The Effects of Blended Learning on Student Achievement within Various Environments: A Program Evaluation

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The Effects of Blended Learning on Student Achievement within Various Environments:
A Program Evaluation

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The Effects of Blended Learning on Student Achievement within Various Environments:  
A Program Evaluation

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Educational Leadership Doctoral Program

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Abstract

Educational K-12 learning environments have had limited to no change over many decades. Due to recent initiatives to social and emotional programs, safety measures, and the need to increase academic achievement, there has been a push for school choice options that go beyond the traditional ways of learning. The purpose of this study is to examine the effectiveness of blended learning on student achievement within various environments in Grades 3-8. I used a mixed methodology to compare quantitative extant data from Achieve3000® and State Standardized Assessments as well as qualitative data through teacher, parent, and student surveys. I collected 229 student extant data points over one school year with 10 teachers, 38 parents, and five students participating in the statement surveys. The extant data and surveys served as the determining factor of a subgroup’s self-efficacy toward blended learning options and actual achievements.
Preface

The basis for this research is founded on my passion for developing methods to enhance education in Grades K-12. Today’s technology brings new opportunities and challenges to instructional practices across classrooms. Therefore, as the world moves further into the digital age, educators must find ways to effectively blend the learning with purposeful face-to-face and computer-based interactions.

A child’s ability and will can be indicative of the learning environment in which they are placed. It is imperative that educators are aware of a child’s preference for learning and ways to attain academic achievement through face-to-face and computer-based instruction. How students access content, process information, and produce products that show mastery can be done in both environments. Therefore, ensuring an intentional plan for individual instruction could change the way educators deliver K-12 education.

In truth, I could not have had this level of success without the support of so many. My family, who is a consistent unwavering support group, has cheered me through educational challenges and in my own learning disabilities. In addition, many colleagues and mentors have helped me become the educator I am today. Finally, the NLU committee members alongside Dr. Sparks, my chair, and Dr. Hughes, my editor, have provided so much patience, guidance, and reassurances through this research process. To you all, I share my sincerest appreciation.
# Table of Contents

Abstract .................................................................................................................................................. iv  
Preface .................................................................................................................................................. v  
Figures .................................................................................................................................................. viii  

Chapter One: Introduction .................................................................................................................. 1  
  Purpose of the Program Evaluation ............................................................................................... 3  
  Rationale ........................................................................................................................................... 6  
  Goals .................................................................................................................................................. 8  
  Definition of Terms .......................................................................................................................... 8  
  Research Questions ....................................................................................................................... 11  
  Conclusion ......................................................................................................................................... 12  

Chapter Two: Review of the Literature ............................................................................................... 13  
  Student-Centered Learning ............................................................................................................ 14  
  Teacher Influences ........................................................................................................................... 17  
  Technology Within Learning Environments .................................................................................. 22  
  Conclusion ......................................................................................................................................... 25  

Chapter Three: Methodology .............................................................................................................. 26  
  Research Design Overview ............................................................................................................. 26  
  Participants ..................................................................................................................................... 28  
  Data Gathering Techniques .......................................................................................................... 29  
  Data Analysis Techniques ............................................................................................................. 31  
  Ethical Considerations ................................................................................................................... 33  
  Limitations ....................................................................................................................................... 34  
  Conclusion ......................................................................................................................................... 35  

Chapter Four: Results .......................................................................................................................... 36  
  Findings ............................................................................................................................................ 36  
  Parent/Guardian Survey Findings .................................................................................................. 37  
  Student Survey Findings ................................................................................................................. 50  
  Teacher Survey Findings ................................................................................................................. 54  
  Achieve3000® Academic Report and Data Findings .................................................................. 65  
  2021 State Assessment Report and Data Findings ........................................................................ 70  
  Historical and Present State Assessment Outcomes ...................................................................... 74  
  Contexts .......................................................................................................................................... 80  
  Culture ............................................................................................................................................. 82  
  Conditions ....................................................................................................................................... 84  
  Competencies ................................................................................................................................. 85  
  Interpretation ................................................................................................................................. 87  
  Judgments ........................................................................................................................................ 88  
  Recommendations ......................................................................................................................... 90  
  Conclusion ......................................................................................................................................... 91
Chapter Five: To-Be Framework ................................................................. 92
  Envisioning the Success To-Be .............................................................. 95
  Conclusion ......................................................................................... 103

Chapter Six: Strategies and Actions ...................................................... 105
  First Strategy: Create a Sense of Urgency ........................................... 106
  Second Strategy: Forming a Powerful Guiding Coalition .................. 107
  Third Strategy: Creating a Vision ....................................................... 108
  Fourth Strategy: Enlist A Volunteer Army ......................................... 109
  Fifth Strategy: Enable Action by Removing Barriers ......................... 109
  Sixth Strategy: Generate Short-Term Wins ....................................... 110
  Seventh Strategy: Consolidating and Improving .............................. 111
  Eighth Strategy: Expanding and Sustaining Innovation .................... 112
  Assessing the Effectiveness of the Change ....................................... 113
  Involving Community Partners ....................................................... 114
  Conclusion ....................................................................................... 115

Chapter Seven: Implications and Policy Recommendations .................. 117
  Policy Statement ............................................................................. 117
  Analysis of Needs ........................................................................... 120
  Educational Analysis ....................................................................... 121
  Economic Analysis ......................................................................... 122
  Social Analysis ............................................................................. 123
  Political Analysis ........................................................................... 124
  Legal Analysis .............................................................................. 126
  Moral and Ethical Analysis ............................................................. 126
  Implications for Staff and Community Relationships ...................... 127
  Conclusion ..................................................................................... 128

Chapter Eight: Conclusion .................................................................... 129
  Discussion ...................................................................................... 129
  Leadership Lessons ........................................................................ 131
  Conclusion ..................................................................................... 133

References .......................................................................................... 134

Appendices ......................................................................................... 144
  A: Survey Questions for Teachers ................................................... 145
  B: Survey Questions for Parents ..................................................... 146
  C: Survey Questions for Students ................................................... 147
  D: Gordon’s Learning Stages Model ................................................. 148
  E: As-Is 4 Cs Analysis .................................................................... 149
  F: To-Be 4 Cs Analysis ................................................................... 150
  G: Strategies and Action Chart ....................................................... 151
Figures

Figure 1 Results of Parent Survey Statement 1 .................................................... 38
Figure 2 Results of Parent Survey Statement 2 .................................................... 39
Figure 3 Results of Parent Survey Statement 3 .................................................... 40
Figure 4 Results of Parent Survey Statement 4 .................................................... 41
Figure 5 Results of Parent Survey Statement 5 .................................................... 42
Figure 6 Results of Parent Survey Statement 6 .................................................... 43
Figure 7 Results of Parent Survey Statement 7 .................................................... 44
Figure 8 Results of Parent Survey Statement 8 .................................................... 45
Figure 9 Results of Parent Survey Statement 9 .................................................... 46
Figure 10 Results of Parent Survey Statement 10 .............................................. 47
Figure 11 Results of Parent Survey Statement 11 ............................................... 48
Figure 12 Results of Student Survey Statement 1 ................................................ 50
Figure 13 Results of Student Survey Statement 3 ................................................ 51
Figure 14 Results of Student Survey Statement 4 ................................................ 52
Figure 15 Results of Student Survey Statement 5 ................................................ 53
Figure 16 Results of Student Survey Statement 6 ................................................ 54
Figure 17 Results of Teacher Survey Statement 1 ................................................ 55
Figure 18 Results of Teacher Survey Statement 2 ................................................ 56
Figure 19 Results of Teacher Survey Statement 3 ................................................ 57
Figure 20 Results of Teacher Survey Statement 4 ................................................ 58
Figure 21 Results of Teacher Survey Statement 5 ................................................ 59
Figure 22 Results of Teacher Survey Statement 6 ................................................ 60
Figure 23 Results of Teacher Survey Statement 7 ................................................ 61
Figure 24 Results of Teacher Survey Statement 8 ................................................ 62
Figure 25 Results of Teacher Survey Statement 9 ................................................ 63
Figure 26 Results of Teacher Survey Statement 10 .............................................. 64
Figure 27 Second Grade Achieve3000® Data ...................................................... 66
Figure 28 Third Grade Achieve3000® Data ......................................................... 67
Figure 29 Fourth Grade Achieve3000® Data ....................................................... 67
Figure 30 Fifth Grade Achieve3000® Data ........................................................ 68
Figure 31 Sixth Grade Achieve3000® Data ......................................................... 68
Figure 32 Seventh Grade Achieve3000® Data ..................................................... 69
Figure 33 Eighth Grade Achieve3000® Data ....................................................... 69
Figure 34 Schoolwide Achieve3000® Data ....................................................... 70
Figure 35 Fourth Grade 2021 State Assessment ................................................... 71
Figure 36 Fifth Grade 2021 State Assessment ..................................................... 72
Figure 37 Sixth Grade 2021 State Assessment .................................................... 72
Figure 38 Seventh Grade 2021 State Assessment ............................................... 73
Figure 39 Eighth Grade 2021 State Assessment ................................................... 74
Figure 40 Fifth Grade Two-Year Comparison of Proficiency Levels .................. 76
Figure 41 Sixth Grade Two-Year Comparison of Proficiency Levels ................. 77
Figure 42 Seventh Grade Two-Year Comparison of Proficiency Levels ............. 78
Figure 43 Eighth Grade Two-Year Comparison of Proficiency Levels .......... 79
Chapter One: Introduction

