to move into classrooms or required trained personnel to remove students out of the traditional classroom for focused one-on-one intervention (Allington, 2009; Deshler, 2013). As identified by Shanahan and Shanahan (2008), little focused on literacy intervention that was specific to the middle and high school student age groups. Research that investigated the use of classroom literacy strategies in multiple subject areas in secondary schools has been limited.

Late-literacy development in the language arts classroom was an important area of research given the general belief that, regardless of age, students continued to develop their literacy skills throughout their academic careers (Afflerbach, 2012; Shanahan &

Shanahan, 2008). Through their observational research, Jetton and Shanahan (2012) also found that when students were able to develop their reading and writing skills, teachers realized the benefit of literacy development in terms of improved student performance. Specifically, the correlation between increased student comprehension and improved student academic performance was very high (Zwiers, 2010). Zwiers (2010) noted that when students, especially in Grades 6 to 12, were given the necessary literacy strategies to perform better across various subject areas, teachers experienced less stress and ultimately enjoyed higher job satisfaction.

In relation to late literacy development, the International Reading Association and the National Council on Teachers of English (2009) examined the connection of student discipline and literacy development. The joint task force determined that, regardless of students' socioeconomic background and other environment factors, there was a pattern between discipline issues and a student's literacy level. Data collected from behavior support systems established within schools and student academic performance indicators showed that there was a direct relationship between low student literacy levels and an increase in discipline issues (IRA-NCTE, 2009). The research also included evidence to suggest that if literacy levels were influenced by targeted intervention, whether schoolwide or classroom-based, the incidence of negative student behavior diminished.

Late-literacy Classroom Integration

Investigating the area of late-literacy development, Faggella-Luby et al. (2012) found that middle and high school teachers did not have the necessary training to

implement literacy strategies into their daily lesson delivery. Typically, these teachers focused on specific subject content comprehension and assumed that students entered their classrooms with the ability to read and write at grade level (Zwiers, 2010). Phelps (2005) indicated that for many school districts contemplating developing a late-literacy strategy model, such programs were conceptualized as a remedial program for students experiencing difficulty in traditional classes. On the contrary, the importance of literacy integration as an inclusive cross-subject strategy was essential for a model to be successful (Allington, 2009; Deshler, 2013; Zwiers, 2010). Removing literacy strategies from the traditional classroom and making them part of a specialized program defeated the purpose of literacy integration and increased the chances of program stigmatization, student segregation, and alienation (Faggella-Luby et al., 2012). The benefits of learning appropriate literacy strategies aided all students in their reading comprehension and writing skills (Zwiers, 2010).

Through applied research analysis of late-literacy and school resources, Greenleaf, Jiménez, and Roller (2002) discovered that the reading level of many textbooks at any given middle or high school grade was beyond that of the typical struggling reader. With the increase of English Language Learner (ELL) students in North American schools, the International Reading Association (2010) estimated that more than 66% of the reading material administered at a high school level did not match the literacy needs of the population it targeted. As Phelps (2005) concluded, if a student was not able to read what was written in a textbook, then that student was not able to

fully comprehend the material. Similarly, if a student was not able to communicate effectively in a written response, he or she was often assessed at a lower level (Lankshear & Knobel, 2011). Given this information, a student's academic success in middle or high school was generally determined by his or her literacy level (Faggella-Luby et al., 2012).

In related research of late-literacy intervention strategies, Gabriel (2009) suggested that a paradigm shift needed to occur and insisted that all teachers, regardless of subject area, ought to become teachers of reading and writing. Starting with professional development in the area of universal literacy teaching strategies, all subject teachers would benefit from incorporating elements of reading comprehension and writing strategies into their daily lessons (Faggella-Luby et al., 2012). In an ideal literacy-rich learning environment, each teacher assessed and delivered curriculum to the literacy level of each student in his or her class (Allington, 2009). Ultimately, this contributed to an individually tailored literacy-learning classroom.

The Challenges of Late-literacy Integration

To establish successful late-literacy strategies in all classrooms, Davies and Busick (2007) suggested focused leadership, teacher commitment, and access to a variety of learning resources. Bean and Dagen (2011) found that initiating a schoolwide, late-literacy program required school administrators to demonstrate a direct correlation between the projected desired environment and student performance. The rationale for establishing a link between potential change and student performance was rooted in the

high-stakes accountability testing that many secondary school teachers perceived as important and as a reflection of their pedagogical skills (Bean & Dagen, 2011).

To initiate change in a school setting with literacy, Irvin, Meltzer, Dean, and Mickler (2010) emphasized that the primary task of a leader was to assess firsthand what was taking place in cross-curricular middle and high school classrooms. Methodically, at first, the leader measured the teaching practices of the faculty against the desired practices (Bean & Dagen, 2011). Observing and assessing the faculty's current teaching skills in relation to effective literacy practices allowed for greater understanding of where teachers were in their pedagogical practices. This observation time clarified the context of the environment in which the change would occur. It also created credibility for the leader in that he or she witnessed the culture of that school firsthand (Irvin et al., 2010).

Connected to successful implementation of late-literacy programs as suggested by Bean and Dagen (2011), teacher commitment and focused professional development were important elements when establishing effective student programming. Faggella-Luby et al. (2012) highlighted these factors when addressing the fundamental components of successful literacy adoption in middle and high schools. Without demonstrating classroom application and a systematic method of incorporating literacy strategies into daily teaching activities, the success of a schoolwide literacy adoption could be limited (Faggella-Luby et al., 2012). Furthermore, Bean and Dagen (2011) looked at characteristics of successful secondary literacy teaching strategies and discovered that

time to collaborate, the sharing of best practices, and the ability to ask subject-specific literacy questions were factors contributing to an effective late-literacy model.

The idea of access to suitable resources ultimately contributed to the success of a late-literacy program (Davies & Busick, 2007). In obtaining the agreement of a school community to develop literacy strategies for subject-specific learning environments, leaders provided available resources that allowed teachers to incorporate literacy techniques into their classrooms. Faggella-Luby et al. (2012) cautioned against moving toward literacy integration without the proper subject resources and strategies. The use of topic-specific word walls, multi-leveled reading resources, graphic organizers, and multimedia resources were some of the methods for teacher training (Deshler, 2013).

Understanding how to use and build effective literacy resources required time and expert demonstration. Davies and Busick (2007) highlighted the necessity for schools and school districts to invest time and money in this area, but only after understanding each teacher's role in developing a culture of late-literacy intervention. Routman (2007) agreed with this statement and noted that learning communities, prior to establishing a consensus about literacy, were hesitant to invest in multiple resources to support literacy integration. Too often, schools sought to find suitable resources without first defining their collective beliefs on literacy (Routman, 2007). Allington (2009) maintained that a school community should work on building foundational statements on literacy prior to allocating budgets or purchasing resources.

The development of a school or school district culture immersed in literacy integration required a number of factors to be present. As stated, the perceived absence of one or more of these factors contributed to a school community's reluctance to employ a successful, cross-subject, late-literacy initiative. Faggella-Luby et al. (2012) proposed that, while adolescent literacy intervention was a relatively new phenomenon, its adoption as a fundamental component of how a school would address its learning may have a significant impact on student achievement. Using a variety of secondary school case studies, Faggella-Luby et al. (2012) underscored how literacy initiatives have improved schools academically, regardless of socioeconomic standing or previous poor standardized test performance indicators.

A number of researchers attributed inappropriate or reduced adolescent literacy assistance to lack of teacher competency in teaching strategies that specifically addressed issues of student reading comprehension and writing (Faggella-Luby et al., 2012). In an adolescent literacy report commissioned by the Carnegie Corporation in the United States, Lee and Spratley (2010) found that in primary grades (kindergarten to Grade 4), teachers taught students how to read and write. In subsequent grades (Grades 5 to 12), teachers used the skills of reading and writing to introduce and reinforce curriculum objectives. The report identified how in early grades students learned how to read and write, and then in subsequent grades they used those skills to learn content. Lee and Spratley (2010) determined that the majority of adolescents learned how to read and write with basic understanding (measured using a basic, proficient, and excellent scale), but

only 10% comprehended complex texts or produced writing that met standards of excellence as defined by the United States Department of Education. The absence of reading and writing development by subject-specific teachers in middle and high school contributed to the overall reduction in literacy levels for students in these grades (Gabriel, 2009).

Prior to Gabriel's (2009) research, Kamil, Lane, and Nicolls (2005) indicated that a dichotomy existed between the increased complexities of textbooks in high school and the general reading level of students in those subject areas. Specifically commenting on science and social studies, there was a consistent discrepancy between the reading level of an observed class and the student reading level targeted by the subject. The overall reading level of students was below that indicated in the prescribed textbook of academic courses in Grades 11 and 12. This disparity was more profound when socioeconomic factors such as English as a second language were added (Kamil et al., 2005).

