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The Impact of Computer-Assisted Writing on Improving Writing Scores for Urban Eighth-Grade Students

Latilya W. Butler

Nova Southeastern University, latilyawilliams81@gmail.com

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The Impact of Computer-Assisted Writing on Improving Writing Scores for Urban
Eighth-Grade Students

By
LaTilya Williams-Butler

An Applied Dissertation Submitted to the
Abraham S. Fischler College of Education
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

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Approval Page

This applied dissertation was submitted by LaTilya R. Butler under the direction of the persons listed below. It was submitted to the Abraham S. Fischler College of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

Goli Rezai-Rashti, PhD
Committee Chair

Diane Bryant, PhD
Committee Member

Lynne Schrum, PhD
Dean

Statement of Original Work

I declare the following:

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LaTilya R. Butler
Name

May 18, 2016
Date

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First and foremost all praise goes to God for giving me the strength to take on this journey and the vision to see it through. I know that as long as he orders my steps anything is possible. Thank you God!

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Abstract

The Impact of Computer-Assisted Writing on Improving Writing Scores for Urban Eighth-Grade Students. LaTilya R. Butler, 2016: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler College of Education. Keywords: Qualitative Research, Case Study Approach, Computer-Assisted Instruction (CAI), Writing Across the Curriculum

The purpose of this study was to investigate the impact standards-based aligned computer-assisted writing instruction had on improving writing scores for eighth-grade students that attend an urban middle school. The researcher wanted to remedy the problem of low writing achievement of eighth-grade students and determine if writing across the curriculum along with differentiated instruction through the integration of technology better prepared students for state level assessments.

The data gathering instruments were Standardized Testing, Scholastic Achievement Manager Reading Reports, and open-ended format questions. Three research questions guided this study.

1. What is the impact of computer-assisted instruction and use of technology on improving eighth-grade students' writing in an urban middle school?
2. What are eighth-grade students' perceptions and experiences with computer-assisted writing? What is the pedagogical significance of computer assisted learning from students' perspective?
3. What are eighth-grade teachers' perceptions and experience with computer-assisted writing? What are the challenges and benefits?

A qualitative case study approach revealed the need for better integration of technology in order to support student learning. There were similar perceptions on the use of instructional technology pointed out in the participants' responses on the questionnaire. Archived assessment data showed a prevalent need for consistency of computer-assisted instruction and group efforts to write across the curriculum. Student and teacher participants agreed that they felt more operational technology was needed to increase student engagement and academic achievement. The findings can be used to inform stakeholders of effective instructional technology when deciding on computer-based programming designed to increase student writing scores.

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Chapter 1: Introduction

Topic

The problem at the urban middle school was the low achievement of the eighth-grade writing test scores of students that attended an urban middle school. This study investigated the contributing factors that impeded student writing and the affect those factors had on students' achievement. The Georgia Department of Education indicated that about 41% of eighth-grade students fail to achieve success in the area of writing (Georgia Department of Education, 2013). In 2007, the National Assessment of Education Progress (NAEP) reported that 58% of Georgia students scored at the Basic level in writing, 29% scored in the Proficient level, and the remaining percentage scored below Basic level writing (NAEP, 2007).

Georgia law required that writing assessments be administered to students in grades three, five, eight, and eleven (Georgia Writing Assessment, 2010). Grade 8 was considered the bridge to high school, and each year in January all eighth-grade students participated in the Georgia Eighth-Grade Writing Assessment (EGWA). Student achievement was determined by the holistic score received based on four domains: Ideas, Organization, Style, and Conventions on the EGWA.

Middle school, as seen by the researcher, was the transitional stage in education when foundation skills from elementary school were transferred and reinforced in middle grades then built on to aid students in completing secondary education, as they prepared to enter the global economy. Located in the central part of Georgia, the school district collectively served approximately 1630 eighth students each academic year. The urban middle school in this study is 1 of 7 middle schools in the district and had an eighth student population of about 160 students each academic year.

Previous writing assessment results conveyed that students' achievement in writing was not consistent, therefore impeded the ability to meet the grade level standards in the area of writing. Language Arts teachers at the school studied discussed the weaknesses in student performance and agreed that limited background knowledge and limited exposure to the universal themes included in the writing situations presented a barrier for student writing. Other factors that contributed to student weaknesses included limited vocabulary to write intelligibly, and reluctance to properly demonstrate the writing process to display correct composition organizational structure.

The Statement of the Problem

The problem investigated in this study was the low achievement of eighth-grade writing test scores for students that attended an urban middle school. This study investigated the use of computer-assisted writing and the impact it had on remedying factors that impeded student writing in order to enhance student achievement.

Background and Justification

Trend data has shown substantial changes in writing scores as different classes of eighth grade students participated in the Georgia writing assessment. At its lowest percentage in 2010, 36% of tested eighth-grade students passed the EGWA. In subsequent years the scores were as follows: 68% in 2011, 72% in 2012, a significant decrease to 58% in 2013, then a 13 point increase to 71% in 2014, in 2015 the assessment changed and was administered later in the school calendar year.

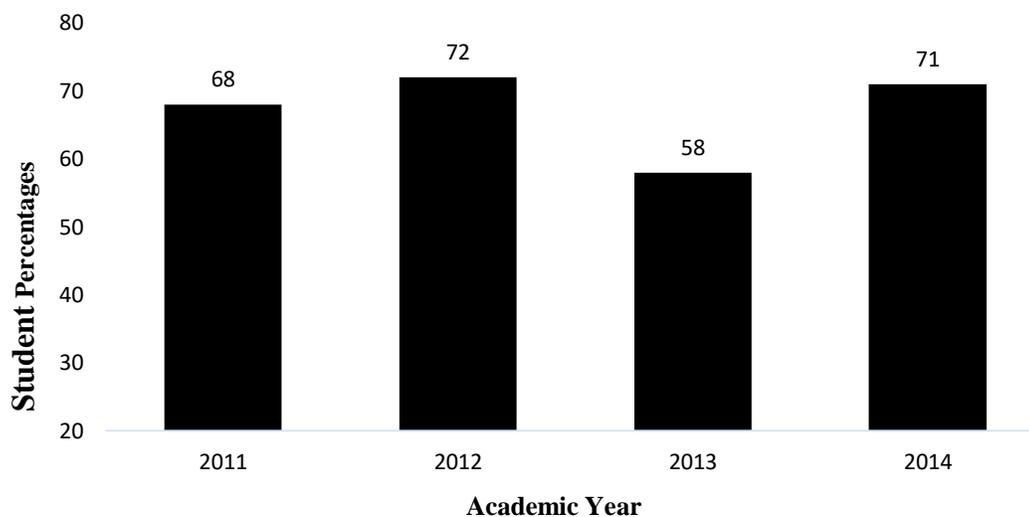


Figure 1. Eighth-Grade Writing Achievement Trend Data.

Each year new goals are set for the new class of eighth-grade students with the expectation to see growth in all content areas, especially in the area of writing. The expectation is to encourage students to perform better than the previous year eighth-grade students' percentage wise on the Georgia Eighth Grade Writing Assessment.

Unfortunately, eighth-grade writing scores fluctuated in the same manner throughout the district as incremental increases have displayed an average of 65% of 1650 tested eighth-graders passing the writing assessment over a trend of three years with approximately 35% unable to meet the writing standards required to pass the writing assessment by responding appropriately to writing scenarios (Georgia Writing Assessment, 2014).

All of the seven middle schools in the school district are Title I schools, with large populations of at-risk and socio-economically disadvantaged students at each school. The student demographic of the urban middle school in this research was 97% Black, 14% Students with Disabilities, and 99% eligible for free or reduced lunch.

At the urban middle school, 87% of the student population passed the Reading portion of the Criterion Referenced Competency Test (Georgia Department of Education, 2014). Colburn (2009) suggested students are able to guess on selected-response assessments because this type of assessment gives students multiple options and they are able to make an educated guess, however this type of assessment does not always provide confirmation of student understanding. Although the data from selected-response assessments aid in establishing trends in learning and assess learning outcomes according to Colburn (2009), at the school researched, the reading scores had no effect on student written composition. Consequently, when students are required to take the Georgia EGWA, a constructed-response assessment, the margin of success was diminished. Thirty-five percent of the grade 8 students did not meet the standard on the Georgia EGWA, and the results were evident that students' ability to write is hindered by limited exposure to the themes in writing situations, difficulty expressing their ideas because of limited vocabulary, and failure to use the writing process.

Deficiencies in the Evidence

Teachers have discontinued teaching technical writing and began instructing students on how to formulaically respond to various writing situations. Hillocks (2002) suggested that writing assessments hinder creative instruction because the writing focus is based on constructed responses to prompt-driven essays. The assessments do not offer varied and interesting writing opportunities for students.

Another component to the state writing assessment is the time constraint placed on students. Simmons (2009) stated that teachers of the National Writing Project believed that students internalize the writing process and can write more freely when not

being timed. Students are given 100 minutes to respond to an expository writing situation that requires the student to use key words such as explain, inform, or describe to organize their ideas into coherent form or a persuasive writing situation that has the writer convince the audience of their argument by firmly stating their opinion and providing support to their position.

The Language Arts teachers routinely discussed the major problems students faced when reading a writing situation and agreed that students do not understand their role as a writer and how to appropriately respond. Students further demonstrated limited understanding of the writing process, the key terminology of the given writing topics which impaired student response. In grades six and seven, students wrote to earn a grade for the academic class in English/Language Arts. It was not until grade 8 that the student writing was measured at the standardized level to determine the level of proficiency attained by the student. However, if students fail to demonstrate the proper understanding of the writing process and how to organize a coherent essay there was no process in place to remedy this problem to prepare them for secondary education.

Audience

The targeted audience of this study was state administrators, school district superintendents, English/Language Arts teachers, and middle school students. The research findings can be applied to improve urban student writing scores. The affected audience was urban-eighth grade students that attended the researched middle school. This study revealed innovative ideas needed to assist urban-middle school students in improving their writing scores.

Definition of Terms

The following terms are used by the Georgia Department of Education to explain the Georgia Eighth Grade Writing Assessment and how to interpret student results per writing domain.

Analytic and Holistic Scoring refers to the scoring system used in evaluating more than one domain of an essay providing a holistic score for each domain.

Argumentative Writing Prompts are writing topics administered to students requiring students to present an argument and convey their opinion citing textual evidence to persuade the audience to agree.

Computer-Assisted Instruction is defined as instructional material presented by means of a computer or computer system (*Encyclopedia Britannica*, 2012).

Conventions refer to the control a writer demonstrates of proper mechanics, usage, and sentence formation of a writer.

Does Not Meet the Standard identifier is used when students scale score range 100-199 due to limited focus on the assigned topic or genre and the writing may lack an introduction or conclusion.

Ideas establish the focus on main points with examples, illustrations, facts, or details that is appropriate to the informational or argumentative genre.

Informational Writing Prompts refer to writing that requires students to explain, describe, or provide information about a particular topic.

Meet the Standard identifies students with a scale score range of 200-249 because the writing samples are generally focused on the assigned topic and genre and contain a clear introduction, body and conclusion.

Organization refers to the degree to which the writer's ideas are arranged in a clear order that is consistent with an argumentative or informational prompt.