The purpose of my study was to understand the effects on student learning when a blended instructional model was implemented, integrating adaptable computer-based technology with direct teacher instruction. While serving a Title I community, I noticed many computer-based systems being implemented to promote learning; therefore, placing technological integration demands on teachers’ instruction. It was this realization that caused me to choose to investigate various innovative learning environments that support the forward-thinking of all educational stakeholders to gain a better understanding of blended learning and differentiation that impacts students’ achievement.

The organization in which I completed my study averaged 350 children in kindergarten through eighth grade in a charter school setting. Each year the school faced approximately 20% or more mobility rate. During the 2020-2021 school year the student enrollment ethnicity breakdown was as follows: 26% Black, non-Hispanic, with 47% Hispanic, 9% multiracial, 2% Asian or Pacific Islander, and 16% percent White. From the same total demographic enrollments 78% received free or reduced-price lunches, English Language Learners made up 21% of the population, students in Exceptional Student Education (ESE) programs made up 15%, and those who had 504 plans were at 8%; in addition, 1% were in foster care. The total gender breakdown of the above demographics was 52% female and 48% male.

The mission was to ensure “All stakeholders believe every child learns best in a safe, nurturing, and stimulating environment where high academic expectations, self-esteem, and good character are promoted” (citation withheld to protect confidentiality). The intention was to enable students to develop globally through strong instructional
accountability with challenging academics that encompassed a second language program and technological tools. The overarching goal was to educate all individuals to reach their maximum potential.

At the time of my data collection, there was only one English Language Arts (ELA) teacher at each grade level, kindergarten through eighth grade, totaling nine individuals. The ELA teachers were focused on two types of teaching components that included teaching via direct instruction as well as computer-based programs to blend both methods of instruction. This blended delivery method spearheaded my curiosity about how each method impacted student achievement – direct instruction, remote instruction, and computer-based instruction as stand-alone options or blended. I wanted to know how each method sustained or enhanced academic outcomes. Specifically, I began to look at Grades 3-8 to determine if and how blended learning in various environments impacted student outcomes.

This study was relevant to the educational community for many reasons. The first relevancy was the opportunity to examine how schools using computer-based programs enhanced academic outcomes through establishing routines and frameworks that were blended or stand-alone. Another relevancy was related to the COVID-19 pandemic. As a variety of teaching and learning environments emerged in response to the pandemic, I analyzed the importance of different blended models and their impact on instruction. I also studied the various environments and simultaneous teaching. As educational practices evolved to differentiate and customize academic learning, as well as embed social-emotional learning, along with a healthy and safe school, educators were pressured to be flexible in their instructional delivery for all children. It occurred to me that if the
measurement was effective and intentional, then educators could develop ways to quickly establish the best option for a child to learn. Educators could maximize their instructional potential that connected children to an environment and an environment to individualized learning methods and practices.

**Purpose of the Program Evaluation**

The purpose of my study was to understand the effects on student learning when a blended instructional model was implemented, integrating adaptable computer-based technology with direct teacher instruction. In the evolving educational platform, a multitude of technological systems aimed to improve educational outcomes. Computer-based programs, like Achieve3000®, an online reading program, used adaptive technology through literacy Lexile scores as a source for learning that enhanced and differentiated instruction (DI) based on students’ levels of mastery (U. S. Department of Education, 2018).

Teachers faced expectations to customize learning for students and find efficient ways to measure student outcomes while maintaining productivity (Nagel, 2018). Therefore, while educators and computer-based programs configured instruction differently they shared key traits. It was important to explore how blending the two enhanced student learning options would raise awareness around best options for teaching practices based on a child’s choice and productivity.

Integration for learning came at a critical time when the nation was exploring alternative resources for teaching and learning during the pandemic (Reimers et al., 2020). The educational state of emergency resulting from COVID-19 required safe-at-home plans for learning remotely (Reimers et al., 2020). In addition to the pandemic
impacting education, leaders and teachers faced the growing concerns and discussions around bullying and mental health issues. The growing social emotional learning (SEL) laws, policies, and regulations to prevent bullying and address mental health placed an additional responsibility on teachers and leaders that included extensive plans such as Mental Health Assistance Plan, Safe School Plan, Crisis Management Team and Threat Assessment Plans.

These three types of SEL concerns enhanced the challenges educators faced that consequently brought computer-based learning to the forefront fast and furiously. Subsequently, as a result of addressing SEL and pandemic challenges, curriculum adoptions moved beyond paper and pencil or workbooks and included computer software programs, applications, and gadgets that adhered to standards-based instructional practices to promote student achievement in innovative ways (Reimers et al., 2020). Therefore, I wanted to increase awareness among the general public of instructional environment options that aligned with a child’s ability and will to learn for increased academic achievement. Additionally, I wanted to offer options for parents that went beyond the traditional and archaic ways educators addressed teaching and learning.

I planned this study to address the impact of blended learning within various environments on student achievement. Teachers seemed to encounter obstacles when integrating computer-based technology into classroom lessons (Cortez, 2017). According to Cortez (2017), these challenges were evident when “25% of teachers indicate they are intimidated by students’ knowledge and use of tech, they feel unfamiliar with certain resources, and many worry devices will become a distraction” (para. 4). The perceptions of educators who integrated computer-based programs in order to see the
differences in teaching methods and student achievement through this study generated a better understanding from the time of Cortez’s study in 2017 to the time of my study completion in 2021. Additionally, by analyzing perceptions of various innovative learning environments, I supported a better understanding of students and their awareness of personal ability and will to learn dependent on traditional or innovative instructional methods.

As Cortez stated, the multitude of technologies available for teaching and learning can sometimes place an unconsciously unskilled complexity on educators (2017). I focused my efforts on reviewing new instructional teaching methods that were implemented as a result of the blended model to deepen my understanding of an instructor’s comfort level with implementing innovative learning environments that included computer-based programs (blended, hybrid, or traditional) and impacted student achievement. Teachers faced challenges finding professional development opportunities that met their needs; therefore, they had to become self-taught technology adaptors with robust self-efficacy while integrating effective instructional classroom practices simultaneously. I surveyed teachers to identify comfort levels and expertise in adapting to new educational platforms for learning. Survey outcomes helped define ways to differentiate professional development and enhance student instruction that may lead to new policies for appropriate school choice options.

I was intrigued by the dichotomy of practice displayed by teachers in terms of instructional technology. Some were incorporating technology as a resource to enhance learning, while others were using technology for the sole purpose of credit recovery and classroom instruction. The educational field could benefit from greater knowledge of the
various innovative learning environments; especially, the use of computer-based programs (CBP) that are blended with face-to-face instruction and computer-based technology within a traditional classroom or remote learning environment.

I examined the use of an adaptive literacy program, Achieve3000®, for Grades 2-8 in one school. Achieve3000® was one of the adaptive computer-based programs used as a flexible curriculum platform that promised individualized learning and acceleration to close the opportunity gap for all students to achieve the best of their potential. In this research, I explored whether a computer-based program, Achieve3000®, alongside blended instructional teaching methods inside the classroom and at-home learning aligned with a child’s ability to meet state standards that measured student achievement. I also evaluated Achieve3000® resources, along with self-efficacy surveys, to explore how learning was impacted when blended.