Lee and Spratley's (2010) research supported the separation between the reading level of students and the individual subject textbook and found that most Grade 12 academic resources were oriented to a reader whose comprehension level was proficient or high. Their data indicated that less than 50% of those students observed fully understood the information contained in their textbooks, especially in science (Lee & Spratley, 2010). This evidence suggested that specific teacher-created literacy strategies be employed in all subject areas at the middle and high school levels.

In addition to Lee and Spratley's (2010) research, Deshler (2013) commented on the performance gap that occurred with delayed adolescent readers in relation to their grade-level reading peers. Research indicated that if, for example, a Grade 9 student was reading at a Grade 5 level, then he or she would need to acquire 2.5 years of reading proficiency per year in order to graduate at the same level as his or her typically developed reading peers (Faggella-Luby et al., 2012). The factor that Faggella-Luby et al. (2012) identified as a deterrent to narrowing the performance gap was the high curricular demands of the education system, especially at the middle and high school level.

In research that originated in the United Kingdom, some basic literacy skills were ignored due to time restraints associated with delivering the assigned curriculum (Hattie, 2011). Deschler (2013) examined the concept of the performance gap in a meta-analysis of at-risk student research. He discovered that more than 80% of identified at-risk students had literacy learning issues in comprehension, phonics, vocabulary, and fluency. This research reinforced the issue of student literacy and at-risk youth behavior, as well as the relationship that existed between them (Deschler, 2013).

Creating Literacy-rich Environments

The creation and development of resources for teachers to use in their classrooms to increase the literacy levels of their students was an important factor in moving forward with an implementation plan. Routman (2000) argued that an essential step toward establishing a school culture focused on literacy was examining teacher's beliefs regarding basic education. Before providing any resources or creating professional

development plans, teachers needed to identify basic characteristics of quality learning environments (Routman, 2000). Once the elements that constituted a quality classroom and/or school environment were established and all teachers agreed on them, progress could then be made toward improving pedagogical practice (Allington & Gabriel, 2012; Routman, 2000).

Agreeing as a community on the important elements of what constituted a literacy-rich learning environment was important, especially at the middle and high school level. Brozo and Simpson (2007) observed a number of schools that started to establish elements of a comprehensive, literacy-focused plan designed to address student academic improvement. Interviewing a number of teachers and administrators, they found that purchasing resources was second to establishing common goals and universal terminology (Brozo & Simpson, 2007). Allington (2009) urged school authorities to look inward to create a common understanding of literacy and student support prior to purchasing expensive, manufactured reading and writing resources. Fuchs et al. (2008) noted that listing common beliefs about learning was the first step in developing a school support plan to be used to assess the appropriate intervention strategies for students who required assistance.

According to Moje et al. (2008), when designing a literacy-rich learning environment for adolescents, teachers should create instructional routines that become part of their daily lesson delivery. The instructional routines become part of the students' repertoire for learning. Developing literacy skills and giving students the ability to use

these strategies appropriately allowed for greater comprehension and ultimately led to increased student performance (Moje et al., 2008). While simple in its premise, the ability of many teachers to create these routines was not readily apparent in all school communities and classrooms (Moje et al., 2008).

To develop effective literacy-rich environments, material must be presented in a meaningful manner and at a level that is appropriate to each child's reading abilities (Brozo, Frey, & Ivey, 2010). This is achieved through using a group-diagnostic standardized reading test, which is administered by the teacher. Once a level was determined for a student, or group of similarly achieving students, a teacher was able to prepare comprehensive material at the appropriate level (Brozo et al., 2010). Related to this procedure, Routman (2000) believed that a demonstrated 98% accuracy rate needed to be attained for a student to comprehend any material that he or she was given.

Enabling a Literacy Paradigm Shift

The ability for teachers to establish a focused literacy environment that allowed students to organize and comprehend material in a classroom required teachers to collaborate, co-plan, and then share best practices with each other (Shanahan & Shanahan, 2008). In a comprehensive study commissioned by the National Middle School Association (2011) of 2,400 professionals in the United States, teachers rated co-planning with colleagues as the best way to enhance their daily lesson delivery skills. However, researchers in the same study have noted a declining trend in regard to this type of activity in many schools as a result of public education budget restraints and higher

accountability measures. In 2008, 41% of surveyed teachers reported participating in two hours of structured collaboration time per week, but this number dropped to 24% in 2010 (National Middle School Association, 2011). In an earlier survey conducted by Greenleaf et al. (2002), 28% of the respondents reported that they received less than 30 minutes of teacher collaboration time per week.

Using a United States nationwide survey focused on professional development, Wiggins and McTighe (2005) reported that the biggest influence of assignable instructional time and the collaboration opportunities in a school was the principal. As the major influence on the design of collaboration, principals needed to be aware of the necessity for teachers to share, both formally and informally, best instructional practices (Wiggins & McTighe, 2005). Knight (2007), in a North American meta-analysis study, maintained that the principal was the key motivator in terms of creating professional development opportunities for teachers and the primary focus of the professional development topics throughout the school year. Specifically to Alberta, Canada, the Alberta Teachers Association (2009) highlighted the role of the principal in terms of teacher professional development but emphasized that teachers were instrumental in the direction of the school and personal professional development. All of these factors led to the conclusion that the principal was the key to ensuring that adequate time was given to create environments that were conducive to literacy instruction.

Given that school administrators had the greatest impact on a teacher's assignable class time and subject preparation allotment, a desirable paradigm shift must occur for a

comprehensive literacy structure to be established in a school. Marzano and Waters (2009) believed that the role of the principal in implementing any lasting change in a school community was instrumental for its success. Allington (2009) described the instructional leadership role of a principal in the implementation of a school literacy plan. He believed that school leaders established the initial literacy goals, maintained the vision, and ultimately evaluated literacy development in a school. When paradigm shifts occur in school communities, the principal ought to be the main contributor to the direction of that initiative for it to be successful (Marzano & Waters, 2009).

Motivating teachers, particularly reluctant secondary teachers, to change their teaching practices in an area that requires extensive professional development may be problematic. Patterson, Grenny, Maxfield, McMillan, and Switzler (2007) looked at a number of factors that motivated people and influenced their attitude toward a new endeavor. Taking into account the initial implementation lag associated with a new idea, the research indicated that how people perceived themselves strongly influenced the success, or failure, of a particular endeavor (Patterson et al., 2007). How individuals perceived a new initiative had a profound effect on its implementation. Students and teachers needed to believe what they were doing was worthwhile, supported, and attainable.

Summary

Literacy assessment and instruction gained importance in North America as the connection between positive student achievement and literacy levels was established

(Deshler, 2013). This realization and research evidence suggested that as literacy levels increased, there was an overall systemic positive change in school environments (Afflerbach, 2012; Allington & Gabriel, 2012; Collins & Collins, 2005). Collins and Collins (2005) described elementary literacy-rich environments where students received appropriate material at an appropriate level. For middle and high school, the most successful classrooms for at-risk youth were ones where individual literacy abilities guided instruction, which translated into lower dropout rates and increased academic success (Brozo & Simpson, 2007; Davies & Busick, 2007; Faggella-Luby et al., 2012).

Literacy teaching and literacy research indicated that students continued to develop reading and writing skills throughout their academic careers (Collins & Collins, 2005; Deshler, 2013). Teaching students literacy techniques with a continuum of support became foundational to all levels of schooling, regardless of subject specialization. From kindergarten to Grade 12, Deshler (2013) believed that the entire formal schooling process needed to incorporate elements of a focused comprehensive literacy program leading to a positive impact on student performance, teacher job satisfaction, and conceivably society in general.

In Chapter 3 the quantitative research approach used in this research study is explored in depth. This chapter includes a definition of the examined student and teacher populations, the survey instruments used, the data analysis methodology and the study's limitations. Chapter 3 concludes with a summary of the research methodology and corresponding data collection techniques.

CHAPTER 3: METHODOLOGY

Introduction

The analysis of juried research has demonstrated that there was a strong relationship between the amount of literacy knowledge a teacher had and his or her ability to present it in a comprehensive and meaningful way (Allington & Gabriel, 2012; Shanahan & Shanahan, 2008; Sparks, 2013). From a global perspective, the Programme for the International Assessment of Adult Competencies (PIAAC) examined the benefit to society in educating citizens with appropriate literacy skills. Surveying 24 developed countries, PIAAC assessed the financial impact that the lack of literacy skills in the adult population had on a country. As a country's literacy rates increased in adults, there was a decrease in accessing social assistance programs and the overall unemployment rate (PIAAC, 2013).

The goal of this research study was to determine if there is a connection between teacher training in student literacy skills development and student achievement as demonstrated through GMRT scores in Alberta, Canada. The professional development sessions within the study were designed to increase teacher awareness in the area of literacy and to foster the implementation of essential literacy strategies employed on a day-to-day basis in the middle and high school classroom, regardless of subject area. Once teachers mastered basic literacy strategies as demonstrated in a series of professional development sessions, they would use those strategies on a regular basis to complement their daily instruction. The researcher hypothesized that there would be an

overall increase in student academic performance as demonstrated through a comparison of scores on the GMRT. Instructional leadership was addressed as an important contributing factor to the successful classroom implementation of focused literacy strategies.