Read 180 Next Generation Instructional Software is defined adaptive instructional technology with engaging anchor video to help build background knowledge, and from there students are accelerated to grade-level proficiency in reading, vocabulary, spelling, and writing that adjusts to meet the personalized learning needs for every student (Scholastic Incorporated, 2012).

Style refers to the degree to which the writer controls language to engage the audience.

Purpose of the Study

This research study provided insight on the impact standards-based aligned computer-assisted writing instruction had on improving writing scores for eighth-grade students that attend an urban middle school. The researcher sought to remedy the problem of low writing achievement of eighth-grade students and determine if the use and implementation of computer-assisted writing affected the aforementioned limitations of exposure to universal themes and improved writing skills and essay structure at the researcher's work setting. The study examined the effectiveness of writing across the curriculum and differentiated instruction through the integration of technology into the classroom that prepared students to be college and career ready and support learning.

Chapter 2: Literature Review

New curriculum, classroom settings, policies and assessments presented challenges to students as they transitioned into middle school (Andrews & Bishop, 2012). In this technological era, students utilize electronic devices that support learning and keeps them engaged during the learning process. Andrews et al. (2012) stated that during transition, adjusting to a new setting impairs students and some “unlearn” skills and content. Writing is a multifaceted process, involving the organization of many high-level cognitive and meta-cognitive skills (Olinghouse & Wilson, 2012). By integrating technology into the classroom while teaching the writing process, teachers were able to incorporate this instructional strategy to further engage students and maximize their learning.

The first section of this literature review focused on the effects of integrating technology into the learning environment as a way to reach students at different levels of learning. Included in the section is the integration process at the primary, middle, and secondary levels of education. The second section provided an overview of writing instruction for middle school students that apply to improving writing scores on the Georgia Eighth Grade Writing Assessment (EGWA). Included in the section is the approach to teaching the writing process and an objective review of the best practices when teaching writing. Although research is limited, the third section of this chapter provided a review of literature based on the teaching and learning urban middle school students. This section unveiled best practices in teaching urban populations and increasing student achievement.

The Integration of Technology into the Classroom

Educators affect student achievement when they effectively use instructional time and are consistent in implementing instructional strategies (Fisher & Frey, 2007).

Technology is a viable tool used to help students grow academically and increase the opportunity for student achievement. Technology is being pushed to the forefront of education as federal laws mandate the integration of technology in school (U.S. Department of Education, 2001). Hines, Pugach and Staples (2005) pointed out that the growth in technology enthralled school districts and parents who sought the opportunity to prepare their children for an education and workforce that relies on digital access and expertise. Numerous scholastic leaders and policy makers assert that computers and related internet technologies are representative of the important educational advancements with the potential for stimulating high-levels of student engagement and achievement (Howley, Hough, & Wood, 2011).

Subsequently, the shift to technology affects the traditional ways of teaching. The face-to-face and hands-on exchange between teachers and students is essential to relating to students and building relationships within the learning environment. Gorder (2008) pointed out that the integration of technology is not about availability, but the effective use of instructional technologies used in reshaping the classroom. Effective use of technology can potentially keep students engaged in learning and motivated across all content areas when used daily within lessons.

Mo (2011) stated that the use of instructional technology in the classroom shifts learning from teacher-centered instruction to student-centered instruction and the integration of technology engages students more as they use interactive computer

programming. For better engagement, Trespalacios, Chamberlin, and Gallagher (2001) suggested inviting gaming systems instructional practices as an instructional strategy that further encourages students to communicate and think collaboratively. Collaboration is an important component to integrating technology into the classroom because teacher responsibilities shift from subject matter expert to collaborator and facilitator (Gorder, 2008). Choosing to integrate or not integrate reflects in student achievement.

Howely et al. (2011) conducted a study of technology integration in rural elementary school settings and found that there is adequate technological infrastructure, but teacher attitudes affect the integration process. Access to computer-assisted instruction is limited in rural areas primarily due to the attitude towards instructional technology. Teacher avoidance of technology and consciously deciding to limit usage is the result of teachers feeling that technological applications are distracting instructional approaches (Howely et al., 2011).

According to Gorder (2008), teachers must garner understanding of how and why to use technology in meaningful ways which in turn curtails teachers learning along with students. Consequently, in rural settings students felt their teachers failed to understand technology and its place in their everyday life, which impaired frequent use of technology (Howely et al., 2011). Effective integration of technology is the product of many elements; nonetheless the greatest factor is the teachers' proficiency and ability to contour instructional technology activities to meet students' needs (Gorder, 2008).

Watson and Jan (2004) discussed the importance of modeling the writing process while utilizing digital displays to enrich instruction and encourage the students' learning. The focus of the research was centered on teacher preparedness for future middle grades

teachers in order to effectively integrate digital technology while writing. During their research, it was noted that in a web-based environment, students take more risks with their writing and feedback is received from peers and teachers throughout each stage of the writing process.

Watson et al., (2004) displayed a proactive approach to preparing educators to integrate technology by providing pre-service learning opportunities versus school-based professional learning that veteran teachers attend but minimally implement inside of their classrooms. The complexity of the writing process was unveiled as Jan surveyed the pre-service teachers and found that many wrote in a formulaic manner. Delivery of this writing course occurred in an online environment that served as a basis for observing pre-service teachers as students prior to integrating technology in their impending classrooms (Watson et al., 2004). This notion reinforces the need for teachers to understand how to use technology to avoid teachers learning along with their students (Gorder, 2008).

This study delved into the effectiveness of the writing workshop and how it supports writers in the classroom. Watson et al., (2004) discussed five mini-lessons helpful for integrating technology to meet student needs while writing in an online environment: (1) modeling the writing process and constructing samples using digital projector displays, (2) maintaining digital documents in a chronological online notebook through the use of blogs, a web-based tool accessible by students, (3) conferencing students through computer-mediated conversations such as chatrooms and discussion boards based on drafts submitted for peer and teacher feedback in web-based formats such as web course tools (WebCT) and Blackboard (4) collecting useful web-based resources for student use such as links to web pages covering each writing genre, and (5)

providing students opportunities to be published via the web that can be shared in teacher writing workshops in the future. For teachers that had minimum writing experience, this preservice course walked them through mini-lessons and conferencing to provide practice in this instructional strategy to gain familiarity on how to integrate technology successfully in the classroom (Watson et al., 2004).

Middle grades students tap into technology more than any school age group of students and utilize these technologies eagerly because their adolescent needs are fulfilled (Downes & Bishop, 2012). In this study, Downes et al. (2012) refers to middle grades students as the 21 century young adolescent and stated that student use of social media meets the need for affiliation. The Committee of Education and Labor (2009) agreed that a primary component to learning is to offer technology-rich learning environments in the future for all students. The savviness of technology keeps information at the fingertips of students and very little effort is made toward sustaining essential life skills. Students would rather use search engines such as Google to find quick answers to questions or watch YouTube videos to learn how to perform a skill (Downes et al., 2012).

Technology is in no longer considered an input or output system, but a disseminator of information that with improved technologies can increase academic achievement in a society that is competitive and help students adjust to the normalcy technological advancements (Committee of Education and Labor, 2009). Integrating technology as an instructional strategy has been misconstrued as a strategy that educators instinctively know how to implement (Downes et al., 2012).

According to Costello (2012), educators are desperate to keep with the growth of media and technology because the students in the classrooms of today are fully immersed

in technology and have been since the start of their education. In a field teaching experience, Costello (2012) described how an eighth grade, English classroom can be transformed and further engage students through the use of digital technology in an urban setting. In this study, Costello (2012) mentioned noticing the power of transformation in literacies for English language arts teaching and was prompted to experiment with multiple learning modalities as well as informal classroom drama and digital video. Students in this study experimented with dramatizing vocabulary words, and producing newscasts (Costello, 2012). The study observed students translating literature into drama form and provided students the opportunity to write, speak, and listen to information that is expressive, organized, and in some cases improvised.

Digital technology as used by Costello, brought classroom literature before the camera, and engaged students beyond traditional written book reports. The integration of technology promotes differentiation of instruction to the classroom, and reaches all learning styles that can be scaffold into written composition. Costello (2012) did not eliminate the writing component which is still a major focus of the English classroom. Students were required to employ the writing process as well as the elements of literature such as plot to create a storyboard and sequence of events from the literature and produce a character-confessional (Costello, 2012).

The integration of digital video at the research site could prove to be beneficial for the middle school students because it offers students a chance to be creative in their writing. Reading a variety of literature and reenacting the vocabulary as well as producing newscast would be highly effective in curtailing the problems with limited vocabulary and limited exposure to universal themes. Replicating Costello's study at the

research site could truly help improve students' ability to write and increase writing scores.

Cassidy (1996) described a field teaching experience with students who were learning English as a second language (ESL). The assignments in the field experience partnered peer interaction and electronic communication through electronic mail (email). This approach provided the ESL students an opportunity to practice writing as well as learn about American culture. Even though this experience took place at an American university, the need for this type of interaction is based on the changing demographic of the classroom. At the completion of the field experience it was determined that computer-assisted instruction improved the writing for the ESL students. The use of technology in this study demonstrated an effective way that closely resembles real communication.

Creating email accounts for classroom exchange would not be an appropriate strategy for middle school students, but the paired assignments and composed writing would reinforce writing skills and keep students actively practicing their writing. This approach is most helpful when teachers create an atmosphere that facilitates students learning from their peers and not solely from teacher-centered instruction.

Barriers of the Integration of Technology

According to Staples, Pugach, and Himes (2005), schools must determine how technology and curriculum will work collaboratively to support student learning. Integration is supposed to enhance student learning, therefore administrators must be certain that technology practices can be embedded effectively in the daily classroom routine. These researchers identified barriers such as: (1) teacher preparedness to handle

the increase in technology resources and technical nuisances, (2) integration of technology not being a part of teacher preparation programs, and (3) lack of funding towards technology professional development in school districts.

In addition, Aflalo (2014) added that substantial inconsistency looms over information technology and communication as it relates to the reality of technology in school. The researcher stated that training is important when attempting to transform education and implied that teachers' perceptions and beliefs affect their methods of teaching. Bauer and Kenton (2005) examined teacher perception of integrating technology and determined that confidence and skill level attribute to how teachers include technology in their instruction. It is implied that for teachers to fully integrate technology, they must want to improve their individual skill level to confidently instruct with computer assistance.

Teachers work through other obstacles such as timing, hardware concerns, student computer skill level, teacher computer skill level, and internet usage (Bauer et al., 2005). Computer-assisted instruction must fit inside of the instructional routines and classroom procedures set by individual educators. The researchers reported that in order for integration to happen with fidelity, teachers assert that time is a critical factor when attempting to efficiently include technology into the curriculum. Teachers also need enough computers that are fully operational and compatible with software applications utilized in their content area. Unfortunately, the best equipment is often found in school computer labs, and equal access to the computers is scheduled, thus hindering progress in fluid integration.

Skill level is vital to using computers during instruction, students' familiarity with computers resulted in some needing tutorials on how to use them (Bauer et al., 2005). Instructionally, students are not learning at the same pace, so the confusion of computer-assisted learning and content specific learning impedes student achievement. Similarly, teachers stated in interviews the need to learn more about computer technology in order to become the expert in the classroom. The last of major obstacles is the amount of information both relevant and useless found on the internet (Bauer et al., 2005). Preselected web sources curtail the overabundance of information, consequently limiting student access to information and gained confidence through the use of computer technology.