**Rationale**

The state of the educational system in the U. S. had added a micro-focus on a child’s mental and physical health – social-emotional learning (SEL), along with academic demands. This micro-focus was brought about with the transfer of technology in the classroom by means of computer-based curriculum options for teaching and learning. The additional pressure on a teacher’s ability to juggle differentiated curriculum and academics, SEL, and technology had imparted difficulties to maintain and recruit educators across the state of the school under study. The magnitude of the contributing factors of the teacher shortage ranged from working conditions, accessible curriculum, certification requirements, relevant training, assessment accountability, and compensation (García & Weiss 2019). This study on how blended learning in various environments
impacted student achievement was best explored by means of assisting teachers with learning how to simplify instruction with supported technology and computer-based programs.

Achieve3000® is a curriculum-based supplemental online literacy program that supports instruction. This teaching tool was implemented to improve literacy outcomes and enhance instructional practices. In this study, I utilized Achieve3000® as one means to collect data and student achievement outcomes. One of the research-based strengths of Achieve3000® includes its support of differentiated instruction. Young (2005) found a statistically significant link between the program and reading performance. In considering what teachers faced with differentiating instruction for all students, I inquired into teachers’ perceptions about Achieve3000® as a support for a teacher’s instructional planning. I used Achieve3000® data to better understand school-wide, grade level, and individual student success. While instructors and computer-based programs shared similar teaching objectives, it was interesting to explore if integrating or blending them enhanced student learning through both students’ will to interact and ability to learn.

My investigation of computer-based learning and teacher-directed learning was based on my desire to better understand if there was a balance in various instructional methods and individual student achievement outcomes. I wanted to find a clear understanding of the efficacy of these different methods of teaching – online learning, remote or hybrid learning, and brick and mortar traditional classroom learning. I wanted to examine whether equitable instruction was necessarily equal in terms of student achievement outcomes. I wanted to study these different methods within various learning environments, so I could glean their efficacy in practice. My purpose was to then
encourage stakeholders with my findings to generate greater effectiveness, productivity, and intentionality in transforming children’s learning experiences for the better.

**Goals**

The goal of my evaluation was to study the impact on student achievement when innovative learning environment methods were implemented and blending technology occurred. One intended goal of the program evaluation was to determine whether there was a relationship between the delivery mode of instruction and student achievement. Another intended goal of the program evaluation was to raise awareness about the effects on student achievement when computer-based programs and direct teacher instruction were blended. Additionally, I took into consideration the fact that families’ choice of innovative learning environments was influenced and impacted by the COVID-19 pandemic. I planned to share my findings with stakeholders in order to raise awareness and provide a clear understanding of how teachers instruct, plan for instruction, and perform with adaptive computer-based technological programs that impact student achievement.

**Definition of Terms**

In this study, I used terms that are similar but not necessarily interchangeable. Verbiage such as *blending learning* and *blended technology* versus *supportive technology* have similarities but are defined differently. Precise definitions of the terms I used within this inquiry include the following:

1. Ability to learn – one’s ability to learn and reason directly relates to intellect and the human quality to reason and process knowledge (Study.Com | Take Online Courses. Earn College Credit. Research Schools, Degrees & Careers, 2021)
2. Achieve3000® – a supplemental online literacy program that provides nonfiction reading content to students in Grades pre-K–12 and focuses on building phonemic awareness, phonics, fluency, reading comprehension, vocabulary, and writing skills (U. S. Department of Education, 2018).

3. Achieve3000® LevelSet – an online assessment tool. The LevelSet data provides pre-, middle, and -post, online assessment using the Lexile (R) Framework to match a student with a Lexile number (beginning reader to 1700+) that correlates readability to informational text. This assessment provides a measure of a student's ability to read and comprehend and can be correlated to grade levels kindergarten through twelfth.

4. Adaptive learning or adaptive teaching – the delivery of custom learning experiences that address the unique needs of an individual through just-in-time feedback, pathways, and resources directly taught or within a computer-based program (Smartsparrow.com, 2018).

5. Adaptive technology – the computer system’s way to provide a dynamic environment which updates students’ on-task progress and modifies the instructional sequence according to a child’s need. The adaptive strategy uses prior estimates based on pre-test and on-task performance with an algorithm (generated value) that makes an instructional sequence for learning (Rothen & Tennyson, 1978).

6. Blended learning – is a method of teaching that integrates technology and digital media with traditional instructor-led classroom activities, giving students more
flexibility to customize their learning experiences (Defining Blended Learning - What It Is, And What It Isn’t, 2019).

7. Computer-based learning program – sometimes abbreviated CBL, refers to the use of computers as a key component of the educational environment. Computers in the classroom or more broadly a structured environment in which computers are used for teaching purposes (Glavin, 2014).

8. Differentiated instruction or individualized teaching – entails tailoring instruction to meet individual needs. Whether teachers differentiate content, process, products, or the learning environment, the use of ongoing assessment and flexible grouping makes this a successful approach to instruction (Tomlinson, 2015).

9. Direct instruction – when teachers use explicit teaching techniques to teach a specific skill to their students. This type of instruction is teacher-directed, where a teacher typically stands at the front of a room and presents information (Direct Instruction Definition and Meaning, n.d.)

10. Hybrid Learning – an educational model in which students attend classes in-person while others join class virtually. Educators teach students remotely and in person at the same time using tools like video conferencing (Boyarsky, 2020).

11. Innovative learning environment – a combined flexible use of spaces, furniture, and technology with greater collaboration and flexibility in relation to teaching curriculum (Earp, 2019).


13. Social Emotional Learning – a methodology that helps students of all ages better comprehend their emotions to feel them fully and demonstrate empathy toward
others. Social emotional education is a teacher’s way of helping students make positive responsible decisions and creating a framework to achieve goals that build stronger relationships with self and others (National University, 2021).

14. Supportive technology – giving students complete control over what, when, and how they learn, aided by technology (Digital Promise, 2016, p.7).

15. Will to learn – one’s desire to learn and be open to or seek out new experiences or skills and information that improve one’s abilities and enjoyment. Being willing to learn is essential for progression and growth to move forward and be trained or educated (Young HPC, 2021).

Research Questions

Each of my research questions addressed one or more of the four arenas of change – context(s), culture, conditions, competencies (Wagner et al., 2006):

1. To what extent does instruction through adaptive technology impact student learning outcomes?

2. To what extent do students exposed to a blended learning model of direct instruction and adaptive technology have greater learning outcomes than those exposed to direct instruction alone?

3. To what extent do teacher preferences and their ability to implement blending instruction impact student achievement?

4. How do children and their parents or guardians feel about direct computer-based learning, direct classroom instruction, or a blended method for learning?
5. To what extent do students’ attitudes toward computer-based instruction impact student achievement?

Conclusion

To summarize, the educational system has been impacted by variables that have brought teachers and leaders to rethink learning environments and the incorporation of computer-based programs. Determining the best process for integrating direct instruction with adaptive computer-based technology may impact student achievement and change instructional methods for learning. However, to accomplish this task educators will need to be self-reflective in their comfort level to navigate computer-based programs and integrate learning methods that complement the adaptive technology (Rothen & Tennyson, 1978). In addition, students’ confidence and awareness in their own ability and willingness to learn can affect academic outcomes (Young HPC, 2021).
Chapter Two: Review of the Literature

The fast-paced educational arena encompasses K-12 student academic growth being measured through computer-based technology, core curricular texts, face-to-face instruction, and online programs in order to meet standards for career and college readiness. This progression only perpetuates the state’s vision to be an efficient, world-class, globally competitive educational system (Citation withheld to protect confidentiality). In my experience, educators, leaders, and teachers, often struggle between curriculum precision and computer-based blended learning to predetermine accountable actions.

To maintain accuracy, students’ learning is often required to toggle between human interaction and technological connectivity to attain a grade, degree, or career advancement. Yet, when educators consider student mastery, they look at student outcomes that rely on content, process, and product through which standards are met. Therefore, through the content of this literature review, I explored whether and how technology alone or blended with face-to-face teaching impacts student achievement. Through this research, I reviewed literature pertaining to both technology models within traditional environments and innovative blended models.