Research Method

A school district in the province of Alberta, Canada, established a 3-year district goal to reverse declining student test scores on the provincial achievement standardized exams in grades 3, 6, 9, and 12. In order to achieve this goal, the district implemented focused literacy instruction. All teachers from kindergarten to Grade 12 in the school district participated in four full-day professional development sessions in the area of literacy awareness and instruction. Students in Grades 4 to 9 were assessed in late September and then again in early May of the same school year using a reading screen to determine if the district's focus on literacy made a difference in academic performance. This study only used GMRT Grade 8 data.

At the beginning and the end of the 2012-13 school year, GMRT scores were collected for all Grade 8 students in the district. In the 2012-13 school year the district did not sponsor wholesale literacy professional development for Grade 8 teachers. The data in this year was used to establish the Control Group information for the research study. In 2013-14, Grade 8 GMRT scores were collected again at the beginning and at the end of the school year. During this second year, 2013-2014, teachers received four full days of professional development in the area of literacy. This 'treatment' created the

Experimental Group for the research. While the GMRT scores for both the Control and Experimental groups examined Grade 8 data, the two student groups were non-equivalent. Further explanation of the literacy sessions and an examination of the non-equivalency research phenomenon are expanded on in this chapter.

To answer the research question a reliability-corrected ANCOVA was used to compare the beginning and end of year GMRT scores of the two student groups. Grade 8 students whose teachers did not have literacy skills training were the Control Group, and those Grade 8 students whose teachers did have literacy skills training were the Experimental Group. IBM's SPSS (Statistical Package for the Social Sciences) 22.0 software was used to perform all statistical analysis in the study. A summary and discussion of the SPSS reliability-adjusted ANCOVA results is provided in the Results section of this dissertation

Only aggregated test data was used in the research, and there were no identifiable characteristics of individual students, classes, or schools participating in the study. The use of the GMRT data required the consent of the Board of Trustees (Appendix A) and Nelson Education Ltd, the publishing company for the GMRT (Appendix B). For both Grade 8 data sources, parents were notified about the GMRT data use through school newsletters and school websites. Since all test score data was generated from students in the same school district, the method of contacting student parents was the same. Classroom teachers administered the group GMRT to students in Grade 8 on both occasions, and it was electronically scored and recorded.

Over a ten-month period in the 2013-14 school year, all teachers within the school district were trained in subject and grade specific high-yield literacy teaching strategies as described in four full-day professional development sessions. The school administrators were then asked to monitor the implementation of the literacy strategies by using teacher supervision and evaluation procedures. A relationship would be determined between teachers who received training in student literacy skills development and improved literacy as determined by using pre- and post-GMRT scores. Therefore, an alternate hypothesis (H₁) that there is a statistically significant difference in GMRT scores between students who were taught by teachers who received professional development in student literacy skills development and those who were not was presented.

Research Design

The series of four full-day professional development sessions focused on cross-subject literacy awareness and high-yield literacy classroom teaching strategies. These sessions were dedicated to the following elements:

Session 1. Building Beliefs and Awareness: How Literacy Impacts Learning

Session 2. Three High-yield Literacy Strategies for All Classrooms

Session 3. Subject-specific Literacy Strategies

Session 4. Knowing the Learner: Differentiating Resources for Students

The full-day professional development sessions occurred throughout the year during the regular school operational day. All teachers in the school district from kindergarten to Grade 12 participated in the training. The professional development session outlines,

instructional literacy strategies, and other relevant information are included in the appendices (see Appendix E).

The school district assembled a team of literacy specialists to deliver the professional development sessions, with representation from elementary, middle, and high school teachers. Including members from these three levels increased the validity of the professional development sessions (Allington & Gabriel, 2012). It was also important that teachers of subject areas other than English language arts were emphasized to ensure that the issue of declining test scores, and subsequently the focus on literacy, was not perceived as a single-subject issue.

To monitor whether teachers were implementing the skills developed during the literacy sessions, school administrators looked for key items when performing their normal duties relating to district expectations of the evaluation and supervision of teachers. Specifically, instructional leaders monitored how teachers used data to know the student, implemented free voluntary reading in their classrooms, employed the Gradual Release of Responsibility learning strategy, and integrated the Three-part Learning Framework into their lessons. School leaders had access to information that highlighted elements of a literacy-rich classroom and engaged teachers in pedagogical dialogue relating to the content of the division-sponsored literacy sessions. Acting as instructional leaders, school administrators entered into professional growth discussions centered on subject-specific literacy teaching strategies throughout the school year. All school administrators participated in the literacy implementation process by attending specific

professional development sessions designed to familiarize them with the teacher sessions. Fullan (2014) and Robinson (2010) observed that school administrators must become instructional leaders and learners in order for professional development to be successful.

The school district established the professional development session dates at the beginning of the school year. These sessions occurred in the months of October, December, February, and March. The GMRT test dates were set for late September and early May of the same academic year. The reading screen was a group Level A test that required no specific teacher training to administer.

As in previous years, Grade 8 students in all eight middle schools in the school district took a standardized reading screen twice a year to assess their reading comprehension levels. A district Grade 8 reading screen profile was developed using the overall Grade 8 results. The concluding research activity was a second Grade 8 student GMRT administered in early May 2014. When completing the GMRT analysis, the researcher used a reliability-analysis of covariance (ANCOVA) and compared the 610 Grade 8 student standardized test scores in the 2013-14 school year to the 583 Grade 8 student test scores from 2012-13 school year when teachers did not receive training in student literacy skills development.

The professional development session dates for the 2013-14 school year was set by the school district and occurred in the months of October, December, February, and March. These dates were chosen so as not to conflict with various student reporting times and parent-teacher interviews. The GMRT was decided upon as a testing instrument by

the school district because it is a group literacy screen that requires no specific teacher training to administer, and the entire test can be completed in a relatively short time.

Anonymity, as outlined in the researcher's introduction email letter to the Board of Trustees (see Appendix C), was an important aspect in the student data. Individual middle schools submitted the data by reporting the school's overall GMRT score. Each school had a non-descript identified number, one to eight. All student individual response data did not classify any names and/or student identification numbers. The data analysis used the attributed school number and not the school's name. This procedure assured that no student or school was identified through the data presentation process.

Instruments

The only instrument used during this research study for measuring Grade 8 student literacy levels was the school district sponsored GMRT. As a standardized test, the GMRT is constructed to be sensitive to cultural differences, and it complied with ethical protocols in that class, grade, or school data can be used without any identifying characteristics (Riverside Publishing Company, 2010). The reliability and validity of the GMRT has been examined continuously since 1999, and it has been found to accurately assess Alberta and Canadian national grade level equivalencies (Riverside Publishing Company, 2010). There were different versions of the GMRT available that may be used internationally, and each regionally-developed GMRT addresses unique cultural differences. Using regionally and culturally corrected testing material creates a high

degree of test validity, and given that the reliability measure of the GMRT is significant ($r=0.95$) the margin for error is reduced (Morsy, Kieffer & Snow, 2010).

The GMRT allows for a variety of literacy categories that can be used for individual or group assessment needs (Riverside Publishing Company, 2010). The reading screen is used to determine a student's proficiency in the areas of vocabulary, word decoding and reading comprehension, and it can be administered to students from grades 1 to 12 in a classroom setting. Allington (2009) believed that the information gathered from reading screens similar to the GMRT could be used to inform instruction for teachers, and it could also be a factor for school districts when deliberating on the equitable distribution of resource funding. While many school districts are exploring the use of a wide variety of student reading and comprehension tools, the capacity to transfer that information to differentiated instructional strategies is still an area of debate (Deshler, 2013). Beers and Probst (2013), cautioned against using the GMRT as an exclusive means of assessing students, and believed that the data should be used in conjunction with established evaluative practices of the classroom teacher.

Johnson (2005) indicated that the GMRT accounted for incidences of race and gender bias within the various sub-test sections, and these factors had no effect on student performance. The differential item functioning, as a measurement bias within the test, was also culturally sensitive. There was no evidence, however, to determine if the test was sensitive to students from diverse socio-economic backgrounds (Johnson, 2005). As outlined in Chapter 4, the variable of socio-economic status was accounted for in the

reliability-analysis of covariance calculation of the two groups in the research study.

Socio-economic demographics were not observed as a distinguishing factor between the two observed groups.

The results from the GMRT are not diagnostic in nature, rather the data are represented as a grade level score that indicates the student, class, or grade ability level. For example, if a Grade 8 class is administered the GMRT in September, the appropriate benchmark level will be 8.0; any student who scores 8.0 or higher will be assessed as being at or above grade level. For that reason, the GMRT is only used as a tertiary assessment measure, and those students who score at a lower percentile will require further diagnostic testing to accurately assess their reading abilities.