Benefits of the Integration of Technology

Educators need to teach the curriculum and aide students in making connections to what is being taught based on their individual interests (Mims-Word, 2012). Integrating technology into the classroom allows for curriculum content, processes, and products to be differentiated and meet the needs of individual students. The use of technology in the classroom has become expected because new teacher preparation programs have added the technology, pedagogy, and content knowledge (TPACK) framework (Roth, 2014). The research pointed out TPACK prepares teachers to instruct effectively while using technology in their content area. Roth (2014) implied that since school districts are investing in the newest technology trends so there is a need for effective training in teacher preparation programs.

Through the use of technology, teachers are able to prepare, record, and provide lectures and instruction to students outside of the classroom using the flipped classroom

method (Roth, 2014). Blended learning concepts such as the flipped classroom provide opportunities for students to accept more ownership for their learning (Lapp, Fisher, & Frey, 2014). Lapp et al. (2014) stated that by infusing technology with the traditional classroom learning students become empowered through collaborative efforts with their peers. Student needs and interests are vital to gauge student interests and when students are given the opportunity to use social media and other online platforms to complete work they become motivated by blended experiences (Lapp et al., 2014).

Students rapidly assimilate and become accustomed to new technologies outside of the classroom that does not facilitate their learning while at school (Smith & Evans, 2010). Through blended learning, media literacies and traditional instruction can merged together to help students create better learning experiences.

The Middle School Writing Assessment

Prior to 2015, all eighth-grade students in the state of Georgia were required to participate in the Georgia Eighth Grade Writing Assessment (EGWA), a separate standardized summative assessment aside from the Criterion Referenced Competency Test (CRCT). It was approached as a high-stakes standardized test and promotion requirement for all Georgia eighth-graders prior to entering high school. The state administers a writing assessment to students in grades 3rd, 5th, 8th, and 11th and at each grade level the assessment is treated as an artifact documenting student growth and writing achievement.

In 2007, the National Assessment of Educational Progress (NAEP) reported that 87% of Georgia eighth-grade students performed at or above the NAEP *Basic* level. A *Basic* level performance as defined by NAEP indicates students had limited mastery of

prior knowledge and ability that are essential for skillful effort at each grade. The basic level performance could be attributed to the statement that students disconnect with writing because they are preoccupied with what qualifies as good writing and have lost the excitement of individual expression (Radcliffe, 2012).

Olinghouse and Wilson (2013) stated that writing is a difficult process requiring the synchronization of many high-level cognitive and meta-cognitive skills. Nonetheless, students demonstrate an inability to cohesively produce an organized essay due to not understanding the characteristics of the given writing genre and properly respond to the writing prompt assigned during a timed writing session. In order to help students connect to the writing situation, educators need to be more aware of struggling writers so that there can be transformation of the writing curriculum (Gregg, Coleman, Davis, & Chalk, 2007).

Constructed-response in the middle school setting is primarily practiced in the subject area of English Language Arts and students write informatively or produce argumentative responses to literature derived from literary and informational texts. Pytash and Morgan (2013) pointed out that middle school students write daily, but specifically in areas they are most comfortable such as text messages, passing notes with friends and social media. For a struggling writer, writing in the context of social engagement is done with ease and does not require students to follow grammar rules and processes for writing. Radcliffe (2012) further stated that middle-grades writing is the transition from “childish ways” to more academic writing for test preparation.

Higgins, Miller, and Wegmann (2007) suggested that heavily weighted standardized tests influence best teaching practices in reading and writing. While the

common belief amongst educators is that learning should be student-centered and assessment should measure what a student has learned; Higgins et al. (2007) stated that standardized testing has displaced assessment for learning. In this study, research unveiled the shift towards preparing students to achieve on a test and fuse together instructional writing techniques to aide students in their learning.

In order to prepare students to write successfully and merge best teaching practices in writing, students need additional writing practice that extends beyond the classroom. Writing instruction should include teaching students how to respond appropriately to a variety of writing genres, time to produce rough drafts and make revisions, allow students to choose their writing topics, helping students find their voice when writing, and teaching each step of the writing process (Higgins et al., 2007). Restructuring writing instruction heavily depends on the engagement of students during writing workshops, understanding each step of the writing process, and the essentialness of the traits of writing. During writing workshops, students simultaneously take charge of their writing and use the writing process to produce coherent essays.

Test preparation has been altered in the middle school classroom. Higgins et al. (2007) believed that students spend more time practicing for a test and are no longer challenged in their curriculum, and that students are taught to write in a formulaic pattern. The approach to teaching a formulaic essay helps students address writing prompts in a conventional way that is aligned with expectations of the state assessment. The aim for writing in middle school is to help students become better writers.

Teaching Students Useful Writing Strategies

According to Mason and Benedek-Wood (2010), students' academic achievement depends on their ability to write. In a society that is rich information, the ability to effectively communicate in writing is just as important as orally communicating. Applying to college often require students to write a personal essay and even applying to graduate schools in some cases require a written exam for admission. Until students fully grasp the writing process, they will continue to struggle with organizing ideas into cohesive written composition (Mason et al., 2010). Teachers must work with students and aide them in making connections to the writing situations in order to have more acceptable responses.

For low-achieving students, the design of Self-Regulated Strategy Development (SRSD) guides students towards effectively expressing their thoughts and initiating a reading-writing connection (Mason et al., 2010). Harris, Graham, and Mason (2003) noted that these same students faced several obstacles in their learning due to having unrealistic pre-task expectancies and low self-efficacy which contributes to their inability to write. Simply knowing the writing process is not enough for students in order to complete written tasks or assessments. Feeling knowledgeable of the writing process and successfully generating ideas is important to the overall coherency of student writing.

Direct teaching has long held the reputation for being the best instructional practice and for students that struggle in academic content it is deemed the most beneficial. Teachers must navigate through students' strengths and not target their weaknesses. Harris et al. (2003) stated that learning to read and write is understood to happen naturally through immersion and authentic learning experiences. Integrating

SRSD with the writing process offers a practical, operative, and more competent means for addressing increased demands for writing performance in middle grades (Harris et al., 2003).

The English/Language Arts performance standards guide students' writing instruction, and the instructional target is to have students produce a coherent essay. The six stage SRSD approach helps students develop statements pertinent to writing tailored to their individual needs (Harris et al., 2003). This approach is a collaborative process between teacher and student that ultimately progresses students toward successful independent performance. Self-motivation and self-monitoring are deeply embedded throughout the SRSD approach and building a student's confidence in writing is important as students grow more comfortable when completing writing tasks.

Incorporating writing on a daily basis is needed as students work to improve their understanding of the mechanics and conventions of Standard American English. Using quick writing as an intervention guides student thinking as they reflect on prior knowledge, recalling specific information, summarizing content, and expressing original thoughts and opinions (Mason et al., 2010). When students engage in quick writing, they scaffold their learning and are able to focus on the given topic for a shorter period of time unlike with formal essays that are more time consuming (Mason et al., 2010).

Narrative, informative, and argumentative compositions are routine writing genres embedded inside of middle school curriculum. Upon entering the sixth grade, students reading and writing instruction requires students to compose short response and extended responses to literature. Citing textual evidence is difficult for middle school students

because they struggle to write beyond retelling the events of the text through summarization rather than the literary element that is questioned.

Teachers must help students establish the purpose for writing just as students must understand the purpose and employ strategies to meet the requirements for the writing genre. Through Close Reading, students read rigorous text and rely on their comprehension skills to extract information and employ reading strategies required for scholarly reading and writing (Valbuena, 2014). Making the connection between text and writing is a necessity for middle grades writing. Through the Close Reading of texts, students are able to explain content in their own words because they actively reread text to obtain knowledge, develop fluency, and reinforce their use text evidence (Valbuena, 2014). Close Reading helps students move pass answering text-dependent questions and towards producing informative and persuasive writing. Valbuena (2014) stated that reading and writing to learn are the ultimate goals of Close Reading.

SRSD and Close Reading, when integrated throughout reading and writing curriculum, provide students with guide practice. Text complexity and comprehension of text enriches student learning and ability to produce appropriate written responses to literature. Narrative writing is routinely done as a reflective measure that allows students to freely analyze their learning and be comfortable in developing their composition skills. However, middle grades writing assessments require students to read and write for information.

SRSD for persuasive writing enables students to focus their writing through the POW (pick ideas, organize notes, write and say more) strategy and the TREE (topic sentence, reasons, examine ending) strategy (Mason et al., 2010). The purpose through

guided practice, independent practice, and finally assessment of persuasive writing is for students to produce arguments that will convince the reader of their opinions. Close Reading helps students synthesize texts and produce informative essays that answer writing prompts (Valbuena, 2014). Direct teaching of the writing process coupled with exposure to complex literature pushes students beyond basic retelling and summarization. Analyzing text and using the writing process enables students produce enriched writing and increased opportunity to success.

Writing Across the Curriculum

Dana, Hancock, and Phillips (2011) stated that writing across the curriculum is a long-standing educational effort that strives to develop critical thinking, analytical, and writing abilities by integrating writing in all content. It would be ideal in all classroom settings and content to embed more content specific writing, however teacher buy-in into this instructional strategy is difficult. This study examined writing in university courses, but middle school English Language Arts teachers also believe when students write across the curriculum, the content material is learned better, and with clearer understanding this improves student written communication (Dana et al., 2011). Students struggle with the rules of writing and at each grade level the complexity of the rules challenges student abilities to write without error and produce coherent and grammatically correct constructed responses.

In the English Language Arts curriculum, time and attention to writing instruction are not the main factors, more concentrated efforts are being centered on what students are being taught when preparing to write (Applebee & Langer, 2009). Writing across the curriculum is a continuum in education but so is differentiation of instruction. When

educators differentiate it is time consuming because within each classroom the focus for differentiation may be the process, content, or product when planning for instruction.

Teachers must consider the process for which writing instruction will be carried out and that is either by the traditional use of paper and pencil or by the use of technology.

Applebee et al. (2009) stated that the spread of technology has had a positive influence on strengthening writing abilities for struggling students. However, middle grades education determined the use of technology while writing does not have significant bearing on students because their assessments are not given from a computer-based platform (Applebee et al., 2009). At secondary levels even with the present technology, its use is impeded when writing because computer assisted writing does not meet state assessments requirements, but is recognized as a tool needed to improve student ability to achieve beyond secondary education (Applebee et al., 2009). The study provided insight on the shift in writing and acknowledged process-oriented instruction that is essentially the same for all students when completing writing tasks. Whether students are starting via paper and pencil and transferring their writing to a word processor, they are being taught to first brainstorm, then write multiple drafts to correct spelling and grammar and finally produce a final draft (Applebee et al., 2009).

Morgan, Benko, Hauptman, Gayle, and Fink (2014) suggested students write list articles to engage students in writing. They mentioned that list article writing is purposeful writing that is active and involves decision making students must employ to support their purpose when writing. Through the use of graphic organizers, examination of different texts, practicing writing in different text structures to establish their voice,

and researching their interests; list articles support development of student writing skills and their ability to research (Morgan et al., 2014).

Jago and Fink (2014) pointed out that middle school students are as doubtful about their writing as adults. Teachers expose students to a variety of writing prompts all with the premise to help students establish their individual voice while writing. Practicing essay structure whether in isolated parts such as introductions, body paragraphs, or transitioning between ideas, and feedback is essential to helping students learn how to write well (Jago et al., 2014). In this study, it was concluded that writing and literacy is a shared responsibility across the curriculum, and not the sole responsibility of the English Language Arts teacher.