The educational technology war dates back to a 2005 study about the use of technology in the classroom that had doubled in just three years, from 1984 to 1987. The United States and Australia led the world with a 5:1 student computer ratio (Gulek, & Demirtas, 2005, p. 4). Yet, since the beginning of the 21st century, the speed at which technology use has grown in classrooms seems to have steadied. Studies completed at the University of Phoenix and MidAmerica Nazarene University demonstrated the U. S.
classroom use of tablets or laptops for learning decreased from 86% in 2017 to 73% in 2018 (Cortez, 2017; Nagel, 2018).

In researching literature around technology and student achievement, I found many books and scholarly articles that addressed types of technology available for the classroom, ways to instruct with various infrastructures, and the needed buy-in from educators to impact student achievement. I used sources such as EBSCO and Google Scholar that provided a vast perspective on technology in the classroom and its use across grade levels over a 10-year span. I laid out my review of the relevant literature based upon how technology influences student learning outcomes. I identified three components that directly impact student achievement: student-centered learning, teacher influences, and learning environments.

**Student-Centered Learning**

Stevens & Rice (2016) said to achieve a student-centered learning option, educators need to transition from teacher-centered practice. One of the many ways to accomplish this task is to incorporate choice and blended learning in the educational platform. “Blended learning has challenged traditional expectations around quality and quantity of interactions among teachers and students…The ratio of internet versus face-to-face instruction varies widely across courses and schools with blended learning growing the fastest” (p. 448).

There are multiple blended formats that integrate face-to-face instruction with computer-based or web-based instruction. According to Karam et al. (2014), there are large numbers of blending combinations that enhance student-centered learning by providing different experiences in various environments. The authors stated that “self-directed learning is more student-friendly when offering alternative methods to traditional
The study expounded upon the intersocial nature of courses having significance in student outcomes. The intra-social online or remote courses did not have the same high achievement levels as their face-to-face counterpart courses. A social presence including verbal and nonverbal cues reinforced learning when engagement occurred. This study set the stage for balancing between traditional and non-traditional ways of teaching to maintain a student-centered learning environment.

A learner’s ability to be a problem-solver and a critical thinker is important yet finding ways of balancing social interaction with enhanced technology is evolving exponentially creating a constant change in education. Cetin et al. (2017) conducted a study of Technology Enhanced Problem-Based Learning Activities (TEPLA), in which learners’ attitudes toward mathematics and academic achievement were analyzed to determine effectiveness. Students acknowledged that attitudes and usefulness made a difference in how they learned, and they found TEPLA to be interesting and meaningful during course work. The authors’ findings, through written and oral student interviews, showed “almost all learners agreed that they could learn math meaningfully and permanently thanks to TEPLA” (p. 201). Therefore, initiating instructional change with a student-centered focus on learning achievement by placing the ownership of problem-solving and critical thinking on the learner is important to student achievement.

Achievement, a self-determination theory, is based on the ability to engage in all pieces of learning: community, extracurricular activities, academic, and cultural events – a student network (Mejia et al., 2019). A study in Colombia focused on how students’ participation in networks through school and community helped them manage educational technologies, and these networks supported intrinsic motivation, competence,
autonomy, and relatedness (Mejia et al., 2019, pp. 1-11). The students felt confident and reassured in their learning when they engaged in all networks, especially the integration of activities that merged school and community. When participatory actions are not included in the learning process, students may feel excluded.

Mejia et al. (2019) analyzed students’ use of technology to build stronger communication. Students engaged in interaction with information and communication technologies (ICT) programs as a means to stay connected with the community. Although this study did not directly analyze standards-based, direct instruction, the relationship with using technology as a means to expand the network was key to building a student’s determination, sense of belongingness, and intrinsic motivation. Opportunities for students to work together to set goals, establish a framework, and take the lead on their own learning resulted in students’ ability to perform tasks and connect with other students to enhance their psychological competence with technologies and networking.

Shin et al. (2019) conducted a mixed-methods case study in which they considered 163 high school students’ inquiry-based learning (IBL) methods to examine how different soft scaffolds (both peer and teacher) and hard scaffolds (technological tools, resource, and text) affected academic achievement in biology. Technology-enhanced classroom environments had a pivotal role in the IBL scaffold to transfer the teaching methods from the instructor to a computer-based scaffold. The research by Mejia et al. (2019) further stated:

[The] Scaffolding framework empirically confirmed that hard, peer, and teacher scaffolds positively impact individual achievement and group performance. The results extend the scope of previous studies by suggesting that students perceive
hardened peer scaffolding as better support in terms of gaining domain knowledge in technology-enhanced IBL classroom environments. (p. 2440)

In brief, student-centered learning evolved from teacher-centered tasks and assignments to blending and integrating collaborative learning scaffolds. “Research has found that effective integration of technology may actually encourage teachers to move away from reliance on traditional modes of instruction” (Protheroe, 2005, p. 47). There were four key factors to consider when striving for student achievement – balance, blending, collaboration, and technology. According to Protheroe, computer-based blended learning increases interaction with teachers and peers. Additionally, using technology has proven highly effective with drill and practice, test scores, and accountability, especially with at-risk students (Protheroe, 2005, p.47).

**Teacher Influences**

Gone are the days of teachers relying solely on text to assign work and spending an exorbitant amount of time on grading tasks. “As the growth of technology application in the classroom continues to grow, educators and researchers speculate as to how effective the use of technology is and the impacts on teachers’ self-efficacy. Results were measurable, and others observable, but mixed results were found” (Kryeziu et al., 2021, p. 1). The research seems to show that student learning has a whole new meaning with the integration of technology followed by peer and teacher collaboration to create exploratory problem-solving thinkers, a non-teacher-lead classroom.

The research of Kryeziu et al. (2021) shared many school-based teachers and administrators were impacted by the effects of technology in the classroom. The researchers explored the impact of technology on contemporary teaching in all subjects, as well as students’ motivation and interest when technology was integrated into the
learning process. The study showed that motivation and length of attention in a child’s instructional day were increased when technological tools were used in the process. The researchers further stated that the positive may not always outweigh the negative.

“Findings also pointed to the risk that, although technology can be used in education to attract attention and raise motivation, if being misused, technology can have a number of negative effects” (Kryeziu et al., 2021, p. 8).

Recognizing ways to support teachers to minimize the misuse of technology through strong differentiated training may help build a growth mindset to instill change. One quotation that resonated with me in terms of change research is by President John F. Kennedy: “Change is the law of life, and those who look only to the past and present are certain to miss the future” (1963). This thinking further rationalizes the importance of influencing teachers, and in doing so leaders and instructional coaches are challenged to set up a framework and systems that help guide teachers’ instruction (Puig & Froelich, 2021, p. 236).

Using Puig and Froelich’s (2021) coaching continuum as a tool to build teaching capacity coincides with the need to transform learning environments through collaborative methods that are observed, explored, and interactive. According to Puig and Froelich, teaching is to evolve to a multisensory approach that is transdisciplinary and supportive for cross curricular articulation. Puig and Froelich’s coaching continuum is utilized as a source of professional development (PD). “Curating a transdisciplinary multisensory learning environments supports critical and creative global citizens who will be ready for college and or career opportunities” (p. 236). This extends to the need for
teachers and leaders to focus on language as a tool for thinking and build systems that encourage educators toward their personal goal defined as coaching.

Additional methods to support change and expand an educator’s understanding of digital competencies was established in an article by Falloon (2020) titled *From Digital Literacy to Digital Competence*. In the article, Falloon explored the integration of personal-ethical development through a framework in which the teacher’s digital competency (TDC) is expanded through a holistic understanding of the interdisciplinary measures needed to productively function in education. The TDC framework aligns with the prior work of Mishra and Koehler (2006) regarding the technological pedagogical content knowledge (TPACK) model (Falloon, 2020, p. 2453). The two frameworks placed together transform traditional ideas and mechanisms to new perspectives that curate a means to be technically oriented or digitally competent. In addition, regarding the framework in this study, Falloon (2020) explained,

> It highlights the importance of this in relation to their future classroom roles, educating young people to help them build capacity to leverage advantage from digital resources and information in safe, secure and sustainable ways. To facilitate this, a broadly based teacher digital competence framework is introduced, which teacher educators have an important part to play in implementing through modeling and deliberate planning and teaching. (pp. 2463-2464)

According to Puig and Froelich (2021), “Curating a transdisciplinary multisensory learning environment supports critical and creative global citizens who will be ready for college and or career opportunities” (p. 236). This emphasizes the need for teachers and
leaders to focus on language as a tool for thinking and build systems that encourage educators toward their personal goal defined as coaching (Puig & Froelich, 2021). This creates challenges for teachers and leaders attempting to measure classroom, subject, or school-wide success. Accountability is key to having a measurable objective evaluation.