Participants

There was one target population for this research study, divided into two different groups: former and current Grade 8 students within the school district. The Grade 8 student data included all students' reading screen results during the late September and early May in the 2012-13 and 2013-14 assessment periods. Given the grade equivalent information from the GMRT, the researcher did not manipulate the Grade 8 student reading screen data. The schools reported the data in an anonymous manner so as not to identify individual students, classes, or schools. Permission to use the Grade 8 student data was obtained from the school district using City University of Seattle's Organizational Consent Form (see Appendix A) and a researcher-developed permission letter (see Appendix C).

Data Analysis Methods

As the GMRT was a Canadian-normed standardized test, an inference to the school district Grade 8 student population was made. Other than using statistical software, there was no need for manipulation of the quantitative data. The GMRT data was analyzed using SPSS 22.0 software, which examined the variance of scores and the mean values from the two test periods of both groups. Each unidentifiable individual GMRT score for the Control and Experimental groups, along with the covariates of gender, origin of birth, language used at home, and special needs designation were compiled in a Microsoft spreadsheet. The spreadsheet was then uploaded to the SPSS software. Levesque (2010) believed that the SPSS program created a functional method for easy manipulation of data that resulted in descriptive statistical tabulation. After the spreadsheet data was uploaded into the SPSS program, several bivariate statistical tests were performed to ensure that the Control and Experimental group data was comparable in terms of the covariates. A chi-square test was performed for all covariates to determine if the two groups had a statistically significant difference in one or more of the covariates. Finally, the mean and standard deviation of the two groups was compared. Prior to performing these two calculations, the September score for the Control and Experimental groups needed to be adjusted in terms of a reliability correction to allow for a measurement of error (Trochim, 2000).

A representative from each participating school tabulated the overall GMRT score for each student and then removed the student's name from the data sheet. Each school in

the district provided non-personally identifiable information of individual the student's grade, a class profile, and whole school grade level equivalent. The GMRT computer software allowed for a comparison of the students' scores to the benchmark score for the particular grade in that particular test-taking month. In September, the Grade 8 benchmark score was represented by 8-0 (Grade 8 and zero full months of instruction), and in May the benchmark score was represented by 8-8 (Grade 8 and eight full months of instruction). The covariance of the individual scores from the two Grade 8 student populations above the benchmark was the determining factor with regard to assessing a possible connection between training in literacy skills development and differences in student literacy skills as measured by GMRT scores.

Limitations

There were a number of limitations associated with this research design. One limitation involved the two Grade 8 groups measured. These two Grade 8 student groups were intact groups, meaning members of each group were not randomly assigned. To control for the differences in the covariant scores due to the potential differences in the not randomly assigned groups, a reliability-corrected ANCOVA was used. Leedy and Ormrod (2010) cautioned against using non-equivalent groups in a research design due to the validity problems caused by these types of groups. While this is one of the most commonly used research design methodologies, using two populations that are not randomly chosen, and are intact groups, can cause errors. Non-equivalent group comparisons may elicit a null effect for no other reason than that the two groups are very

different. Therefore, this type of research is vulnerable to internal validity threats of selection due to the nature of not being able to randomly assign participants to the Control and Experimental groups (Leedy & Ormrod, 2010).

A second limitation was the GMRT data and the variance of the Grade 8 student scores between late September and early May. This difference in scores might be attributed to student academic maturation rather than an influence of the literacy-initiated professional development sessions. Establishing a valid causal relationship between all subjects taught in Grade 8 and determining whether positive outcomes were a result of the focused literacy professional development sessions was very difficult to prove given the confines of this research design. Valid interpretation of what was influencing the observable effect might be a variable other than what was controlled (Creswell, 2009).

The final limitation was the reliability of the GMRT itself as a Canadian-normed reading screen. Leedy and Ormrod (2010) believed that a measuring tool ought to be controlled as much as possible to increase its reliability. The GMRT required little training to administer. By definition a reading screen is not designed to diagnose specific areas of weakness. Rather, it indicates the overall grade level at which each student is performing (Riverside Publishing Company, 2010). Therefore, the reliability of the group-standardized GMRT was not as accurate as an individualized literacy assessment administered by a trained professional. Deshler (2013) looked at cohorts of students who were writing disassociated standardized assessments, and repeatedly he discovered that the validity of those tests were questionable given the lack of connection to what the

students perceived as actual learning. Deshler's (2013) research supported Bean and Dagen (2011), who examined the validity of group administered tests as opposed to individualized assessments. To state conclusively that a group of students was performing at a certain grade level, within a designated school population at a set time period of time could not be guaranteed (Bean & Dagen, 2011).

The results from the GMRT were not diagnostic in nature. Rather, the data were represented as a grade level score that indicated the student, class, or grade ability level. For example, if a Grade 8 class was administered the GMRT in September, the appropriate benchmark level was 8.0; any student who scored 8.0 or higher was assessed as being at or above grade level. For that reason, the GMRT was only used by the school district in this research study as an initial assessment measure, and those students who scored at a lower percentile required further diagnostic testing to accurately assess their reading abilities; steps that were not part of the research procedure. The GMRT is a reading screen and by its nature only identifies students at a grade equivalency it does not diagnose literacy issues. For the purposes of this research, the GMRT data provided an indicator of academic achievement for two non-equivalent student groups. To increase research reliability, a more comprehensive literacy diagnostic test would need to be performed.

Summary

This reliability-corrected ANCOVA quantitative study explored the connection between teacher training in the area of literacy skills development and the differences in

student literacy skills as measured by GMRT scores. Particularly in this chapter the research design and the corresponding data collection techniques were defined with the limitations of the study examined. Understanding the inherent issues with a group administered reading screen, the GMRT was chosen by the school district because of its ease of use, and its group and individual assessment data.

Reviewing the data collection process for the research study, Grade 8 student GMRT scores were collected and analyzed over a two-year period. In 2012-13, Grade 8 student GMRT data was collected in September and then again in May to establish a Control Group in a year where no literacy professional development was given to teachers by the school district. In the 2013-14 school year, Grade 8 student GMRT data was again collected in September and May in a year when literacy professional development was given to all Grade 8 teachers. The 2013-14 student data was designated in this research study as the Experimental Group. To answer the research question, a reliability-adjusted ANCOVA was used to compare the beginning and end of year GMRT scores of the two student groups, those whose teachers did not have literacy skills training (Control Group), and those whose teachers did have literacy skills training (Experimental Group). A reliability-adjusted ANCOVA was used because the two Grade 8 populations were non-equivalent and a number of covariates were controlled for. IBM's SPSS 22.0 software was used to perform all statistical analysis in the study. A summary and discussion of the reliability-adjusted ANCOVA results is provided in the Results section of this dissertation.

Using two consecutive Grade 8 student populations as a Control and Experimental group brought in the issue of non-equivalent groups and problems with randomized research design, and subsequent statistical analysis techniques. Controlling the covariates in this research study allowed for an increased reliability factor that will be further explained in Chapter 4. In Chapter 4 the findings of the research study will also be discussed. Using various tables and figures, the statistical analysis of the GMRT scores of both the Control and Experimental groups will be assessed as contributing factors to research in the area of adolescent literacy, particularly the effect that teacher professional development in the area of literacy has on student academic performance. The examination of the effects of teachers receiving training in the area of literacy followed by differences in GMRT contributes to the body of literature that explored the integration of literacy in all subject areas for upper elementary, middle, and high school students.

CHAPTER 4: FINDINGS

Introduction

The purpose of this research study explored a possible connection between training in literacy skills development and differences in student literacy skills as measured by Gates-MacGinitie Reading Test (GMRT) scores in Alberta, Canada. The research design used 583 Grade 8 student test scores from the 2012-13 school year and compared them to 610 Grade 8 scores from the 2013-14 school year on the GMRT from eight middle schools in a Pre-Kindergarten to Grade 12 school district in the province of Alberta, Canada. Acting as a Control Group, Grade 8 student GMRT scores were taken from the 2012-13 school year prior to teachers having access to literacy training. These GMRT scores were compared to an Experimental Group in the 2013-14 school year when teachers received literacy training.

For each group involved in the research, Control and Experiment, students took the GMRT in late September and again in mid-May of the same school year. For their part, teachers in 2013-14 participated in four full-day professional development sessions orientated towards general and subject-specific literacy implementation. The following quantitative questions guided the research:

Is there a statistically significant difference in GMRT scores between students who were taught by teachers who received training in the area literacy and those who were not?

The null hypothesis (Ho) that represents this research question is:

H_0 : There is no statistically significant difference in GMRT scores between students who were taught by teachers who received professional development in student literacy skills development and those students who were not.

An alternate hypothesis (H_1) maintained:

H_1 : There is a statistically significant difference in GMRT scores between students who were taught by teachers who received professional development in student literacy skills development and those who students were not.