Teaching and Learning in Urban Schools

The National Assessment of Education Progress (NAEP) reported in 2007 that black students score on average 19 points lower in writing as compared to white students. Student performance is indicative of how teachers effectively use instructional time and consistency in implementing instructional strategies (Fisher & Frey, 2007). Data-driven instructional practices are often the baseline for instruction at the start of a new academic year based on state standardized test results. At the start of a new academic year, teachers evaluate student growth and set learning goals for the year (Archer, 2011). This instructional strategy is important to middle school students because of the challenges in new curriculum and adjusting to new routines and high expectations set for student performance.

According to Smith (2006), the shift from one learning environment to a new one is linked to educational challenges and achievement loss. The researcher suggested that

student attitudes and collaborative efforts from parents and peers have a lasting impact on academic success. It is implied that high-achievers adjust well with proper support from middle school to high school as well as post-secondary educational transitions. At the same time for urban African-American middle school students, family dysfunction and neighborhood surroundings have an effect on student motivation for learning (Whitaker, Graham, Severtson, Furr-Holden, & Latimer, 2012). Curwin (2010) also pointed out that media such as television, advertisements, the internet, music, and store franchisement have greatly impacted children.

Curwin (2010) noted that teachers in urban environments face greater challenges due to what the students in these environments are exposed to. This study contended that urban students venture to school each day arouses different emotions that alter their readiness to learn. Suburban students are surrounded by appealing structures while urban students in the city see the highs of success in city life, as well as the lows such as homelessness, dilapidated buildings, and people who are detached from their environment. Curwin (2010) added that urban schools are plagued by eight societal norms: racism, multiple languages, substance and alcohol abuse, criminal gang activity, violence, lack of family structure, the school-to-prison pipeline, and high drop-out rates. To reverse the psyche of these urban norms, students need to feel motivated to learn rather than celebrating failure. However, according to Orfield, Losen, Wald, and Swanson (2004) almost without notice, high numbers of students fade from the educational pipeline before completing high school.

Providing Academic Support for Urban Students

Inside of the theoretically troublesome inner-city African-American communities, students' family unit has a significant impact on academic achievement. Students are mostly influenced by their parents in contrast to limited support given from peers (Newman, Myers, Newman, Lohman, & Smith, 2000). Newman et al. (2000) research stressed the need for family, peers, schools and neighborhood on academic achievement for African-American students and suggested that high achievers come from supportive homes, while on the other hand low achievers have a looming shadow of defeat within the home. Despite the background of students, teachers must believe in them and foster caring relationships that evoke change (Curwin, 2010). School-based interventions such as the Young Scholars Program targets low-income, urban minority youth upon entering sixth grade that show academic potential (Newman et al., 2000). Low-income students are the focus of this program, but the research highlighted that students are less influenced by their socioeconomic status and more susceptible to their parental values and encouragement.

Quality education is an expectation for school districts throughout the nation, however teacher sorting has sparked interest because of the effect it has on urban schools. Lankford, Loeb, and Wyckoff (2002) researched teacher distribution in New York and uncovered vast differences in the qualifications of teachers in schools, particularly in urban communities. Less skilled teachers were found in low-income, low-achieving minority schools and is linked to the disparities of teaching and learning in the urban setting (Lankford, 2002). Lankford (2002) also suggested that schools may have a preference in the type of teacher they would like for their schools, but the pool of

candidates result in schools having teachers with parallel racial and cultural backgrounds similar to the student population. Parents voice their concerns about the quality of teachers employed within school districts subsequently forcing lower quality teachers into more at-risk schools with larger minority populations (Lankford, 2002).

Improving Academic Achievement for Urban Students

Ceci and Papierno (2005) described educational funding as investments designed to target poorly performing students who are considered at-risk through interventions. The research stated that the United States government intervenes to inhibit further educational gaps between advantaged and disadvantaged students while simultaneously creating targeted intervention programs (Ceci et al., 2005). Maximizing student potential and improving student performance is the intent when interventions are implemented. However when the interventions were implemented, both groups of students had access to the interventions and created greater disparities between the two groups (Ceci et al., 2005).

Ceci et al. (2005) implied that interventions that have been made universal elevate advanced learners and that is not a benefit to disadvantaged students. Student's ability and performance determines what interventions will be most useful when working to improve academic achievement. Flynt and Cooter (2005) noted that teachers in urban schools face detriments such as scarce instructional materials and inadequate professional development opportunities. Middle level education requires students to perform beyond elementary education so teachers need adequate development in helping students maintain and acquire literacy skills that will link new knowledge with existing schemata (Flynt et al., 2005). In order for students to be academically successful teachers, must

employ innovative teaching and instructional practices, strategies, and curriculum frameworks.

Research in one urban setting that has been found to be successful should be replicated across urban sectors that face the same achievement disparities. Frameworks are not new ideas in teaching because they provide the basis for content instruction across the curriculum. Flynt et al. (2005) research introduced the Memphis Comprehension Framework which is a three-step process that offers support in building student literacy. In general discussion, reading is often referred to as the tool that guides all instruction because students must be able to comprehend content in order to perform. In earlier research conducted by Cooter (2004), when the Memphis Comprehension Framework was paired with a reading academy for teachers and then paired again with a writing program, schools saw an increase in student achievement and were removed from the state's low-performing list (Flynt et al., 2005).

Professional development, strategies such as read-aloud to practice fluency paired with discussion, and three-level retelling is the three steps to the Memphis Comprehension Framework (Flynt et al., 2005). Professional development entails teachers selecting proper comprehension skills to focus on with fidelity. Flynt et al. (2005) suggested that by focusing on a skill for a couple of weeks at a time, students are able to learn the skill and apply what they have learned successfully. The research further stated that a common need in urban students is oral language development. Finding a balance between literary genres, specifically informational text, students build content knowledge and awareness of text structure (Flynt al., 2005). Reading aloud helps students build fluency and give s students the opportunity to actively discuss what has

been read. During the discussion, students' ideas are organized and become the responses needed for students as they move into step three. The three level retelling of the text as explained by Flynt et al. (2005) requires students to first orally and fluently retell the text selection through guided practice, secondly students use graphic organizers to create a logical pattern for retelling a story through written words that helps students retain vocabulary and concept knowledge, and thirdly students use their graphic organizers to construct summaries of the text. Literacy instruction is problematic in upper elementary urban schools, however middle grades teachers can combat this issue by using the Memphis Comprehension Framework (Flynt et al., 2005).

Enrichment for Urban Students

Barone, Sinatra, Eschenauer and Brasco (2014) conducted a study that enriched low-socioeconomic students in writing during the summer vacation from school. The study sought to improve retention of academic content during the summer months and decrease academic loss. Barone et al. (2014) stated that during the school year students are engaged collectively because of equal access to public education, however during the summer that access is limited. The research further stated that disadvantaged students benefit from summer programs that are rich in a wide range of academic information. A student's perception of their abilities and background experiences while developing shape their idea of how learning takes place. Barone's et al. (2014) research conveyed that in the presence of a supportive climate, literacy tasks throughout the summer offset academic loss.

The Upward Bound program targets low-income students that are the first in their families to attend post-secondary institutions (Marsh-McDonald & Schroeder, 2012).

Moorman (2008) shared an experience of working with high school students through a literacy class that read below their grade level. The writer took on the challenge to teach comprehension strategies needed to make students more confident and skillful readers. Throughout the summer, students read books that involved real situations that related to their lives. Throughout the narrative, the researcher was able to reach students at their level of interest and help them build their reading stamina over the course of the summer.

According to Kaul, Johnsen, Witte and Saxon (2015), effective program models are necessary for disadvantaged youth. Kaul et al. (2015) described the University for Young People's Project Promise as a successful enrichment program for disadvantaged gifted students in grades fourth to twelfth. The research further stated that programming of this nature offers a greater chance for a talented child's potential to be identified. The goal of Project Promise is to advance students' desires and preparedness for higher education (Kaul et al., 2015).

Student interests, support to parents and families, and development of personal relationships with mentors and peers are components of Project Promise (Kaul et al., 2015). Even though this program is geared toward talented students, these components are beneficial to all low-socioeconomic students because they also need this same type of exposure. Student interests are vital to individual achievement because courses are tailored to their strengths and career goals (Kaul et al., 2015). Parents and families are taught the value of the program through demonstration of the program activities and gain a deeper understanding of why the students in the program need consistent encouragement. Small groups enable mentors to structure positive interactions between

peers and their training helps foster the characteristics of gifted students and ways to connect with the students (Kaul et al., 2015).

Kaul et al. (2015) stated that Project Promise courses had long-lasting effects with regard to learning and careers for participants. The effects of Project Promise further supports why families are needed to encourage academic endeavors of students from urban communities both talented and at-risk. Kaul et al. (2015) concludes that it is imperative that low-income students be provided chances to develop their gifts and broaden their academic and occupational paths.

Technology Barriers in Urban Schools

Staples et al. (2005) stated that schools face the task of determining how technology and curriculum would support student learning. Partnerships between schools, students, and community stakeholders are vital to the success of students when implementing new initiatives. In the study of three urban elementary schools that were transitioning to become kindergarten through eighth-grade (K-8), Staples et al. (2005) began to examine the integration of technology. The research discussed that schools with high numbers of students receiving free lunch also had 75% of internet access throughout the school that is used primarily to reinforce basic skills.

In Staples' et al. (2005) study, the participating schools had minimal technology integration and had partnered with local universities to improve technology usage that had been funded through a three-year United States Department of Education grant. Proceeding with the study, Staples et al. (2005) noted that the schools in the study were not wired beyond a single internet access point. Also prior to the grant, classrooms were not equipped with enough technology designed for student use to facilitate learning.

Another limitation of these urban schools was the teachers' inconsistency in believing in technology integration while not using technology efficiently. Beyond rudimentary usage, the schools did not have instructional technology personnel that would teach teachers how to connect and integrate technology with the curriculum and instructional practices (Staples et al., 2005).

In each setting, technology integration was limited by the local hardware networking capacity which were decisions made by principal, and communication between school and district personnel was impeded by the lack effective electronic communication (Staples et al., 2005). The three schools in the study mirror most urban schools that have the same infrastructure and out of date problems discussed in this study. Older model computers that cannot support newer technologies are problematic as well as no direct support are given to schools that are behind the technology surge. Schools are not receiving the proper support and are put on a list to determine the priority for upgrading the technology in each building.

Instruction technology requires that operating systems and software programs be compatible. The decisions behind which operating systems to use are not clearly defined because in one school, as noted by Staples (2005), the principal used the updated version Macintosh and the administrative team used Windows-based computers. In instances where mixed technologies occur, school districts must decide the roles of the district technology managers and the responsibilities of the school technology specialists. The school technology specialist is then responsible for providing teachers with professional development opportunities in order to successfully integrate technology into their instruction.

Instead of being used as a tool for students to practice basic skills, technology use needs to be relevant. Administrators and teachers must agree on the needs of the students and eliminate programs that do not require students to use higher order thinking skills. In school two of the study, the technology was up to date, but the programs were not aligned to the curriculum. Teacher input is important, and administrators must consider the interests of the teacher when deciding to integrate more technology in their instruction. Staples (2005) pointed out how when curriculum focused technology became the focus, the technology shifted to being differentiated for whole group, paired, and independent student use. The technology grant funded technology coordinator, school-based technology specialist, and principal work collaboratively to help technology become a tool for collaborative learning.