Marzano’s work around the art and science of teaching in 2007 evolved in 2010 and re-examined, in the context of technology, the effectiveness of technology as an evaluation tool (Learning Sciences International & Marzano, 2013, pp. 5-6). In this study, Marzano analyzed the use of interactive whiteboards to enhance student achievement as measured in Domain 1 of the Marzano Teacher Evaluation Model. There are four domains in this teacher evaluation model, and in each domain, there are elements of instruction to observe (Learning Sciences International & Marzano, 2013, p. 13). These elements include teachers’ instructional practices and lesson planning techniques such as routines that review and preview new content, integrate technology, and measure mastery. As in Puig and Froelich’s *Transdisciplinary Literacy Coaching on a Continuum of Professional Learning* (2021), Marzano’s *The Marzano Teacher Evaluation Model* (2013) also incorporated various types of observations. Both looked at ways to explore teacher reflection and collaboration on lessons, planning, delivery, and outcomes. Researchers are always finding ways to influence teachers to be change agents and create “intentional and coherent demonstration” of instruction (Puig and Froelich, 2013, p.25). Incorporating technology and blended learning models in the classroom makes this especially important and risk-free for teachers.

Technology integration into classroom practice challenges administrators and teachers. Education professionals must manage these challenges as they incorporate
various learning environments, blend technology into teacher supportive lessons, measure
teacher accomplished practices along with student achievement, and address areas of
instruction and student achievement that need improvement. Karadeniz and Vatanaritiran
(2015) analyzed these challenges and found that they inevitably begin with principals –
instructional leaders – who are the necessary role models and expectation setters for the
use of technology. Leaders must also provide layers of support and training for staff to
ensure implementation momentum. Among successful technology initiatives, “most
include effective training for teachers prior to and during the adoption mostly focusing on
improving technological, pedagogical, and content knowledge of teachers” (Karadeniz &
Vatanartiran, 2015, p. 216).

Another researcher who explored technology in the classroom through means of
mobile integration is Durbin (2013) whose findings were similar to Karadeniz and
Vatanartiarn’s findings (2015). According to Durbin, “The current study focused on a
local charter school whose practices were grounded in the conceptual framework of
experiential learning, social interdependence, and multiple intelligences using mobile
technology” (2013, p. 1). While better understanding the pedagogy, instructional
practices, and attitudes of K-8 charter teachers, the common thread lay within
professional development. “Professional development and professional learning
communities can be used to overcome challenges and support teachers’ technological
usage as student-centered instructional tools and aids with successful transition” (Durbin,
2013). These findings addressed the ways educators can catch up with today’s learners,
transform the learning process, and enhance teacher effectiveness. Effectiveness that
gradually scaffolds as teachers become “consciously skilled” (Adams, 2014, para. 6).
Technology Within Learning Environments

Bolatli and Korucu (2020) found, “With the technological developments, the use of technological tools in education has increased. Many teaching models have been developed to achieve full learning in education. The use of technological tools in developed teaching models comes to the fore” (Bolatli & Korucu, 2020, p. 244). In this study, the authors analyzed the flipped classroom method (FCM) using mobile devices to identify collaborative learning views and student achievement with expert opinions to measure student success. The aim of this research was to measure how students “can follow the lessons easily without limitations of time and place and thus understand the subject with enriched visuals” (Bolatli & Korucu, 2020, p. 245). The flexibility in using FCM had a direct reflection on how blending the learning support systems and innovative environment to enhance student place, pace, and path aligns with a learner’s choice, ability, and will.

Kopcha and Sullins (2007) delved into two different middle school control groups and analyzed a learner’s ability and will through preference and choice. The results of this study showed that computer-based instruction with “matching learner preference to the type of program they receive is an effective strategy for high-prior-knowledge students but not for those with low prior knowledge” (Kopcha & Sullivan, 2007, p. 265). The middle school progressions based on choice added curiosity to how individual instruction was enhanced among elementary school students using computer-based technology.

In the study “The Relationship Between the Use of New Technologies and Tools and the Academic Achievement of Elementary School Students,” Kardanova et al. (2018)
explored the effectiveness of the technological equipment that was provided to schools under the Modernization of Regional Education Systems (MRSO) project. Although the school that the authors studied had not been updated with technology, the 655 students received equipment and participated in the study that allowed the use of technological tools to enhance instruction. Student achievement was inadequate for various reasons including the following:

- Slow Internet access, no Internet access, as well as temporary power outages (particularly during times of emergency situations like school closures)
- A small number of handout materials that stimulated children and insufficient knowledge on the part of teachers about how to utilize the materials
- Insufficient time for teachers to familiarize themselves with interactive whiteboards and dynamic teaching aids (Kardanova et al., 2018).

Comfort level (2017) also found that with inadequate professional development or continuing education, student achievement was significantly and negatively impacted at the elementary levels. “Transitioning from a traditional to a blended model can produce many challenges. These challenges can relate primarily to faculty and learner time; level of effort; familiarity, skill, and comfort-level with online platform” (p. 2017). This was especially interesting as “63% of K-12 [students] use technology in the classroom daily, with 86% indicating they use laptops the most, 58% use educational apps, and 41% use social media” (Murray, 2017, p. 2017). The expedited growth of technological tools for classrooms and teacher competencies to instruct indicates a need for educators to take a closer look at blended learning with online and face-to-face comparisons.
Numerous researchers have elaborated on elements that control the pace, path, and place that allow for student-centered learning experiences that are also called blended learning. Powel et al. explain blended learning in the following way:

Blended learning models, developed from early experimentation, place the student at the center of the learning process, harnessing the power of technology to create more engaging, efficient, and success-oriented learning environments. In blending models, educators quickly identify gaps in learning and differentiate instruction to ensure that failure is not an option. (2015, p. 4)

The method of blending technology and face-to-face direct instructional elements are often considered as an in-school or out-of-school only option. Powel et al. suggested otherwise, indicating that blending technology can work by using “place, path, and/or pace, and at least in part, at a supervised brick-and-mortar location away from home. The modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience” (2015, p. 5).

Powell (2015) also said,

In recent years, teachers in traditional schools have adapted their classrooms to represent the connected world in which they and their students live. Web-based content and resources are increasingly supplementing textbooks. New tools enable efficient communication and timely feedback. Collaboration and learning extend beyond the four walls of the classroom. (p. 4)

Thus, blended learning can be within the same building and yet not within the same walls, and choice for learning can be geared toward student-centered learning. “State, district, school, and classroom leaders recognize that the ultimate potential for blended
learning lies in the opportunity to transform the education system and enable higher levels of learning through competency-based approaches” (Powel et. al., 2015, p. 3).

Conclusion

Blending learning with computer-based technology has a direct and positive impact on students’ choice, differentiation, and achievements. Meanwhile, educators are challenged to use technology intentionally to integrate the learning and align with technology. This coexistent option to blend face-to-face teaching and learning with technology supports equitable education options and unique differences for all learners.
Chapter Three: Methodology

In this chapter, I explained how I designed my research study and addressed various approaches to help complete my research. I provided a rationale for how I gathered qualitative and quantitative data, as well as the techniques I used to analyze my findings. I expounded on the ethical consideration needed to ensure safeguards, and I addressed the limitations of this study.

Research Design Overview

In this program evaluation, I considered how technology affects student achievement when innovative blended learning environments are in place. Analyzing one school year with certified educators and an adopted computer-based program, Achieve3000®, to enhance student achievement, I identified whether traditional learning or remote learning, when blended with Achieve3000®, was most effective. The study was completed over an eight-month span in the 2020-2021 school year. I used summative assessments in combination with surveys from students, parents, and educators. The quantitative and qualitative data opened opportunities for me to determine how self-efficacy and actual achievements aligned over time. The summative data demonstrated the direct and indirect program impact on larger systems and within the community. These data enabled me to focus on best practices, environmental options, and the extent of learning (Patton, 2008 p. 302).