The dependent variable of Grade 8 training in student literacy skills development will correlate positively to the independent variable of Grade 8 teacher professional development sessions in the area of classroom literacy instruction.

Findings

Two Grade 8 student groups in subsequent years had the GMRT pencil and paper screen administered by their classroom teachers. The Control Group of Grade 8 students had a sample size of 583, and the Experiment Group had a sample size of 610. Table 1 represents the demographic make-up of the Control and Experimental groups.

Table 1

Grade 8 Student Populations - Baseline Demographic Characteristics

Characteristic	Control Group (<i>n</i> =583)	Experimental Group (<i>n</i> =610)	Chi-square test
Country of Birth			$\chi^2(2)=2.60, p=.27$
Canada	489 (83.9%)	525 (86.1%)	
Philippines	63 (10.8%)	64 (10.5%)	
Other	31 (5.3%)	21 (3.4%)	
Language Spoken at Home			$\chi^2(3)=6.51, p=.09$
English	488 (83.7%)	528 (86.6%)	
Tagalog	63 (10.8%)	64 (10.5%)	
Spanish	17 (2.9%)	13 (2.1%)	
Other	15 (2.6%)	5 (.8%)	
Gender			$\chi^2(1)=4.34, p=.04$
Female	286 (49.1%)	336 (55.1%)	
Male	297 (50.9%)	274 (44.9%)	
Students with special needs			$\chi^2(1)=.10, p=.75$
	31 (5.3%)	35 (5.7%)	

Using a $p < 0.05$ level for statistical significance, the covariant of Gender, as represented in Table 1, was the only statistically significant difference between the two groups. In the Control Group the ratio of male to female was 49.1% female and 50.9% male. These percentages were similar as compared to the Experimental Group where the ratio was 55.1% female and 44.9% male. Employing a chi-square comparison proved to be significant with a score of $\chi^2(1) = 4.34$, $p = .04$. The covariant of Gender would then be controlled for with subsequent comparisons to see if it affected the overall measure of difference between the Control and Experimental groups.

Regarding the other covariates of Country of Birth, Language Spoken at Home, and Gender, the two groups were also compared in terms of containing students with special needs. Table 1 illustrates that, within each tested group, schools identified students as special needs using the Alberta Education, Coding for Special Needs Funding criteria (Alberta Education, 2012).

The mean and standard deviation of the two groups was compared in order to calculate if there was a significant difference from the Control Group to the Experimental Group. If the two groups had been randomly assigned, the most appropriate way to determine whether or not there was a statistically significant difference between the pre- and post-test of two groups would have been to use ANCOVA assessment for the data. Because the two investigated groups were intact groups and not randomly assigned, there was a need to address this possibly confounding issue. The statistical analysis procedure that corrects for pre-existing tendencies of intact group data is known as a reliability-

corrected ANCOVA. Accordingly, the data was analyzed using a reliability-corrected ANCOVA. Figure 1 is a brief statistical explanation of the process.

Figure 1

Adjustment Formula For Controlling Measurement of Error

$$X_{\text{adj}} = \bar{X} + r(X - \bar{X})$$

where:

X_{adj} = adjusted pretest value

\bar{X} = original pretest value

r = reliability

As represented in Figure 1, an adjustment of the September scores from two groups was performed in order to increase the reliability coefficient by bringing the scores closer to the mean (Trochim, 2000). The formula $X_{\text{adj}} = \bar{X} + r(X - \bar{X})$ was used and the adjusted score was calculated. “ X_{adj} ” equals the adjusted score; “ \bar{X} ” is equivalent to the original pre-test score; and “ r ” represents reliability (Morsy, Kieffer & Snow, 2010). The adjustment score related a value that controlled for regression when comparing bell curve data migrated to a linear progression. The GMRT reliability measure ($r=0.95$) was used in order to determine the overall reliability (Morsy, Kieffer & Snow, 2010).

The reliability-corrected analysis of covariance (ANCOVA) for the Control and Experimental groups indicated that the descriptive data for the two groups was similar in terms of statistical characteristics. Using IBM’s SPSS (Statistical Package for the Social Sciences) software, two analyses were conducted: reliability-corrected ANCOVA

without any demographic factor adjustments, and reliability-corrected ANCOVA controlling for gender. Table 2 contains the results from the analysis:

Table 2

GMRT Scores

GMRT Score	Control Group (<i>n</i> =583)	Experimental Group (<i>n</i> =610)	t-test comparing two groups
GMRT September	<i>M</i> =8.11, <i>SD</i> =2.40	<i>M</i> =8.12, <i>SD</i> =2.41	<i>t</i> (1191)=-.07, <i>p</i> =.94
Adjusted GMRT September	<i>M</i> =8.11, <i>SD</i> =2.28	<i>M</i> =8.12, <i>SD</i> =2.29	<i>t</i> (1191)=-.08, <i>p</i> =.94
GMRT May	<i>M</i> =8.62, <i>SD</i> =2.46	<i>M</i> =8.64, <i>SD</i> =2.50	

Table 2 represents the mean, standard deviation, and t-test for comparing two groups. For each testing period for Control and Experimental groups, the difference between the groups was not statistically significant using a $p < 0.05$ level for statistical significance.

This data included the Adjusted September scores category as well.

Both reliability-corrected ANCOVA statistical analyses used the same elements of Time (as repeated measures factor, September versus May), Group (between subjects factor, Control versus Experimental), interaction term between Time and Group, and Gender (for models where the researcher controlled for gender). Significant interaction will determine whether there is a difference between Control and Experimental groups in the degree of change of students' GMRT scores.

Figure 2

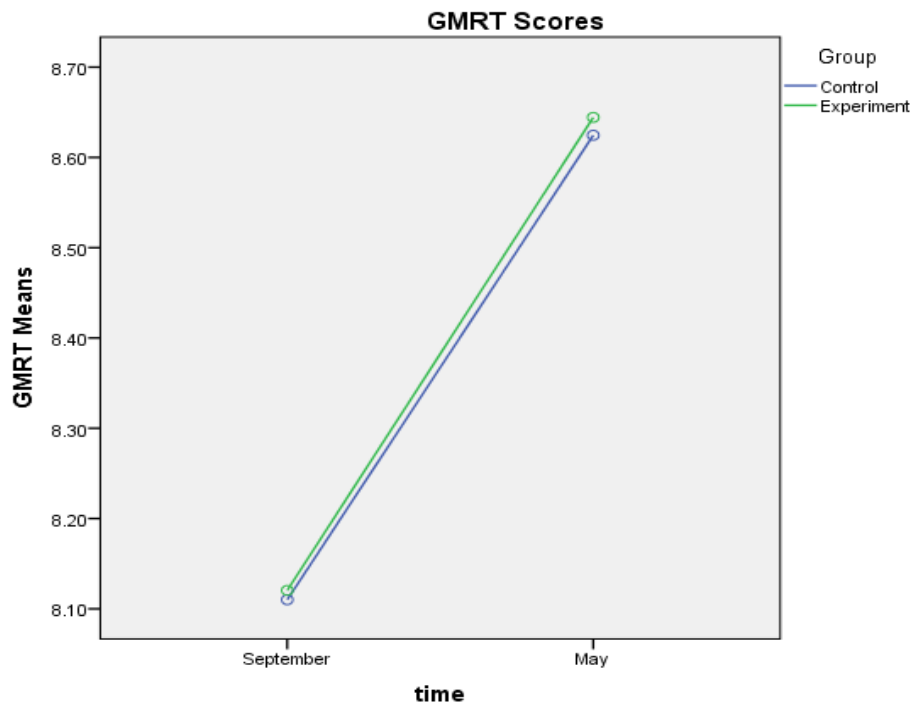
Control and Experimental Group Comparison

Figure 2 illustrates that Grade 8 students performed in a similar fashion in both the Experimental and Control groups. Both Control and Experimental groups started and ended with the same linear progression and both groups gained in their mean score as they progressed in time. Analysis of the data indicated that there was no statistically significant difference between the Control Group and the Experimental Group with respect to teacher Professional Development in the literacy and student performance on the GMRT.

The data in Table 3 indicates evidence that there was no statistically significant difference in reported factors from Control to Experimental groups using the reliability-corrected ANCOVA statistical design.

Table 3

Reliability-Corrected ANCOVA Analysis Results

ANCOVA Model, Factors	F-value
All GMRT scores, not controlling for gender	
Time (May-September)	$F(1,1191)=135.42, p<.001$
Group (Control vs Experimental)	$F(1,1191)=.01, p=.91$
Time \times Group interaction	$F(1,1191)=.01, p=.92$
All GMRT scores, controlling for gender	
Time (May-September)	$F(1,1190)=67.49, p<.001$
Group (Control vs Experimental)	$F(1,1190)<.01, p=.96$
Time \times Group interaction	$F(1,1190)=.01, p=.91$
Gender (Males vs Females)	$F(1,1190)=1.14, p=.29$

The interaction effect of Time and Group indicates that there was no statistically significant difference between the two groups in terms of GMRT scores. As represented in Table 3, all students in both groups improved from September to May, regardless of training in student literacy skills development. There was a statistically significant difference with the covariant of Gender between the two groups, but when an ANCOVA

was performed to isolate this covariant it was determined that this also did not impact the overall results of the research.