Technology is more than an add-on activity (Staples, 2005). Teachers must be aware of the technology they have inside of their building in order to use it effectively. The integration of technology requires expert knowledge concerning hardware and software. Communicating what technology can do and teaching teachers how to integrate are two separate ideas. In the case of school three, urban schools often make the choice to acquire technology but the connection between the purchased media and curriculum are not valid which leads to incomplete support from administration and staff (Staples, 2005).

Overcoming barriers in urban settings is based on having the proper infrastructure and equipment to fully integrate technology in a learning environment. Technology grants are useful in acquiring up to date equipment, but schools must decide on a definite operating systems that will support curriculum goals. Professional development is a

necessity so that teachers can push students beyond skill and drill, and into more practical uses that support their individual learning. Staples' (2005) research documented the mistakes school districts make when integrating technology than can be avoided as newer technologies emerge.

Summary

Transitioning into more rigorous curriculum contributed to the limited achievement of disadvantaged students in middle school. The change of pace in curriculum and additional performance requirements required students to employ higher levels of thinking when completing assigned task. The primary focus for this literature review was to unveil how student engagement is a critical component to academic achievement and through the integration of technology teachers are able to gage student interest and boost their learning. In the digital age, students need technological access to prepare them for the real world (Staples et al., 2005).

As the exchange of information between teachers and students through the effective use of technology becomes more interactive, students take on more responsibility for their learning and the approach is less teacher-centered (Mo, 2011). The limitation of full integration is due to teacher preparedness to utilize technology in the classroom. The necessity for professional development on the integration of technology for teachers is vital to teachers embedding the use of technology beyond skill and drill within a learning environment.

Social media is the most common interface for middle school students and it is important for teachers to be abreast of the chosen means of communication for their students (Downes et al., 2012). There are disparities about the efficiency of teachers

when implementing technology, but students become empowered in their learning through the use of technology. The barriers and benefits of instructional technology interface when schools learn that successful integration means knowing how technology is supposed to support student learning versus how technology had been used (Staples et al., 2005). It is important for instructional technology to be aligned to curriculum standards because students are assessed on what they have learned throughout the academic year.

Students spend countless hours on social media so the writing mechanics used in their informal language impedes their abilities to write formally when they need to. Consequently, writing instruction has been integrated with reading so neither subject is taught in isolation. Writing assessments placed a lot of emphasis on the follow-through of the stages of the writing process with the final draft being the most crucial component of the scoring process. However, students often displayed difficulty in finding their voice and that stemmed from limited exposure to various themes students have been required to write about. The second focus for the literature review focused on middle school students' expectation to become better writers while facing the pressure of writing assessments. Limited confidence and student doubtfulness affects all aspects of academic achievement.

Low-achieving students struggle in many areas of their learning and that is coupled with the inability to think critically and express their thoughts. Making the connection between reading and writing is another obstacle for students which in turn contributes to students being unprepared to meet the demands of writing in middle school (Harris et al., 2003). Students may be more comfortable writing narrative pieces but find

difficulty with the more time consuming tasks such as formal essays. In difficulty, it is vital for teachers to help students establish the purpose for reading and writing, thus making the learning process more valuable.

In communities and families that may undervalue the importance of education, supporting students with interventions geared toward success will help improve achievement. Relevant instructional technology, direct teaching of the writing process, and opportunities to practice writing in multiple genres helps students build confidence in their writing. Including all content areas and writing across the curriculum builds students' content knowledge and becomes a shared responsibility among teachers.

Last, student demographics influenced this applied research based on the trend data documented by NAEP, State Assessments, and the school district on low-achieving students. Whitaker et al. (2012) pointed out that surroundings have a major role in what motivates urban African-American students. Curwin (2010) that suggested the challenges are greater in urban schools. Teaching and learning in urban communities involves multiple challenges, and teachers are encouraged to continuously motivate students in an effort to decreasing the dropout rate.

Urban grade students need additional academic support that encourages learning to curtail the acceptance of failure. The family and community structure has the power to teach the value of education versus dwelling on the low-socioeconomic status attached to urban communities. Quality teachers are needed throughout school districts so that an equal distribution of highly qualified teaching and learning occurs.

Innovative teaching and programs are needed to assist urban learners that tend to lose academic content when they are not actively in school and are on various academic

breaks. The literature suggested the need for structured enrichment programs tailored toward student weaknesses in an effort to build student confidence, better retention, and progressive student achievement. Furthermore, for urban schools, teachers, and learners, enrichment is needed to push high-achievers towards post-secondary success.

The review showed a need for better use of technology in urban schools that is accessible, operational, and effective. Staples (2005) highlighted the inefficiencies with technology inside of urban schools and the computer programs used for instruction not being aligned with curriculum requirements. It is concluded, that with proper technology, concrete instructional practices, and encouragement, urban students are able to achieve success.

Research Questions

The research answered the following qualitative research question:

1. What is the impact of computer-assisted instruction and use of technology on improving eighth-grade students' writing in an urban middle school?
2. What are eighth-grade students' perceptions and experiences with computer-assisted writing? What is the pedagogical significance of computer assisted learning from students' perspective?
3. What are eighth-grade teachers' perceptions and experiences with computer-assisted writing? What are the challenges and benefits?

Chapter 3: Methodology

Trend data prompted the investigation due to the significant drop in writing scores in 2013 to 58% of eighth-grade students at the research site passing the EGWA. This qualitative research study used a case study approach to address students' continued minimal achievement on the Georgia Eighth-Grade Writing Assessment. Utilizing the case study approach, the researcher analyzed participants' responses to the student questionnaire that provided insight on their experiences with computer-assisted instruction (Creswell, 2011). In the middle school setting, students do not create their daily schedule and are routinely assigned to a homeroom teacher and as a class rotate from subject to subject as a group for the duration of the school term. All formative diagnostic assessments are grouped by the assigned teacher and are often how educational researchers examine the effectiveness of an educational intervention or instructional approach. The classes participate in a district pre-writing assessment designed as a tool to guide classroom writing instruction and introduce students to writing topics that are aligned to literary and informational text. Students are taught the same English/Language Arts curriculum standards, however, the homogenous sample group of 10 students indicated how students apply their writing instruction and improve their writing abilities.

The purpose of this study was to determine the impact CAI had on improving writing scores for eighth-grade students who live and attend school in an urban community. Creswell (2011) pointed out characteristics of qualitative data that include the natural setting of the researcher and participants, the use of multiple sources of data, and the holistic account of the research problem. Conducting the study in the natural

setting of a middle school provided insight on how computer-assisted instruction was combined with traditional classroom instructional approaches as eighth-grade students prepare for the Georgia Eighth-Grade Writing Assessment (EGWA). The study took place in the researcher's work setting where there was archived data documenting students' usage with CAI and where viable responses to an open-ended survey was collected. The researcher chose a qualitative approach because of the interest in gathering data on students that had used CAI during independent CAI assignments and analyzing the questionnaires on how technology was efficiently integrated across the curriculum.

Participants

Controlled access to the Read 180 Next Generation classroom was a causative factor for the selection of a sample population for this research. A sample group of 10, second year Read 180 participants were gathered and informed on the background and purpose for the research study as well as the open-ended survey (Appendix A) that provided their perspective on computer-assisted learning. The ages ranged from 13 years to 15 years in age. Individual student surveys provided insight on their views of using technology in their studies and how continued experiences enhanced their learning. More specifically, the student surveys provided examples of their writing abilities as they organized their thoughts on how computer-assisted instruction improved their writing. The student participants completed an open-ended survey that inquired about their writing in their classes, confidence in their writing skills, the use of technology in their academic classes, how they felt about using computers in class, and if they believed computer use while writing made them better writers. Student responses were compared

to the student growth data reports extracted from Read 180 that demonstrated how students progressed towards the mastery of writing skills in the writing instructional zone. The students' individual progress reports indicated the skills students needed additional support in prior to the annual state assessments.

As noted, 91% of the school's population was from low-socioeconomic, African-American communities. Students displayed limited understanding of the writing process which contributed to the impaired student response to writing situations. Student data indicated better achievement on selected-response assessments as test results reflected 86% passing Reading and 82% passing ELA on the CRCT.

The average enrollment for Grade 8 was about 158 students according to school registers for the 2013, 2014, and 2015 school years. Students' coursework exposed them to various literary and informational texts required them to demonstrate comprehension through written response. Text complexity had a major part in the selections of literature students read in class. Through exposure of a variety of text in the classroom, visiting the computer lab similar themes appeared throughout the computer-based lessons. The demographics of the middle school and low-achievement on standardized tests in writing indicated that students needed a better understanding of the writing process and how it transfers to all areas of curriculum. Integrated technology and performance tasks involved structured writing across the curriculum to improve student achievement in all content areas other than English/Language Arts.

Instruments

Read 180 Next Generation is an online reading intervention program designed to meet the needs of students who are performing below grade level. Students are instructed

in reading skills and strategies designed to improve student vocabulary acquisition, grammar, as well as writing. The blended instructional model of Read 180 is a day-to-day plan embedded with instructional strategies such as teacher-directed whole and small-group instruction. However, the instructional technology component required each student to complete the Scholastic Reading Inventory (SRI) which created the personalized learning path for each student reliant upon baseline Lexile scores generated by the program. Students then engaged in age-appropriate independent readings to audiobooks and electronic reads (eReads) to strengthen fluency and reading comprehension.

The instructional software had a significant role in the effectiveness of Read 180 because it allowed students to be interactive partners in their learning and become more accountable for their individual progress. Students completed daily lessons in the Read 180 blended program in rotational increments of 20 minutes. Direct whole-group reading instruction introduced the lesson for the day from the interactive student text that covered engaging content across middle school curriculum. The SRI determined how students would transition into small-group rotations that included teacher-directed targeted small-group instruction, independent reading using paperbacks, eReads, as well as audiobooks, and the individualized computer-assisted instruction learning path.

Students navigated through the instructional software which isolates student learning needs identified as instructional zones:

Reading Zone: Adapted reading passages adjusted to the reading pattern of each student aligned with questions to monitor their comprehension. The scaffolded reading instruction in this zone includes a short engaging video, student option to record and

listen to their reading fluency, and a progress report tracking the skills that need additional practice and the skills students have mastered.

Word Zone: The rate at which students recognize words when reading while simultaneously identifying problematic terms that need further study. Students receive decoding tips for problematic terms and listen to voice comparisons of their recorded pronunciation with model pronunciation of these terms. Students practice at increased intervals to improve automaticity of each word and monitor the mastery of each word per word zone session.

Spelling Zone: Vocabulary is extracted from reading passages for spelling practice which in turn generates a list of incorrectly spelled words for additional studying. Spelling practice challenges students to build fluency while acquiring new vocabulary and creating a list of mastered spelling words.

Success Zone: Comprehension is the focus of this zone because it puts into practice the activities sequentially starting with reading, then words, and spelling. Various summaries of a reading passage are presented requiring students to successfully choose the most accurate summary, use a word bank to insert vocabulary that correctly completes the sentences in a passage, students then record their completed passage that is reviewed by the teacher.