The implementation of a mixed-method design diversifies data using qualitative and quantitative data to triangulate findings for enhanced validity (James et al., 2008, p. 60). I used this methodology in my research to address specific program strengths and weaknesses within various learning environments. My analysis of assessment outcomes
combined with open-ended survey questions from participants assisted in determining to what extent the Achieve3000® program impacted student achievement within different learning environments. I considered achievement through the lens of qualitative survey data and quantitative summative assessment data. I used five sources of data under two research methods, quantitative and qualitative, in this program evaluation. Quantitative methods included two data points from Grades 3-8 using state assessment outcomes and Achieve3000® LevelSet.

Achieve3000® uses Lexile measures to match a child to an appropriate leveled (readable) passage. This information is collected monthly to see growth over time and can be accessed at any time through the system portal. The data collected extends from Lexile level performance of a child, or group of children, by grade, or by school from month to month; thus, accessing and comparing the beginning of the year (month) to the end of the year (month). Additionally, Lexile level texts are adjusted on the first of each month in the system based on student performance on passages assigned and completed. Teachers and leaders are able to access data reports to assess and analyze a child or a class/grade progression describing such information as:

- How has Lexile reading measure performance changed over time?
- How are my students performing on activities?
- How are my students performing on standards?
- How are my students performing on standards (NCLB subgroups)?

These various reports help educators see multiple sources of data to manage outcomes and support ELA core programs. The reports are organized in tables where educators can see the overall grade-level outcome/performance in a row based on the percentages that
are labeled as follows: far below, approaches, meets, and exceeds. The percentages provide an overall view of the group or class and assist teachers with seeing progression over time (from month to month). Each table provides a plus sign on the left side of each label to drill down by student. This option begins a deep analysis of individual progression and achievements. These data sets are publicly shared among state, district, and school stakeholders. Additionally, in Grades 3-8, I implemented parent surveys, student surveys, and teacher surveys.

**Participants**

Each of the three participant groups in this program evaluation – students, parents or guardians, and teachers – has a critical part in student success. Therefore, I triangulated data from all three groups to find patterns and trends that guide future initiatives (Patton, 2008, p. 134). To start, students enrolled in the Achieve3000® English Language Arts (ELA) program ranged from grade three through grade eight, and ages eight to 13. Out of the 330 students enrolled, 229 students were tested in Grades 3-8. Among them, 26 parents consented to having their child participate in my survey. Among their children, 19% of those students, or five students, assented and completed the survey. I ensured that students understood that if they chose not to participate, they would receive no negative consequences.

The second group of participants was the parents or guardians of students enrolled at the school under study. The COVID 19 pandemic during the fourth quarter of the school year 2019-2020 forced all students to learn at home online based on a state requirement. This impacted parents’ and guardians’ interest in participating in my survey.
I invited 180 parents to take my survey, and of those, 40 parents volunteered and completed the survey.

The third group of participants was educators hired to teach Achieve3000® or hold responsibilities for traditional ELA instruction. A total of 10 teachers ages 25-65, varying in gender, and teaching experience volunteered to participate. I ensured that all teachers understood that not participating would not impact their evaluation, status at the school, or employment in any way. Among these teachers, 60% of them had teaching experience of more than three years, and 40% of them had less than three years of teaching experience.

Data Gathering Techniques

The implementation and research method I used in this study was one of mixed methods. I used extant data from assessments and survey data to analyze how computer-based programs and technology, when blended, influenced student achievement. I used extant data from the state Department of Education K-20 Education Information Portal and website (Citation withheld to preserve confidentiality).

Quantitative Extant Data

I collected data from the State Standards Assessment (SSA) ELA scores from the 2020-2021 school year for all students in Grades 4-8 enrolled in the brick-and-mortar public school under study. I also collected data from the Achieve3000® adaptable computer-based program to serve as the technology program evaluation in the 2020-2021 school year for all students in Grades 4-8 enrolled in the brick-and-mortar public school under study. I used these data to analyze proficiencies and compare proficiencies between the SSA ELA scores and the proficiencies among students who used Achieve3000®.
This quantitative measure helped me examine the proficiency of those learning in an at-home/remote state, brick-and-mortar/teacher-directed, and a hybrid model using both remote and teacher-directed instruction.

The second source of quantitative data came from Achieve3000®. I collected these data monthly as a source of progress monitoring student achievement over time. In this study, I used the end-of-year data and the state’s proficiency standards for student achievement performance indicators. I compared students’ who engaged in different educational modalities, traditional classroom and eLearning, using both Achieve3000® data and State Standards Assessment data.

**Quantitative & Qualitative Survey Data**

Surveys provided both a quantitative and a qualitative source to compare perceptions of learning environments to proficiencies demonstrated in the quantitative data. I posted the student, parent, and teacher surveys through the school’s course management system that allowed me to provide quick communication to all. In each communication, I established a private link for access. The first form allowed the participants to acknowledge consent to participate in my research. Upon agreement, I provided the survey which was anonymous, and participants had the option to opt-out and not submit the survey.

I developed and electronically distributed surveys for three different types of participants. The first participant group consisted of students in Grades 3-8 and each survey was comprised of six questions (See Appendix C). Surveys were only provided to students with parental consent and who assented to participate voluntarily. The second participant group involved parents or guardians whose child(ren) were actively enrolled
in Grades 3-8, and the survey consisted of 11 questions (See Appendix B). The last participant group included teachers who were working within the brick-and-mortar school, and each survey was comprised of 10 questions (See Appendix A).

**Data Analysis Techniques**

I started my data analysis by analyzing surveys completed from all three participant groups. The surveys for each participant group – students, parents or guardians, and teachers – consisted of multiple-choice, closed agreement statements. The statements in all surveys were geared so I could better understand how an individual felt personally related to the agreement statement. I used the Likert six-point agreement scale to measure various statements (Jamieson, n.d.). Each participant used this survey design to help measure their attitude or perceptions that ranged from *strongly agree*, *agree*, *neutral*, *disagree*, *strongly disagree*, and *not applicable*.

I examined the perceptions of each participant group. At first, I analyzed each group to determine average outcomes based on answers to the agreement scale measure. Then I created tables and sorted responses to every question, 27 in total, regardless of the participant group, and categorized them based on their alignment to the four Cs, context, conditions, competencies, and culture, as outlined by Wagner et al. (2006). This two-part process allowed me to see perceptions, attitudes, and opinions from multiple lenses. My first look was by category on how the participants rated or valued each statement, and I calculated average percentages. The second analysis allowed me to determine how all participants’ responses aligned with context, conditions, competencies, and culture to help me determine if there was a need for transformation to improve teaching (Wagner et al., 2006, p. 125).
I then used quantitative data to analyze assessment outcomes during the 2020-2021 school year. The first data point I analyzed was the average Lexile over the span of the school year and at the final end-of-year markings based upon data from Achieve3000®. According to Achieve3000® and MetaMetrics, the average Lexile growth is an estimated range from the end of one school year to the end of another (U. S. Department of Education, 2018). For the use in this study, in Grades 3 and 4, a beginning year assessment called LevelSet was implemented in August-September. Then another LevelSet was completed in March which provided me the opportunity to calculate an average increase of Lexile percentages. On average, students who complete 40 reading activities on Achieve3000® can gain up to 113 Lexile points (U. S. Department of Education, 2018). I used the Lexile data from the first LevelSet and the last LevelSet to calculate average growth, and I compared each data point to the child’s chosen innovative instructional delivery method, remote eLearning, or brick-and-mortar direct instruction.