Summary

The primary focus of this research explored the possible connection between training in literacy skills development and differences in student literacy skills as measured by GMRT scores. After controlling statistically for specific covariates, as an entire group of comparing the interaction between Control and Experimental groups, the H_0 (null hypothesis) of no statistically significant difference was accepted.

Regardless of teacher professional development in the area of literacy, students in general improved over time in both Control and Experimental groups as demonstrated through the GMRT. This was true regardless of the covariates that were controlled. The covariant of Gender was determined to be statistically distinguishable between the two groups, but, even after being controlled, it was not a statistically significant difference in determining the null or alternate research hypothesis.

Chapter 5 will discuss in detail the findings of this research study as it related to teacher professional development in the area of literacy and its affect on student achievement. It will demonstrate the application of the findings to the problem statement and it will also show an application to school- and site-based leadership. Finally, Chapter 5 will give recommendations for future action and make recommendations for future research.

CHAPTER 5: CONCLUSIONS AND DISCUSSION

Introduction

This applied research study was designed to measure the effects of teacher training in literacy skills development and differences in student literacy skills as measured by student Grade 8 GMRT scores in Alberta, Canada. Through a series of professional development sessions focused on practical literacy skills, teachers developed an awareness and understanding of the importance of literacy as applied to their subject area. While there was a large body of evidence that supported literacy integration programming in the lower elementary classroom, there was a lack of comprehensive research to support professional development for cross-curricular teachers in the adolescent grades (Allington & Gabriel, 2012).

Over the course of 10-months Grade 8 teachers participated in four full days of focused professional development. These sessions concentrated on four aspects of student literacy development. District personnel, with teaching experience and research background in the area of adolescent literacy, facilitated all four sessions throughout a 10-month period. Except for the initial one, each professional session recapped the previous one and material was continually added that deepened the participants' understanding of literacy strategies in the classroom.

Using a reliability-corrected ANCOVA quantitative research method approach, the research question for this study focused on whether there was a statistically significant difference in GMRT scores between students taught by teachers who received

professional development in the area of literacy and those who were not. A specific null hypothesis (H_0) quantitative research statement indicated that there was no significant difference between Grade 8 student standardized test scores on the Gates-MacGinitie Reading Test (GMRT) given prior to and following a series of four literacy professional development sessions for Grade 8 teachers.

This chapter includes findings and conclusions relating to the identified area of research. It examines the application of those findings to the main problem statement and how it relates to leadership in education. Finally, the chapter provides recommendations for action and areas of future research.

Discussion of Findings and Conclusions

GMRT data from Grade 8 students in a year when teachers did not receive any formalized training in student literacy skills development (Control Group, $n=583$) was compared to Grade 8 student scores when teachers did receive training (Experimental Group, $n=610$). The objective of the research was to compare both sets of data to determine if the Control Grade 8 group had a statistically significant difference in GMRT scores when compared with the Experimental Grade 8 group. Because the two investigated groups were intact and not randomly selected, there was a need to address this in the research design. In order to control for possible covariant influences, a reliability-corrected ANCOVA model was employed to ensure that all observed groups were equal in terms of known covariates.

Controlling for the identified statistically significant difference between the two groups in the covariant of gender, the adjusted GMRT September mean and standard deviation scores for the Control and Experiential groups indicated that both were comparable. Overall the two groups performed similarly when tested in late September and then again in mid May (see Figure 2). In September, the adjusted GMRT mean for the Control Group was $M=8.11$ ($SD=2.28$), and the mean for the Experiential Group was $M=8.12$ ($SD=2.29$). These two mean scores indicated that both Control and Experimental groups started at a similar point and were comparable in terms of covariates other than gender.

Comparing the mean May scores of the Control Group ($M=8.62$, $SD=2.46$) to the mean May scores of the Experimental Group ($M=8.64$, $SD=2.50$), there was not a statistically significant relationship between teacher training in the area of literacy skill development and an increase in GMRT scores. Using a $p<0.05$ level for statistical significance, Experimental Group GMRT scores failed to demonstrate that student performance had improved to a statistically significant level as a result of teacher training in the area of student literacy skills development.

In assessing the research outcomes of this study, the correlation of teacher training in literacy skills development and differences in student literacy skills as measured by GMRT scores, there were similarities to established studies. However, for the purpose of this research the exposure of teachers to classroom literacy strategies did

not significantly increase the level of student performance as measured by results on the GMRT.

The research findings in this dissertation indicated no statistically significant increase in student scores on the GMRT as a result of teacher professional development in literacy. However, in other studies by Krashen (2014), Deshler (2013), and Allington (2009) indicated that there is a need to create awareness of integrating literacy into daily instruction because of the importance it has on student learning and academic potential. The initial problem that this study set out to address was the ability to bring literacy awareness to teachers in upper elementary, middle, and high school communities. In spite of the outcome, this quantitative-method study on the effect that teacher professional development has on student academic performance is supported by research that identified literacy as a contributing factor to student success (Afflerbach, 2012; Allington, 2009; Bean & Dagen, 2011).

Literacy development in courses other than the language arts subject area became a part of the desired outcome of the school division's implementation plan. A sustained focus on literacy was developed, and a division-wide 3-year implementation plan for all grades to be active in the initiative was implemented. The research data gathered in this study was part of the first year of implementation.

An interpretation of the research data suggested that Grade 8 teachers were not incorporating literacy strategies into their classrooms on a regular basis. Allington (2009) stated that unless literacy intervention strategies were sustained and continually repeated

the achievement gap would continue to widen as students increased in age. Allington (2009) and Deshler (2013) believed that targeting students who were struggling to reach grade level competency and were performing at a lower level required specific literacy strategies in order for achievement to increase. The results from this study do not fully support the aforementioned research. The level to which Grade 8 teachers of the Experimental Group employed the demonstrated literacy skills is not known as this information was outside of the set parameters of this research.

Application of Findings and Conclusions to the Problem Statement

The findings and conclusions from this quantitative study addressed the general research problem of the lack of literacy professional development for teachers in the area of literacy. Specifically, the study determined whether academic achievement in Grade 8 students was affected when cross-subject teachers were given literacy focused professional development over a ten-month time period was explored. The goal of the school district in the study to create strategic professional development for middle school teachers in the area of content literacy was defined and explored. While the results of the research did not indicate that the professional development directly influenced student achievement, the ability for schools to introduce full-scale subject area focused literacy professional development is highly encouraged.

This quantitative study on teacher training in student literacy contributed to the already established body of research that supported the training of teachers to use literacy instruction in the classroom. The research generated from this research study only

pertained to the specific academic group of Grade 8 students and Grade 8 teachers within the study. The traditional perceptions of upper elementary, middle and high school needing training in the area of literacy in cross-subject areas were challenged by this research. Often, these perceptions were external, while other times these perceptions were manifested within the group itself (Phelps, 2005).

The implementation of a district-wide literacy professional development plan allowed for all teachers, regardless of subject area or grade taught, to gain knowledge of integrating literacy into daily lesson delivery. The information gathered from this study will contribute to future research that is focused on the effect that teacher professional development has on adolescent student academic performance as measured through a group-administered standardized test. The need to further explore, in a longitudinal manner, the effects of teacher professional development on student performance is necessary.

The applied research contained in this study indicated that professional development in the area of literacy levels of students and number of subsequent variables needed to be examined. The data collected in the research did not measure whether teachers were actually using the literacy strategies that were given to them at the professional development sessions. A Grade 8 student and/or school administrator qualitative feedback survey would have assisted in determining the implementation variable, determining if strategies were actually being used in the classroom. Another contributing variable would be the Grade 8 teacher's perceptions of the success of the

literacy strategies being used. Engaging in this evidence piece would have provided an accountability measure for teachers to actively use the literacy strategies they were given and reflect on whether they were successful or not.

Within the confines of the research there was not an evidence piece that indicated whether teachers were using all of the literacy strategies in the manner in which they were designed. Anecdotally, teachers commented during the literacy professional development sessions that they were experiencing difficulty employing the strategies for hard-to-reach groups of students who were struggling academically or those who were gifted. Although teachers attended all of the prescribed professional development days, it was difficult to determine whether or not they were actually employing all of the strategies with fidelity. The research on high-yield literacy strategies had a sound basis, but the extent to which these strategies were being used was not part of the research design. In order for similar research designs to be successful in the future it would be recommended that a set of reflective questions to both teachers and students be incorporated into the study. This would allow for the collection of qualitative data in regards to teachers being able to accurately determine if they were using the assigned literacy strategies correctly.