Writing Zone: Students construct an extended writing piece stating their position on a topic supported by text evidence. Students adhere to the writing process while using sentence frames that guides their ideas, organization, style, and conventions. A rubric is used to guide students in their writing allowing them to self-check their work. Students record their drafts in this zone, further checking their conventions and structure.

Procedures

The main purpose of the open-ended survey for the teachers was to have teachers reflect on their lesson planning for integrating technology into their curriculum. Writing across the curriculum is needed to improve student content and background knowledge as well as writing skills. The subject school encourages teachers to incorporate various instructional strategies inside of the classroom, and the survey is based on teacher lesson preparation, integration of technology practices, and their beliefs about student use of technology as a support platform for learning. Teachers incorporate technology based on the learning targets expected for their students. The researcher queried sixth, seventh and eighth-grade English/Language Arts teachers on how they integrate technology into their lesson plans.

Computer-assisted learning is an ongoing school initiative to better integrate technology into curriculum and engage students in learning through the use of their daily technological interests. Personalizing education by replacing traditional instructional practices adds differentiation to the learning environment and aids student learning. The computer-assisted writing component of the Read 180 program further compliments the current middle grades writing curriculum. The computer-assisted instructional progress report data was pulled from the Scholastic Achievement Manager for students that participated in the Read 180 program during 2014-2015 academic year. Students' Read 180 Scholastic Reading Inventory (SRI) Lexile Scores in the Scholastic Achievement Manager (SAM) for the 2014-2015 academic year as well as the number of segments completed in the instructional technology were compared to the End-of-Grade English/Language Arts scores for the 2014-2015 academic year as recorded in the

Statewide Longitudinal Data System (SLDS) inside of Infinite Campus to determine the impact Read 180 has on improving student performance in the area writing.

The SRI assessment and student progress in the computer-based program was used to further determine the effectiveness computer-assisted writing has on improving student writing. The SRI administered at the beginning of the program served as the baseline data for measuring individual growth for each student. Student progress in the instructional zones of reading, words, spelling, success, and writing was used to compare responses provided by students on their perception and experience with computer-assisted writing and significance of computer-assisted learning from the students' perspective.

Students visited the Read 180 class that was fully equipped with Dell desktops and internet accessibility. The computer-assisted instructional program is web-based which required students to have a unique student user name and password that was monitored by the teacher. Students' login sessions were monitored to include the number of sessions completed, the amount of time spent on a task, and the mastery of instructional zone skills. The Read 180 students schedule is determined by the school's instructional lead administrator who targeted students for remediation, re-teaching, and acceleration in the areas of reading, writing, and grammar. Eighth-grade students enrolled in the program for a second academic year continued to use the desktop computers as a systematic part of their reading and writing instruction over the course of the Read 180 student work text.

Data Analysis

The nature of this study was to determine how computer-assisted instruction motivated students and teachers to interface with technology for shared learning experiences. The data for this study is presented in chapter 4. Archived assessment data was used to address the research question: What is the impact of computer-assisted instruction and use of technology on improving eighth-grade students' writing in an urban middle school? The researcher employed a qualitative approach to gather data from the open-ended surveys that were developed by the researcher. The responses were used to address research question 2 (What are eighth-grade students' perceptions and experiences with computer-assisted writing? What is the pedagogical significance of computer assisted learning from students' perspective?) and research question 3 (What are eighth-grade teachers' perceptions and experiences with computer-assisted writing? What are the challenges and benefits?).

The researcher met with the study participants and explained the purpose of the survey. Students were identified based on their enrollment in the Read 180 program. Students had consistent experience through this one class with computer-assisted writing instruction as well as differentiation based on their Scholastic Reading Inventories which determined their learning path in the instructional software. English/Language Arts teachers that shared the same concern about students' writing were invited to participate in the survey. The open-ended surveys purpose was to find out whether students and teachers had consistent thoughts about writing and technology and provide additional insight on the integration of technology in the classroom. The responses to the following five questions are expanded in the results reported in chapter 4.

Open-Ended Questionnaire for Students:

1. How do your teachers incorporate writing in their content area?
2. How well do you express your thoughts on writing assignments in your academic classes?
3. Do your teachers use computers in their classes? Explain the challenges and benefits of using technology during school.
4. How do you feel when you are allowed to use computers in your academic classes?
5. Do you think students that actively write in all academic courses using computer-assisted instruction can become better writers?

Open-Ended Questionnaire for Teachers:

1. How do you incorporate writing in your content area?
2. How well do your students express their thoughts on writing assignments in your class?
3. Do you integrate technology into your curriculum? If so, what are the challenges and benefits of using technology?
4. How do your students respond to using technology in your class?
5. What do you think about students writing across the curriculum using computer-assisted instruction? Do you believe they will become better writers?

Adequate time was given to survey participants to return parental consent and students' assent to the study, as well as the teacher participants' consent. The English/Language Arts academic coach facilitated the student questionnaire, and the teacher responses were placed in the researcher's school mailbox.

The student and teacher participants' surveys revealed similar themes in the areas of student expression in academic content writing, benefits and challenges of student engagement using computer-assisted instruction, and beliefs on students becoming better writers due to using instructional technology. The study examined if computer-assisted

writing impacted writing scores for urban eighth-grade students. Read 180 was the computer-assisted instruction intervention utilized at the research site to remediate, accelerate, and differentiate student instruction.

Limitations

The limitations for this research study included that the sample of students in the study was restricted to those eighth-grade students who participated in the Read 180 program for two consecutive years. Another limitation of this study was students' prior knowledge of the writing process and experiences with successfully using computer-based learning programs implemented at the school level. The EGWA is controlled by the Georgia Department of Education so no student receives preferential writing situations; students' scores indicate the impact of technology.

Some limitations are to be expected that may have some effect on the validity for this study:

1. The Georgia Language Arts curriculum standards were revised and sample unit frameworks were created as a recommendation for curriculum instruction aligned with the adoption of Common Core Georgia Performance Standards (CCGPS) in the fall of 2012.
2. The extent of use of the computer-assisted writing program and its impact of improving student writing skills in various text formats such as informational and persuasive.
3. Impending changes in district instructional technology support programs that are deemed more aligned with national, state and local assessments.

4. The changes in curriculum which introduces more complex texts will challenge students that have demonstrated difficulty in reading comprehension and their ability to formulate coherent writing.

Summary

The Read 180 Next Generation program has been modified from the prototype to address the needs of students who struggle with reading and writing. Academic achievement for urban middle school students is barely noticeable due to minimal increments of student improvement. The student improvements are not significant enough to determine whether or not computer-assisted instruction benefits students who are not performing on grade level. The purpose of this study was to investigate the impact computer-assisted writing instruction in the Read 180 Next Generation program had on improving writing for urban eighth-grade students. This study uncovered the perceptions of students and teachers on the use of instructional technology.

Chapter 4: Results

A qualitative research method was used in this case study to determine the impact of computer-assisted instruction on improving writing scores for urban eighth-grade students. The researcher identified 12 eighth-grade students that participated in the Read 180 Next Generation computer-based reading program in the research setting. Only 10 of the 12 students invited to be participants in this case study responded. The 10 participants completed the open-ended student questionnaire in which they provided insight on their perceptions and experiences with using instructional technology in their academic courses. The student participants' questionnaire responses aided in answering the following research question in the study: What are eighth-grade students' perceptions and experiences with computer-assisted writing? What is the pedagogical significance of computer assisted learning from students' perspective?

Preparation for standardized state assessments is set to a pacing guide determined by the state for each subject area, and in the English/Language Arts content, teachers are responsible for simultaneously teaching reading strategies and writing skills. As previously stated, there has been lower achievement in the area of writing for students due to limited background knowledge and limited exposure to universal themes that are often presented on writing assessments. Certified English/Language Arts teachers at the research site were invited to participate in this case study. There were five teachers that participated in the open-ended teacher questionnaire providing insight on how technology is integrated into instructional practices. These teachers have all experienced teaching the eighth-grade, and are abreast of the promotion and testing requirements for this grade level. The teacher participants' questionnaire responses addressed the following research

question in the study: What are eighth-grade teachers' perceptions and experiences with computer-assisted writing? What are the challenges and benefits?

Conducting the Study

The researcher focused on writing assessment data as the principal addressed standardized scores for the English/Language Arts content area, specifically writing assessment data for the 2013-2014 school year. The researcher met with the English/Language Arts Department and the academic coach over the instructional technology used for student writing. The academic coach and researcher discussed the components of the Read 180 program and the benefits of the writing zone. The English/Language Arts Department voiced concern of writing being a shared responsibility in all content areas and not the sole responsibility of the department. The idea of closed reading practice being paired with written response was expressed as the major area of need for improving student writing.

The collective need was to develop student reading comprehension as well as writing skills to produce coherent written literary responses. Conversely, the researcher focused on the instructional model of the Read 180 program for students that had participated in the program for two consecutive years. The sample group of 10 students and 5 teacher volunteers provided insight on the benefits and challenges with using computer-assisted instruction.

Scholastic Reading Inventory Data

The Read 180 Next Generation program and End-of-Grade data was used to address Research Question 1 (What is the impact of computer-assisted instruction and use of technology on improving eighth-grade students' writing in an urban middle school?)

The data provided a correlation for establishing the impact of differentiated computer-assisted instruction in the Read 180 Next Generation program to academic performance in writing for English/Language Arts.

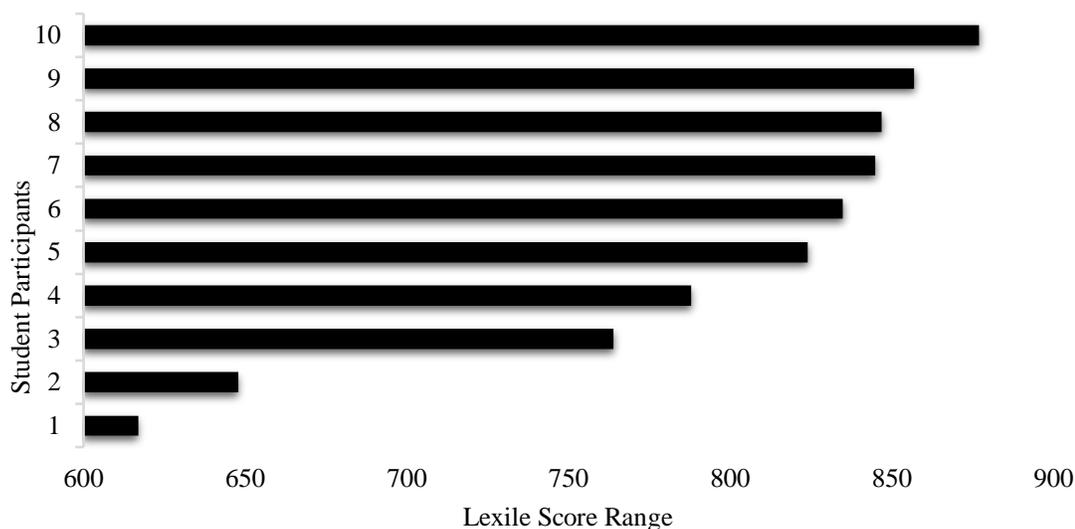


Figure 2. READ 180 end of year scholastic reading inventory Lexile scores

Previous summative assessments were primarily selected responses requiring students to pick the one best answer after reading passages and apply appropriate reading skills. The Criterion Reference Competency Test was phased out and the new End-of-Grade standardized assessment, the Georgia Milestones, was introduced. The format of the Georgia Milestones assessment was closely aligned to the Read 180 Next Generation program because the new assessment required students to answer selected responses and constructed response questions.