Upon completion of collecting Achieve3000® Lexile averages at each grade level, I then began collecting state-wide accountability assessments from a password-protected sign-in portal. I obtained average proficiencies from each grade level fourth through eighth, as third-grade assessments were delayed and did not provide outcomes at the time of my study. I analyzed these data by breaking down each grade into the five levels of proficiency based on the state rankings to determine performance: level 5 = mastery, level 4 = proficient, Level 3 = satisfactory, level 2 = below satisfactory, and level 1 = inadequate. Levels 1 and 2 were considered at risk and low level, while Levels 3 through 5 were considered at or above grade level, and therefore, proficient.
I summarized the quantitative outcomes of each child’s state assessment initially by disaggregating grade level and proficiency level percentages by count, the total number of students within a specific level. Looking at each level of achievement, Levels 1-5, I identified the count of total achievement levels and sorted them into the categories of students who were engaged in eLearning and students who were attending the brick-and-mortar school. Each grade level had a total count for each achievement level. Upon reorganizing the data at each grade level, I then compared the 2020-2021 school year counts within the same grade level from the 2019 school year. The purpose of this year-to-year comparison was to produce a clearer understanding of how enrollment impacted the various learning environments and outcomes in relation to the previous all face-to-face instructional method. I analyzed the 2019 proficiency percentages and compared them with the 2020 achievement level percentages using two data sources, Achieve3000® and State Standard Assessment.

Ethical Considerations

There were no anticipated risks to participants in this program evaluation beyond that of everyday life. Participants taking part in this study may have benefitted by being reflective about educational practices and teaching methods. Teachers may have benefitted by looking closely at their instructional practices and blended model approach for future teaching and learning implementations and designs. I requested permission and ensured anonymity and confidentiality for all participants by using non identifiers within each response. I disabled any opportunity to obtain names, sex, age, ethnicity, and socioeconomic status in any way. The quantitative extant data I collected was public
domain and reported to districts, school boards, and families throughout the year, including the final reporting months of May through July.

**Limitations**

The limitations faced in this study started with the COVID-19 pandemic. I did not anticipate a pandemic when I conceived the topic of this study and the collection of data. The pandemic caused the state and school districts to change the learning from brick-and-mortar to eLearning environments. This change directly impacted the end-of-year quantitative data collection for the 2020-2021 school year. Many of the students who would have been face-to-face with a teacher never saw a teacher for learning within the school year until they attended the state assessment which they were required to complete in person at the school site. This limitation was especially apparent in middle school where data showed face-to-face instruction to be more effective when the number of eLearning students working from home submitted little to no work on a daily basis with limited formal and informal assessments completed for the majority of the school year.

The impact of a family’s choice to change the learning environment from solely brick-and-mortar to hybrid or remote indirectly changed the blended learning model. This limitation was an unintended consequence that was beneficial to the study since I could use the data collected to measure true blended and non-blended learning methods and outcomes. Teachers using both methods to instruct students at the start of the year ended the year with more face-to-face students than remote students.

Another limitation was the final number of participants who volunteered to take part in my study. For example, 40 families agreed via parent informed consent for their child to participate in the study, and ultimately only five students assented and completed
the survey. This limited the initial sample size I anticipated to explore and analyze as student data. Among the 12 teachers who qualified for the parameters of my survey, 10 volunteered to participate in the research. Teachers did not anticipate simultaneously teaching hybrid, remote, and brick-and-mortar students. This may have altered or changed the overall attitudes and opinions toward the blended model with various learning environments.

A final possible limitation was that there were some anecdotal reports suggesting students could find means to cheat while taking Achieve3000®. While I recognized this possibility, I was certain cheating did not occur during the time these data were collected. Strenuous monitoring circumstances were such that opportunities to falsify work did not occur.

**Conclusion**

I used a mixed method of quantitative and qualitative data in my research study. The various data points provided needed information to help me analyze the effect of blended learning on student achievement within various learning environments. Each analysis guided me to consider future options for student learning and instructional practices. In the next chapter, I discussed the results of my data collection.
Chapter Four: Results

In this study, I evaluated the effects of blended learning on student achievement within various learning environments. I focused on the collection of both qualitative and quantitative data. I used surveys as the qualitative source of data as a method to inquire into stakeholders’ awareness and perceptions of blended learning environments. In addition, I used State Standards Assessments (SSA) and an English Language Arts (ELA) computer-based program (CBP) called Achieve3000® as quantitative data sources. I analyzed each data point, and then reported my findings within the conceptual framework of the 4 Cs: Contexts, Culture, Conditions, and Competencies (Wagner et al., 2006, pp. 98-110). My further interpretations, judgements, and recommendations are presented at the conclusion of this chapter.

Findings

Through my analysis, I developed findings about teacher practice in several modalities of learning including direct instruction, adapted computer-based instruction, and both direct and adapted simultaneous or blended instruction. The findings in my study stimulated further consideration of the possible relationship between the COVID-19 pandemic triggering instructional practice and the need to rethink educational practices and learning environments. I developed research questions to focus my exploration into the impact of learning modality on instructional delivery and student learning outcomes – more pointedly, the various learning impacts when students were presented with blended, online, or direct instruction. I explored children’s, parents’, and teachers’ self-awareness and perceived accomplishments when blending learning within innovative learning environments.
There were four contributing factors I used to portion my findings through an interval scale of teacher, student, parent, and academic reports. I identified the contributing factors, as parsed out through survey responses to specific learning methodologies, as the following: physical environment, social-emotional health, and academic programs. These learning methods were addressed through statements on surveys by 11 parents or guardians, 10 teachers, and six students (See Appendices A, B, and C). I provided participants the option of sharing individual comments in each survey.

In addition to the surveys, within all learning environments, I used the assessment instrument Achieve3000® daily to track student outcomes. Through this data source, I collected information based on student performance, levels of engagement, and standards-based mastery. I used the daily assignments and LevelSet assessments within Achieve3000® to collect Lexile levels over time. I used the gradual growth data over a year span alongside the snapshot data I collected from the State Standards Assessment (SSA). I used both quantitative data, along with qualitative data, to determine the effectiveness of learning, both actual and perceived in the different contexts.

**Parent and Guardian Survey Findings**

I distributed initial surveys to parents and guardians to encourage participation and elicit participants. Out of the 180 families in Grades 3-8, there were 40 parents who responded and 38 agreed to take the survey. Approximately 13% of students’ parents shared their perspective on educational changes due to COVID-19, including their perceptions about choosing the best learning environment for their child or children while keeping the family safe. Each of the following parental survey statements is listed in Appendix B.
Parent survey Statement 1 responses reflected the agreement level of parents and guardians concerning their child’s enjoyment of the innovative learning environment option to stay at home for remote learning. As shown in Figure 1, out of the 38 parents surveyed, 34% (13) strongly disagreed with this statement, while 18% (7) disagreed. Conversely, seven respondents or 18%, strongly agreed with the statement. There were 13% (10) of the respondents who agreed or were neutral to the statement. However, one parent (3%) responded that the statement was not applicable. Responses are depicted in Figure 1.

Figure 1

Results of Parent Survey Statement 1: My Child Enjoys the Innovative Learning Environment Option to Stay at Home for Remote Learning

Note. N = 38. Parent Survey Statement 1, responses to the question, my child enjoys innovative learning environment option to stay at home for remote learning (eLearning). The response counts were as follows: strongly agree, 7; agree, 5; neutral, 5; strongly disagree, 13; disagree, 7; and, not applicable, 1.
As shown in Figure 2 the parents’ indicated their agreement level to whether their child(ren) was engaged during their participation in the work-at-home option using computer-supported curriculum and instruction. This stay-at-home learning option was structured to incorporate an equal amount of student time working with computer-based program(s) and simultaneous teaching through zoom. Each educational modality served as a component of a blended method from home or at school. For example, teachers used Achieve3000® stretch articles to discuss and front-load a skill or a standard as students logged into their individual accounts to complete activities and articles at their personal Lexile level. Many of the parents, 37% (14), were neutral toward their child’s engagement, while 29% (11) strongly disagreed. The remainder of respondents 24% (9) disagreed. Only 8% (3) agreed, and 2% (1) strongly agreed.

Figure 2

Results of Parent Survey Statement 2: My Child is Engaged During the Innovative Learning Environment Option to Learn from Home on a Computer

Note. N = 38. Parent Survey Statement 2, responses to the statement, my child is engaged during the innovative learning environment option to learn from home on a computer. The response counts were as follows: strongly agree, 1; agree, 3; neutral, 14; strongly disagree, 11; disagree, 9; and, not applicable, 0.
In Figure 3, I depicted the findings from the parent survey concerning parent perceptions about whether the lessons assigned to students seemed appropriate and helpful for their child(ren). These findings show mixed opinions with a large portion agreeing that the lessons assigned were helpful and appropriate with 29% (11) agreeing, and 21% (8) strongly agreeing. One-half of the parents demonstrated that they were satisfied as seen in the combined rate of agree and strongly agree responses of 50% (19) with the computer-based lessons or teacher web conferencing lessons occurring at home. With exception of the 5% (2) who saw the statement as not applicable, the remainder of the parents 45% (17) were neutral or dissatisfied with the lessons assigned in the following percentages: 18% neutral, 16% disagree, and 11% strongly disagree.