Application to Leadership

The findings of this research study were directly applicable to school-based and district-based leadership. The ability to ensure that teachers were involved in the professional development sessions and were using the literacy strategies on a day-to-day

basis was not an element of this study and should be the subject of future investigation. Once the Grade 8 teachers finished the sessions it was not known whether or not the teachers used the demonstrated literacy strategies in their classrooms. In order to do this with a certain degree of assurance, the building administrator ought to be more involved. When investigating the role administration plays in school improvement, Fullan (2014) believed that principals must take on the role of instructional leader in order for authentic pedagogical change to take place. The aspect of institutional leadership was an element within this research that required further examination.

Robinson (2010) made a similar observation. Robinson (2010) found that in order for student success to increase, a principal must establish a common set of goals and expectations around the area of focus. The positive outcome that results in a leader being an active member of a school's growth plan cannot be underestimated. Robinson (2010) believed that the school leader must be seen as supporting initiatives not only through financial means, but by being active in the learning process as well. These factors created a professional learning community that embarked on a focused journey of student improvement, with the school leader as an active participant.

In the year of the Experimental Group during this research, and as part of the vision of the school district, school administration teams were given two half-day professional development sessions that outlined the steps taken by teachers in building a culture focused on improving literacy. During these administrator literacy sessions, the main concepts of the teacher professional development sessions were defined and

explained. Specifically, administrators were instructed as to what to look for in a literacy-rich classroom for all grade levels. Research supported the inclusion of administrators in the learning process, and they were seen as crucial in terms of school improvement (Fullan, 2014; Robinson, 2010).

Recommendations for Action

Traditional concepts of what a teacher is responsible for in relation to what grade he or she teaches can be an item for debate (Phelps, 2005). The goal of this quantitative research was to demonstrate a potential relationship between teacher training in student literacy skills development and student literacy changes as defined by the results of GMRT assessments. Improving student literacy performance is seen as a language arts focus or a lower elementary pursuit (Kittle, 2013). While the ability to create a strong base starts in grades 1, 2, and 3, the continued focus on equipping students with essential literacy skills must continue throughout their educational career.

From the evidence presented in this research there are a number of ways in which school districts can improve in terms of making literacy a part of a teacher's daily routine. Primarily, connections must be made between specific subjects and the value of literacy instruction. In terms of the non-humanities subject areas, particularly science and math, the ability to link literacy into the classroom is essential. Deshler (2013) believed that the vocabulary-rich science and math classrooms underutilized the literacy strategies, thus failing to fully comprehend important terms and definitions. Mainly taught in an isolated context, scientific and mathematical terminology held no meaning to a student,

and therefore it was only memorized in a rote manner. To provide true meaning and ultimately lifelong learning, content-heavy courses needed to offer students a literacy-based means in which they could learn in an authenticated manner (Beers & Probst, 2013). Subject content presented in an unconnected manner to students ultimately led to frustration and an increased failure rate (Deshler, 2013).

The concept of professional development, and how it enhanced the pedagogical skills of teachers, was a balance between the autonomy of the individual and supporting a collective of the school community. Teacher unions and associations insisted that it was the right of the individual teacher to decide the direction of their professional development, believing that teachers were the best ones to determine their own needs and wants (Alberta Teachers Association, 2009). In contrast, Marzano and Waters (2009) believed that, if a school or school district was to move progressively in a united direction, there was a requirement for universal professional development for all teachers. To that end, and in order for all teachers to adopt and employ literacy strategies across all grades and all subject levels, the idea of making particular professional development sessions non-negotiable ought to be explored. While it cannot be guaranteed that wholesale professional development for all teachers resulted in the desired outcome of change, it did become an essential step in the process (Bean & Dagen, 2011; Cole, 2013).

The data gathered through standardized tests, such as the GMRT, must ultimately have an impact on instruction. Standardized tests allow teachers to assess areas of strength and weakness in terms of student learning and must subsequently lead to

changes in differentiation of instruction. Guskey (2102) believed that the idea of using student data to bring about changes in classroom instruction must be part of every teacher's repertoire. Once assessed, a teacher must take student data and use it to enhance his or her teaching methodology. In order for this to happen, teachers must be given time to analyze student data and then determine how to best meet individual student needs. When using the GMRT to enhance instruction, teachers must assess student need individually and then ensure that appropriate learning opportunities were made available to address those needs.

The aspect of teacher supervision in using the presented literacy strategies on a regular basis was a limitation. While all Grade 8 subject teachers attended the professional development sessions, it is not known exactly how many teachers used the literacy strategies on a regular basis. How many teachers used the literacy strategies and how often strategies were employed was not accounted for in the study, and therefore cannot be addressed.

Recommendations for Further Research

The impact that literacy instruction had on student learning created a focus for this study. Coupled with the deployment of district-wide comprehensive professional development for all teachers, the following recommendations are made for further research:

1. A longitudinal study lasting three to five years and examining the incorporation of student literacy skills development in the classroom

would reveal a comprehensive perspective and a more substantial assessment of literacy integration in the classroom. The National Middle School Association (2011) examined teacher professional development and recognized that approximately 15% of teachers surveyed were early adopters who employed newly acquired strategies immediately. The remaining 85% of teachers were more reluctant and required additional support to implement new teaching strategies in their classrooms. A research study that extended its timeline over three to five years would create a comprehensive picture in terms of the success or failure of grade appropriate literacy strategies, and the effect of those strategies on student academic performance.

2. A school leader's capacity to bring about change in a school environment is a focus area that ought to be investigated further in terms of its relevance to student performance. The notion of school leaders as instructional leaders and conduits of positive change would be an avenue for research. Fullan (2014) and Robinson (2010) both examined the effects of instructional leadership on school improvement and found that school leadership and instructional leadership should be synonymous with one another. Fully analyzing the effects of administration instructional leadership in terms of literacy integration would be an area

of valid research given the importance of school leaders and school change.

3. Working with identified struggling teachers is a recommended area of investigation. Training these teachers in student literacy skills development could help them find more success in their teaching. Phelps (2005) believed that teachers were unaware of the impact that literacy had on student performance in later grades, particularly in heavy content subject areas. Working with marginal teachers in not only identifying literacy strategies, but also other strategies that ultimately make them more effective in the classroom, is an area of investigation in terms of enhancing student performance.
4. The utilization of diagnostic reading assessment tools, other than the GMRT, would contribute to the area of adolescent literacy. How teachers use the information to shape classroom instruction is the context suggested. While many school divisions are exploring the use of a wide variety of student reading and comprehension tools, the capacity to transfer that information to differentiated instructional strategies would be a useful study. Teachers must look at the collection of student assessments and determine how it will be used to guide instruction. In early elementary grades the use of student diagnostic material and its ability to shape instruction was more pervasive (Allington, 2009). In later

grades diagnostic reading and writing assessments were routinely administered, but how that information was being used in terms of changing instructional methodology is an area for further investigation (Phelps, 2005).

5. The importance of district support for implementation and classroom integration must be assessed and examined further. Marzano and Waters (2009) argued that the alignment of goals from the school district to the school and then the school to the teacher must have symmetry and relative compatibility with one another. While literacy was acknowledged as an issue at the district level for example, it must be perceived as a concern of the school and teachers as well. Research into the alignment of district, school, and individual teacher professional development goals would be valuable. If a correlation can be established between all three of these levels and student academic success, it would make an informative case study.
6. The aspect of student voice was not included in this study, but it should hold an important relevance in terms of teaching and learning. Student feedback should be solicited in terms of the literacy strategies they found useful. Deshler (2013) noticed that younger students responded differently to a variety of literacy techniques depending on their level of academic performance. If this were true it would be an area of further

research in the study of adolescents and their reading abilities relating to teacher professional development and implementing literacy strategies in the classroom. To assess which techniques lower-performing middle and high students found useful would create a correlation in terms of pedagogical methodology for particular teaching strategies.

Concluding Statement

Improving student literacy skills, and making this a priority for teachers in their daily lesson delivery, continues to be an issue for many upper elementary, middle, and high school teachers. While the importance of literacy has been demonstrated repeatedly, the overall integration into teacher lesson plans on a regular basis has remained inconsistent (Allington, 2009; Afflerbach, 2012; Deshler, 2013; Phelps, 2005). Primarily seen as a lower elementary endeavor, literacy instruction and the use of literacy techniques on a regular basis has not been recognized as important to secondary school teachers. From one perspective, schools were seen as a filtering system where students who were not able to perform at a certain academic level were removed and placed into remedial programming, regardless of potential intelligence. Deshler (2013) addressed this phenomenon when he looked at the average academic ability of students within at-risk programs. Rather than having a low overall intelligence, the students only required exposure to focused literacy skills in order to achieve at the same level as their typically developing peers (Deshler, 2013).