Student Responses to Questionnaire

The open-ended student questionnaire was used to address Research Question 2 (What are eighth-grade students' perception and experience with computer-assisted writing? What is the pedagogical significance of computer assisted learning from

students' perspective?). Three major themes surfaced in the student responses. Students were struggling to express their thoughts, so limited ability to form ideas impeded the organization and overall fluency in their written composition. Secondly, consistent use of technology from academic class to class is not practiced. Thirdly, students' belief about writing causes them to feel that the limited use creates barriers to become better writers because they do not understand the writing genres and format expectations.

For survey question 1 (How do your teachers incorporate writing in their content?), the students stated that they are instructed on what to write and how many paragraphs are expected for each writing piece. In English/Language Arts students developed their writing by using a rubric and peer editing, but in other content students reported that writing is summarization practice for new content that had been introduced in each academic class.

Students' self-evaluation of their writing was the focus for survey question 2 (Do you feel comfortable expressing your thoughts on writing assignments in your academic classes?). The common answer students reported was through class discussion prior to writing, being able to discuss various points of view; their attitude towards the topic affects their ability to express their thoughts. However, Student 9 wrote, "I am not a good writer and I do not like to write but I try my best."

In response to survey question 3 (Do your teachers use computers in their class? Explain the challenges and benefits of using technology during school.), students reported aside from Read 180, technology is not used in their other content classes very often. Students further reported that other technology is used such as iPad in their Social Studies class. One challenge presented was the lack of technology throughout the school

and secondly the limited use. The benefits shared were students felt they learned more when using technology because they were more engaged in the content.

How do you feel when you are allowed to use computers in your class was survey question 4 and students reported that using technology exposes them to more information that they did not understand and were able to work faster than routine book assignments.

In response to survey question 5 (Do you think students that actively write in all academic classes using computer-assisted instruction can become better writers?), students had different responses such as,

Student 1 wrote, “Sometimes students copy word for word and don’t express original thoughts.”

Student 5 wrote, “Yes, I do believe that students who actively write can become better writers because writing every day in all subject areas can improve our skills.”

Student 10 wrote, “No students won’t become better writers because we don’t use computers in every class.

Students that were enrolled in the Read 180 program shared the perception that computer-assisted instruction is more engaging but recognized the limited use across all of their academic classes. The shared responsibility of writing across the curriculum was not consistent with the development of writing skills in all subject areas. Students reported being told what to write by teachers as opposed to utilizing their writing skills to formulate a coherent response. Read 180 worked to improve students’ writing skills but was not the quick fix for improving writing.

Teacher Responses to Questionnaire

Five teachers volunteered to complete the open-ended teacher questionnaire and their responses addressed Research Question 3 (What are eighth-grade teachers' perception and experience with computer-assisted writing? What are the challenges and benefits?). The researcher asked the teachers five questions regarding how technology is integrated into their content area, the benefits and challenges of using technology, and if they believed CAI would help students become better writers.

Content Area Writing. Survey question 1 addressed incorporating writing into their content area and each teacher explained that they have students write journal entries on various topics, summarization of concepts through note-taking, and other engaging activities such as interactive class blogs designed to build vocabulary and created discussion boards centered around current and relevant topics. Teacher 4 stated, "Students complete routine formative assessment writing such as ticket out of the door or one sentence review summaries for the lesson of the day."

The misconception among teachers is that writing instruction is the primary responsibility of English/Language Arts teachers. The mistaken belief about writing should be addressed to encourage increased writing across the curriculum. Writing across the curriculum is believed by Language Arts teachers to improve student performance in all academics. However, there is a shared view that when students are asked to write the resistance is very present as they struggle to write the necessary minimum. Teacher 1 wrote, "Students are not mechanically sound when writing, so they have yet to establish their voice which limits their expression." Teachers also stated the

students' lack of critical thinking inhibits their writing so often times they have displayed not being organized in their thought processes as they respond to writing situations.

All of the teacher participants agreed that skill level determined the quality of student writing as well as their interest in the writing topic. As mentioned, limited exposure and vocabulary presented barriers in students being able to construct coherent composition. The implied need presented is more consistent writing across all academics in order to improve students' writing fluency and voice.

Benefits and Challenges of Computer-Assisted Writing. Common instructional practices suggest the use of integrated technology as each teacher reported the use of technology in their content lessons. As a differentiation of instruction strategy, teachers agreed that a significant benefit of computer-assisted instruction is the ability to address different learning styles. A second benefit to using CAI addressed readiness to compete in the global society. Keeping with the stated mission and vision of the school district, teachers used technology to prepare students to be able to perform at their skill level. Student engagement was also reported as a benefit because through CAI, students received immediate feedback on computer-based programs designed to remediate and tutor students on grade level standards and tasks. The idea of instructional technology is thought of as a best instructional practice, however integrating technology presented unforeseen challenges.

Teachers reported infrastructure concerns and problems as they addressed the challenges of integrating technology into their curriculum. The teachers agreed the lack of properly working equipment presented a barrier in utilizing technology. Newer computer-based programs relied on up-to-date operating systems, and the in the research

setting all of the desktop computers were not in working condition. Another significant challenge Teacher 2 stated, “The school-wide computer-assisted instructional programs do not have longevity lasting only a year or two at the most before a new program is implemented.” Teacher 4 chose to focus on a teacher challenge and reported that a teacher who is uncomfortable will not effectively use technology in their classroom.

The integration of technology into curriculum is a differentiation of instruction strategy that must be consistent in order to be effective. Teachers leaned towards integrating technology but not on a consistent basis which is also the understated effort to incorporate more content writing to maximize student learning. Based on the teacher reported responses the researcher inferred that better operating technology could result in better integration into all academic content. Nevertheless, instructional technology assists in student growth but the teachers identified weaknesses in complete integration.

Students Become Better Writers. Student growth is the new measure for academic achievement and writing has evolved as a major needs improvement area of focus. Teachers were asked if they believed students would become better writers if they used computer-assisted instruction to write across the curriculum and they agreed that CAI would be beneficial. Specifically, another experienced Read 180 teacher stated, “The Read 180 program has already proved to be helpful in the writing process. It gives step by step instruction, guiding students towards becoming better writers.” However, the general belief supported the idea of programs being used as intended to see increased performance because immediate feedback and additional practice pinpoints detailed areas of focus to build strong foundational skills.

Data Triangulation

The data gathered from the questionnaires, Read 180 Scholastic Achievement Manager (SAM), and students' End-of-Grade assessment scores presented relative insight about the impact of computer-assisted instruction on improving student achievement in writing.

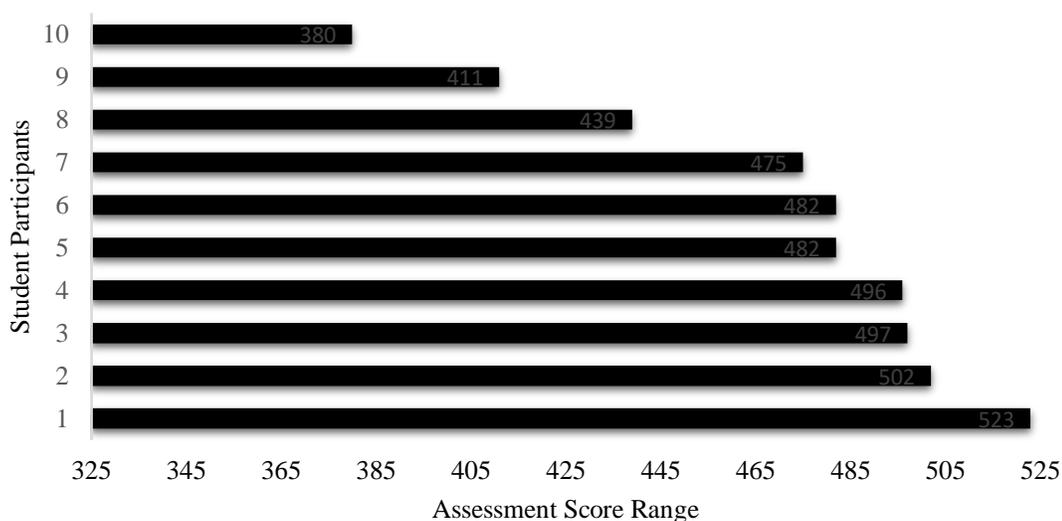


Figure 3. End-of-Grade Assessment Data

The assessment data is representative of student achievement after utilizing integrated technology as a tool for learning. Achievement in English/Language Arts is categorized as Beginning Learners (185-474), Developing Learners (475-524), Proficient Learners (525-591), and Distinguished Learners (592-785) (Georgia Department of Education, 2015). Students' scores ranges in the above table displays mostly Developing Learners which are students that have demonstrated partial proficiency and need additional academic support to warrant success at the next grade level. As mentioned, CAI is not the quick fix for improving writing. However, the student assessment data displayed more students' ability to correctly answer selected response and constructed

response questions that are similar in structure and theme as the reading and writing practice in the Read 180 program. Through exposure it is assumed that students' practice in the Read 180 better prepared them to respond to literature more coherently than on other state assessments.

The questionnaire results for all 15 students and teachers combined participants revealed the belief that CAI is engaging and when used properly is effective in improving student ability to produce coherent writing. In the areas of writing for all academic subjects, the benefits and challenges of using instructional technology, and the belief that instructional technology can help students become better writers, participants agreed that more technology use is essential in academics. For example, the student individual instructional technology learning path yielded an average of four reading segments completed for the academic year, accompanied by various grammar practice in the word and spelling instructional zone, and constructed responses in the success and writing instructional zones.

The research conducted in this case study is vital to the research setting. Computer-assisted instruction presented in the Read 180 class appears to have impacted the writing skills of the student participants. The student questionnaires uncovered students' perception of CAI based on their experiences. Effective computer-based programs increase student awareness of their personal strengths and weakness, thus providing tutorial and remedial instruction to improve skills. Curriculum aligned instructional technology and differentiating instruction through integrating technology keeps students engaged, thereby maximizing learning opportunities for better achievement. Shared responsibility in learning for teachers and students is significant for

student achievement and retention of skills. Integrating useful technology, writing across the curriculum, and changing the mindset about writing are important for improving writing for students as they advance in rigorous education beyond middle school.

Student growth is analytic for deciding the impact of educational interventions. Student achievement weighs heavily on education stakeholders as they seek to remedy problems identified in student performance on academic tasks. Understanding how to restructure instructional practices to meet the needs of students is essential in improving student achievement. Collaboration across all academic content is an opportunity that can strengthen students' skills and improve performance in all areas of learning creating a shared learning experience. Writing across the curriculum allows teachers to assess what students are learning and realistically drive students towards projected learning targets. Integrating technology provides differentiation of instruction to meet the needs of students and fosters better student engagement.

Finding the best suited computer-assisted instruction, curriculum aligned program is a collective effort between school district leaders and individual school administrators. Working collectively with stakeholders and fostering buy-in into instructional technology helps drive instruction and solve problems with student learning. Teacher buy-in is vital when integrating technology because the implementation of instructional technology programs must be done with fidelity and with the attitude to support changes in how students learn. The researcher presented qualitative data regarding computer-assisted writing instruction as perceived by the participants of the case study.

Chapter 5: Discussion

The purpose of this applied dissertation was to investigate the impact computer-assisted instruction had on improving writing scores for urban eighth-grade students. This chapter reasserts the results of this qualitative study about the effectiveness of computer-assisted instruction which revealed the importance of instructional technology, considered limitations of the study, and suggested recommendations for further research.

The relevance of this case study on important decision making when deciding on computer-based programs that have a longstanding effect on student performance. Instructional technology supports academic content and assists teachers with infusing technology during the learning process to promote lifelong learning (Bibb County School District, 2015). This study focused on computer-assisted writing instruction, writing as a shared responsibility in all academic subjects, and perceptions of integrated technology.

This case study used 15 participants whose questionnaire data, as well as student participants' Read 180 and End-of-Grade data to answer the following research questions that guided the study.

1. What is the impact of computer-assisted instruction and use of technology on improving eighth-grade students' writing in an urban middle school?
2. What are eighth-grade students' perceptions and experiences with computer-assisted writing? What is the pedagogical significance of computer assisted learning from students' perspective?
3. What are eighth-grade teachers' perceptions and experiences with computer-assisted writing? What are the challenges and benefits?

Research Questions

Determining the impact of instructional technology is an on-going process as computer-assisted instruction programs adjust to meet the needs of student learners. As pointed out by Gorder (2008) instructional technology is about availability, but the technology must be used effectively as it reshapes the classroom and appeals to the needs of student learners. Standardized assessments placed more expectations on students and teachers which shifted instructional practices towards test preparation. Assessment data revealed needs improvement areas for students, and differentiating instruction through the integration of technology appeared to be the best practice for addressing those needs.

Instructional technology made students partners in their learning and provided opportunities for more student engagement because of various learning styles. Writing components in computer-assisted instruction provided immediate feedback for students as they worked to improve their writing skills. The literature made reference to the beliefs of Olinghouse and Wilson (2013) that writing is a difficult process of many high level cognitive skills, so the immediate feedback benefited students as they worked to improve. Formative assessments allowed students to focus on one skill at a time until it was mastered, then transferred to summative assessments such as the End-of-Grade assessment that integrated short and extended writing responses. Instructional technology is impactful only when it is infused as a regular part of classroom instruction. In order to have longstanding impact as stated in the literature, Roth (2014) suggested a need for effective training in teacher preparation programs on the newest technology trends.

The significance of computer-assisted instruction from the students' perception is based on experience with using instructional technology at school. Students discussed the limited use of technology but found it helpful and more engaging. This perception is supported by Mims-Word (2012) that believed students become more engaged and are able to make connections when their interests are considered as they work through the curriculum. Students shared their struggle to write and commented that their writing routines established throughout their academic classes were not substantial enough to improve their skills. This is attributed to the aforementioned literature that educators need to be more aware of struggling writers so that there can be transformation of the writing curriculum (Gregg, Coleman, Davis, & Chalk, 2007).

Feedback from teachers as well as CAI benefited most of the student participants in the study. The consistent use of instruction technology in Read 180 fulfilled the participants' adolescent needs, this view is supported by Downes and Bishop (2012) that stated middle grades students utilize technologies eagerly more than any school age group of students. Students agreed that they would like more technology use during instruction; they need consistency to be better prepared for standardized assessments.

Computer-assisted instruction from the teachers' perception is more teacher-centered. Teachers shared the limited availability of operational technology throughout the research site as a factor when integrating computer-based learning in their classrooms. As noted by Howely, Hough, and Wood (2011), technological infrastructure played a role in the effective use of instructional technology and so does the teacher's attitude. It is inferred that limited availability of resources caused distraction to the

integration process which resulted in limited use per academic course outside of the Read 180 program.

Teachers further communicated routine writing and the struggle for students to establish their voice, but the writing students produced in class was more formative than summative as students were challenged to write across the curriculum. Watson and Jan (2004) supported the view that teachers need to model the writing process while utilizing digital displays to enrich instruction and encourage learning. The ultimate goal for more content writing and integrated technology is to support student achievement. Teachers agreed that consistent technology and appropriate CAI would help students become better writers.

The results of this case study indicated that initiatives were taken to support student learning at the research site. Gorder (2008) recognized that teachers must garner understanding of how and why to use technology in meaningful ways. The participants assessed their beliefs and provided statements on their perception of computer-assisted instruction. These perceptions were based on their experiences with instructional technology used for remediation of literacy skills. The implied benefit of integrated technology is increased achievement, but there are limitations to this study.

Implications

The results of this case study indicated that there were instructional practices in place that supported the integration of technology. The teacher participants examined their own instructional practices to identify opportunities to include more instructional technology to effectively aide students in their learning. The student participants

reflected on their instructional technology experiences and expressed how they felt benefited through the use of CAI.

The researcher's school is a low-achievement school, and according to Harris, Graham and Mason (2003) making the connection between reading and writing is an obstacle low-achieving students face regularly. Stakeholders must understand the integration of technology process in order for it to be impactful enough to change assessment data.

Limitations

This study was limited to the research site and the sampled group of students that completed the questionnaire. This study included 10 eighth-grade students that participated in the Read 180 program for two consecutive years. This study also included five teachers that completed the teacher questionnaire and their perceptions are limited to the research setting. The CAI experience and teacher approach to writing can only be applied to the middle school in this study. Other unforeseen obstacles were the anticipated changes in English/Language Arts curriculum and standardized assessments.

The state of Georgia renamed their performance standards the Georgia Standards of Excellence and implemented a new standardized assessment. The Georgia Eighth-Grade Writing Assessment was administered as a separate testing requirement for the final time in January of 2014. The writing assessment was embedded in the newly administered Georgia Milestones Assessment as part three of the English/Language Arts section. Students were expected to produce extended writing pieces over various literary text. The new Georgia standardized assessment was administered for the first time in April of 2015, and scores reports were not published until the fall of the same year. The

Georgia Milestones was met with much speculation regarding format and there was no substantial way to fully prepare for the test.

Although the new assessment was expected the use of computer-based programs was limited to Read 180 specific students, English/Language Arts, and Math content areas. Instructional technology support programs were changed and students as well as teachers had to adapt to new computer-assisted instruction programs. The change was met with excitement by students being more engaged in their learning. Students also welcomed the opportunity to leave their traditional classroom and visit the computer lab. However, teachers noted the constant change in instructional technology as a weakness at the research site.

Recommendations

The results of this study revealed the importance of the integration of technology into instructional practices. The necessity for more instructional technology as a means of differentiated instruction has become prevalent as testing requirements change from year to year. Access to online programs is becoming more available to students and they are able to extend their skills practice beyond the traditional classroom setting. More specifically, access to computer-based programs supports the district's vision to make students globally competitive, meet students at the level of learning, and reinforce the performance standards students are expected to demonstrate proficiency in on summative assessments.

It is not enough to suggest that teachers integrate technology into their academic content. Based on the literature, confidence when integrating technology is a major factor for effective use of instructional technology. With this in mind, the researcher

recommends a review of research based, computer-assisted instruction programs be conducted in order to address the needs of the student population. As mentioned, Staples et al. (2005) stated that effective integration means knowing how technology is supposed to support student learning versus how technology has been used. For this urban middle school to successfully use instructional technology, a teacher needs assessment must be accomplished to identify the progress monitoring benefits of CAI in order to maximize the intended use of a program. For students, the needs assessment must be established to correctly identify skills that will be accelerated and remediated based on student ability.

Additionally, the study revealed the need for professional development in writing across the curriculum so that writing becomes a shared responsibility among all academic subjects. As teachers become more adapt to integrating technology into their curriculum, professional development in best writing practices is recommended to improve students' writing skills to facilitate transference of instructional knowledge. Combining concepts results in more student engagement and increases student learning. Ultimately, the goal is to extend student learning and provide them with meaningful ways to demonstrate comprehension. Collaboratively learning how to incorporate writing into all subjects helps teachers develop relevant lessons and address students' needs.

The research revealed that the lack of technology was the primary issue with utilizing CAI as a learning tool for students at the research site. A second issue was the lack of consistency in writing across the curriculum. Writing was treated as the responsibility of English/Language Arts teachers. Applebee et al. (2009) implied that the use of technology while writing does not have significant bearing on students because their assessments are not given from a computer-based platform. That idea has been

challenged as the Georgia Milestones End-of-Grade assessment has been implemented with gradual increase to 100 percent of students being tested online. Thorough integration of technology and writing across the curriculum must be required of all education stakeholders in order to effectively measure the impact computer-assisted instruction has on improving student writing.

Conclusion

The research study exposed the researcher to the limited reliability of technology throughout the research site. Limited resources deter buy-in into instructional technology because of the constant change in computer-based programs used to support student learning. The integration of technology is necessary to increase student engagement, student performance, and address student learning styles. School districts are investing in the newest technologies so there is a need for effective training for teachers (Roth, 2014). Technology integration is an ongoing process; it must be embedded in the instructional practices in order to be effective. When teachers are able to connect student learning to meaningful instructional technology increased learning opportunities are presented.

Improvement is an expectation of students, but they must be equipped with the tools needed in order to achieve. Writing is not an isolated skill, but a shared task for all academic subjects. Student assessments have evolved to computer-based, constructed response formats that require deeper critical thinking and analytical skills. Based on student perceptions as revealed in the study, they need assistance in writing to establish their voice when expressing their thoughts. Students also need consistent and meaningful computer-assisted instruction designed to support learning as opposed to changing programs from year to year.

Student achievement for this urban middle school can be obtained but stakeholders must be prepared to change their mindset about instructional practices. Standardized assessments are factor uncontrollable by the school in this study. However, delivery of curriculum and relevant lessons are factors that have the ability to impact student learning. Data drives instruction, therefore, valuable computer-assisted instruction programs that are data driven and research based should be fully implemented in order to encourage student growth.

As stated in this study, collaboration is a major focus in the study and that includes collaborating at the district level to offer the best solutions to improve student performance. Collaboration at the school level specifically addresses the needs of the population, and guides discussion towards strategies to successfully integrate computer-assisted instruction in order to maximize learning. In-depth discussions and goal setting for projected outcomes are the foundation for deciding on suitable instructional technology. Further research in this area may reveal how computer-assisted writing instruction is measured in other schools that consistently integrate technology across the curriculum.

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Appendix A
Open-Ended Questionnaire for Students

Open-Ended Questionnaire for Student Group

The following questions will be used to gather information from students. Students will respond in writing.

1. How do your teachers incorporate writing in their content area?

2. How well do you express your thoughts on writing assignments in your academic classes?

3. Do your teachers use computers in their classes? Explain the challenges and benefits of using technology during school.

4. How do you feel when you are allowed to use computers in your academic classes?

5. Do you think students that actively write in all academic courses using computer-assisted instruction can become better writers?

Appendix B
Open-Ended Questionnaire for Teachers

Open-Ended Questionnaire for Teacher Group

The following questions will be used to gather information from teachers. Teachers will respond in writing.

1. How do you incorporate writing in your content area?

2. How well do your students express their thoughts on writing assignments in your class?

3. Do you integrate technology into your curriculum? If so, what are the challenges and benefits of using technology?

4. How do your students respond to using technology in your class?

5. What do you think about students writing across the curriculum using computer-assisted instruction? Do you believe they will become better writers?