The focus of this research study was to examine the possible connection between teacher training in literacy skills development and differences in student literacy skills as measured by GMRT scores. Over a 10-month time period, when Grade 8 teachers attended four full-day division-sponsored literacy workshops, the results from the study demonstrated that there was no statistically significant relationship between these variables. While results from the study indicated no statistically significant difference in student achievement in a year when no literacy professional development was offered to teachers as compared to a year when it was, there was still a need to keep teachers focused on student literacy levels. Further research is suggested in the areas of school instructional leadership as it relates to the implementation of literacy and the length of time for implementation (Fullan, 2014, Marzano & Waters, 2009; Robinson, 2010). Supporting research in terms of instructional leadership and teacher supervision and evaluation is recommended for any future study related to literacy professional development. This focus might provide a better understanding of literacy's full effect on adolescent student performance.

In conclusion, although the results from this study did not indicate a statistically significant change in student standardized test scores as a result of teacher exposure to literacy skill development, the results did indicate that students progressed at an age-appropriate manner in both the Control and Experimental groups. Afflerbach (2012) supported literacy skill development and maintained that it was absent from many middle and high school subject area classes. He believed that only remedial programs in later

grades focused on literacy skill development as a way of increasing academic performance. However, rather than isolating literacy skills to students who are considered academically at risk, these strategies should become part of every teacher's daily repertoire.

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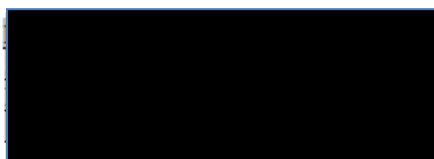
APPENDIX A

Organization Informed Consent Form



Organizational Informed Consent Form

Name of Organization
Address
City, State, Zip
Telephone

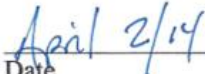


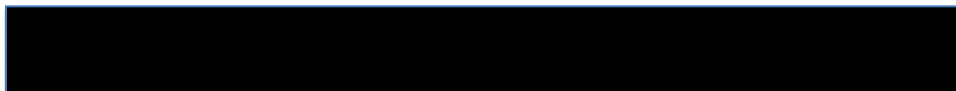
By signing this consent form, I understand that Mr. Dave Khatib (the researcher) is a candidate for an advanced degree, or a faculty member of City University of Seattle. I understand that the researcher is conducting a study entitled FOCUSED TEACHER PROFESSIONAL DEVELOPMENT TO IMPROVE THE LITERACY PERFORMANCE OF MIDDLE SCHOOL STUDENTS. The purpose of this research is to investigate the possible correlation between Grade 8 teachers receiving literacy skill training and improved student performance on a standardized reading screen. Specifically, by comparing Grade 8 students' pre and post standardized test results from the Gates-MacGinitie Reading Test (GMRT), it will determine if there is a positive relationship between district-sponsored teacher professional development sessions and an increase in student literacy levels over a 10-month period.

I understand the findings of this research study are solely the responsibility of the researcher. It is understood that any and all information/data the researcher collects from contacts within and/or about our organization outside the research protocol will not be part of the research findings. I understand the researcher may publish findings following completion of this study. Any information published will be limited to the findings of the research. No research participants will participate in this study without organization and City University of Seattle Institutional Review Board (IRB) knowledge and approval.

- I grant the researcher permission to contact members of the organization for the purpose of requesting participation in the study as required by the research design.
- I grant the researcher permission to use organizational premises as necessary to conduct the research.
- I grant the researcher permission to collect, use, and store documentation related to the project under study. I understand that in granting permission to access program documentation, the researcher may store copies in a secure manner outside of the organization.
- The researcher will maintain all documentation and findings regarding this organization in confidence and confine its use to this research study.
- On behalf of the organization, I request a final copy of this research report.


Organization Representative and signature


Date



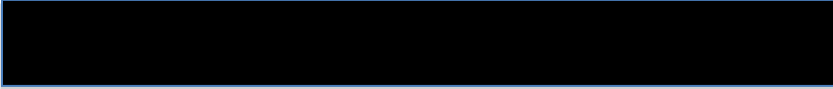
Name of Research Supervisor or Advisor: Dr. M. Chow
Contact Information
Address: 521 Wall St, Seattle,
WA 98121,
United States
Phone number: 1-425-709-5411
Email: mchow@ityu.edu

APPENDIX B**Publisher Consent Email**

Re: Nelson Education Ltd Thank you for your request Customer Service Assistance for Higher Education Customers (Thread:606324)

1 message

Sun, Apr 6, 2014 at 1:45 PM



Dear Mr. Khatib,

Thank you for contacting Nelson Education Ltd, Canada's leading educational publisher providing innovative products and solutions for learners of all ages. We appreciate the opportunity to provide you with a timely response.

Your request has been approved to use in your research any and all references to the Gates-McGinitie Reading Test (Canadian Edition)

Thank you.

Yvonne Jensen
Research and Permissions
Nelson Education Ltd

Please note:

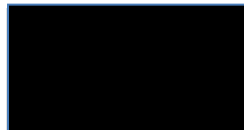
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APPENDIX C**Researcher Letter To The School Board**


Mr. Dave Khatib



May 1, 2014

Re: Access to Student Data

Dear 

As you know I am a student in the Doctor program at City University of Seattle. My research involves assessing whether teacher professional development in the area of literacy has an impact student performance. Primarily my research will focus on Grade 8 student achievement in the  School Division.

I would like to access to the district's Grade 8 student Gates MacGinitie Reading Test scores for September and May of the 2012-13 and 2013-14 school years. This aggregated data will be used to assess if there was a difference in student performance on the basic reading comprehension screen as a result of teacher professional development in the area of literacy. The data used will have no identifiable indicators to it and there would be no characteristics identifying individual students, classes, or schools from the sample population in the research.

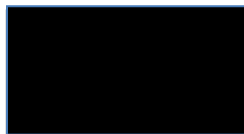
I believe that my research would not only benefit the school district, but the field of education in a boarder sense. I would be delighted if you would consider my request to access student and teacher data for my literacy research.

Sincerely,

Mr. D. Khatib

APPENDIX D**Researcher Letter To Grade 8 Parents**

Mr. Dave Khatib



May 1, 2014

Re: Current and Former Grade 8 Student Gates MacGinitie Reading Test Scores

Dear Parents:

Please allow me to introduce myself. My name is Dave Khatib and I have worked for the [REDACTED] district for approximately 25 years. During that time I have been a teacher, counselor, school administrator and I am now the District Principal working at school board office.

Currently I am working on my Doctor of Education degree and I am in my last year of the program. My primary research focus involves assessing if teacher professional development in the area of literacy has had an impact on student performance. Specifically my research will center on Grade 8 students and teachers in the [REDACTED] School Division. In order to assess this factor I would like access to the district's Grade 8 student Gates MacGinitie Reading Test scores for September and May of the 2012-13 and 2013-14 school years.

The data used will have no identifiable indicators to it and there will be no characteristics indicating individual students, classes or schools from the examined population. In other words, no students or specific student populations in the [REDACTED] district will be identified in my research or publications. The security of individual student data would be my upmost priority during the research time period.

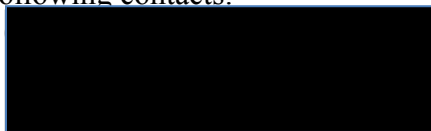
If you object to your son or daughter's test information being used in this research please contact me and I will remove them from the student research cohort.

If you have questions in regards to my research please do not hesitate to contact me. I can be reached at the following contacts:

Office phone number:

Private email:

Cellular phone:



Sincerely,
Mr. D. Khatib

APPENDIX E**Professional Development Session Outlines****Middle School Literacy Meeting****October 25, 2013****Session 1**

Prayer

Part I:

1. Review RDCRS Division Literacy Plan
2. Reflect on our current instructional beliefs
3. Explore two instructional models:
 - a. Gradual Release of Responsibility
 - b. Optimal Learning Model
4. Articulate how these models can enhance our current instructional approaches and benefit student learning

Part II:

1. Reflect on a learner profile, identify the data that is important to inform literacy instruction
2. Align literacy instructional strategies at the universal and targeted level to learner profiles
3. Brainstorm strategies to share the relevant data with classroom teachers and staff

Middle School Literacy Meeting
December 13, 2013
Session 2

Prayer

Introduction - reading interest

What does the research tell us?

High Yield Literacy Techniques:

1. Pre - During - After Reading

2. Vocabulary/Word Wall

3. Gradual Release of Responsibility

Exit Feedback activity:

1. What was one thing that you learned today that was new?

2. What can you do in your classroom tomorrow that you learned today?

3. How can we improve the session for you next time (Feb. 21, 2014)?

Middle School Literacy Meeting
Feb. 21, 2014
Session 3

Prayer

Introduction – Review of practice

Literacy in all classes

1. Fake readers and working with them

2. Easy to use strategies for all subjects

3. Specific strategies for all subjects
Independent work

Exit Feedback activity:

1. What was one thing that you learned today that was new?

2. What can you do in your classroom tomorrow that you learned today?

3. How can we improve the session for you next time (April 11, 2014)?