**Figure 3**

*Results of Parent Survey Statement 3: The Online Computer-based Lessons Assigned to My Child were Helpful and Appropriate*

![Pie chart showing the distribution of responses: 21% Strongly Agree, 29% Agree, 16% Neutral, 11% Strongly Disagree, 18% Disagree, 5% Not Applicable.]

*Note. N = 38. Parent Survey Statement 3, responses to the statement, the online computer-based lesson assigned to my child were helpful and appropriate. The response counts were as follows: strongly agree, 8; agree, 11; neutral, 7; strongly disagree, 4; disagree, 6; and, not applicable, 2.*
As shown in Figure 4, the parents responded to personal perceptions about their child(ren)’s interactions with the instructor online and whether the instructor’s online interactions with students supported learning. The findings reflected 42% of parents felt the interactions were helpful with 24% (9) agreeing and 18% (7) strongly agreeing with Statement 4. Another 21% (8) remained neutral. Conversely, 34% (13) were less satisfied with the interactions occurring online and did not agree that these interactions were promoting their child’s learning: 21% (8) disagreed, and 13% (5) strongly disagreed. Three percent (1) indicated this statement was not applicable. I took into consideration that some parents did not select the learning from home option.

**Figure 4**

*Results of Parent Survey Statement 4: The Instructor’s Online Computer-based Interactions were Helpful for Promoting my Child’s Learning*

*Note.* N = 38. Parent Survey Question 4, responses to the statement that the instructor’s online computer-based interactions were helpful for promoting my child’s learning. The response counts were as follows: strongly agree, 7; agree, 9; neutral, 8; strongly disagree, 5; disagree, 8; and, not applicable, 1.
As shown in Figure 5, Statement 5 addressed personal competency level around how families felt in preparing for school during the last half of the 2020-21 school year or the 2021-22 school year. These data projected the comfort levels moving forward into school year 2021-22 that may have differed from the mid-year change in 2020-21 to provide options for families to learn at home with blended methods. Among the parents and guardians who responded to Statement 5, 21% (8) strongly agreed and 27% (10) agreed while 13% (5) strongly disagreed and 13% (5) disagreed. Five percent (2) of the respondents said this statement was not applicable to them and 21% (8) remained neutral.

**Figure 5**

*Results of Parent Survey Statement 5: Our Family will be Better Prepared if Computer-based Learning is Offered at Home Moving Forward*

Note. N = 38. Parent Survey Statement 5 stated that our family will be better prepared if computer-based learning is offered at home moving forward. The response counts were as follows: strongly agree, 8; agree, 10; neutral, 8; strongly disagree, 5; disagree, 5; and, not applicable, 2.

As shown in Figure 6, parents and guardians addressed perceptions around their child(ren)’s preparedness for computer-based learning at school, based on at-home experience. A larger group of parents believed that the computer-based programs used at
home would assist their child upon the return to school by 55% (21), with 47% (14)
strongly agreeing and 18% (7) agreeing with the statement. In addition, 16% (5) were
neutral and 3% (1) responded that this statement did not apply; however, 29% (11)
participants disagreed with the statement as 12% (5) strongly disagreed and 16% (6)
disagreed.

**Figure 6**

*Results of Parent Survey Statement 6: My Child is Better Prepared for Computer-based
Learning at School*

![Pie chart showing responses to Parent Survey Statement 6](chart.png)

*Note. N = 38. Parent Survey Statement 6, responses to my child is better prepared for
computer-based learning at school. The response counts were as follows: strongly agree,
14; agree, 7; neutral, 5; strongly disagree, 5; disagree, 6; and, not applicable, 1.*

As shown in Figure 7, parents and guardians indicated their understanding or
belief that both online and teacher direct instruction (blended) through a web
conferencing tool was supportive of academic gains. These data show a large percentage
of respondents remained neutral to this statement at 37% (14). However, it was important
to note that most disagreed with the statement at 53% (20): 29% (11) strongly disagreed
and 24% (9) disagreed. A smaller percentage of respondents agreed at 8% (3) and strongly agreed at 2% (1).

**Figure 7**

Results of Parent Survey Statement 7: I Believe My Child was Able to Learn and Make Academic Gains at Home with the Online Computer-based Programs and Teacher Interactions

![Pie chart showing responses to the statement](chart.png)

Note. N = 38. Parent Survey Statement 7, responses to I believe my child was able to learn and make academic gains at home with the online computer-based programs and teacher interactions. The response counts were as follows: strongly agree, 1; agree, 3; neutral, 14; strongly disagree, 11; disagree, 9; and, not applicable, 0.

As shown in Figure 8, parents and guardians indicated their perception about their child’s computer-based work that was completed at home during remote learning. This statement digs deeper into the parent observations of their child in regard to the program’s activities for learning. Less than half at 39% (15) agreed with the statement about their satisfaction with the learning activities: 21% (8) agreed and 18% strongly agreed (7). There were 18% (7) who neither agreed nor disagreed with the statements, and 5% (2) indicated that the statement did not apply to them. The remainder of the
respondents disagreed with the statement, 37% (14); there were 21% (8) who disagreed and 16% (6) who strongly disagreed.

**Figure 8**

*Results of Parent Survey Statement 8: I Like the Computer-based Program Activities Observed During My Child’s at Home Learning*

![Pie chart showing responses to Parent Survey Statement 8](chart.png)

*Note. $N = 38$. Parent Survey Statement 8, responses to *I like the computer-based program activities observed during my child’s stay at home learning*. The response counts were as follows: strongly agree, 7; agree, 8; neutral, 7; strongly disagree, 6; disagree, 8; and, not applicable, 2.*

As shown in Figure 9, the data from parents and guardians showed a strong agreement to the statement that they preferred that their child(ren) learn in a classroom context with a certified teacher with 79% (30) agreement response rate: 71% (27) strongly agreed, and 8% (3) agreed. Additionally, there were 8% (3) who selected neutral and another 13% (5) in disagreement to some degree: 10% (4) disagreed, and 3% (1) strongly disagreed.
Figure 9

Results of Parent Survey Statement 9: I Prefer my Child to Learn in a Classroom with a Certified Teacher

Note. N = 38. Parent Survey Statement 9, responses to I prefer my child to learn in a classroom with a certified teacher. The response counts were as follows: strongly agree, 27; agree, 3; neutral, 3; strongly disagree, 1; disagree, 4; and, not applicable, 0.

As shown in Figure 10, a high percentage of parents and guardians at 87% (33) responded in agreement with preferring direct instruction over computer-based learning modalities for their child: 71% (27) strongly agreed, and 16% (6) agreed. There were 5% (2) who responded as neutral, and 8% (3) that disagreed with the statement: 3% (1) strongly disagreed and 5% (2) disagreed.
Figure 10

Results of Parent Survey Statement 10: I Prefer Direct Teacher Instruction for My Child’s Learning Program over a Computer-based Program

Note. N = 38. Parent Survey Question 10, responses to I prefer direct teacher instruction for my child’s learning program over computer-based program. The response counts were as follows: strongly agree, 27; agree, 6; neutral, 2; strongly disagree, 1; disagree, 2; and, not applicable, 0.

As shown in Figure 11, parents and guardians responded to a statement that demonstrated a somewhat undecided view about the best learning option for their child with 37% (14) parents who responded with neutral. They did not have a strong opinion about choosing a hybrid approach where their child was both at school and at home for learning. The neutral response supported equally the computer-based program option and the teacher direct instructional option. The majority of parents at 53% (20) did not prefer a hybrid option of sharing the learning environments between home and school: 29% (11) strongly disagreed with this idea, and 24% (9) disagreed. Conversely, only 10% of families agreed with this statement as 8% (3) agreed and 2% (1) strongly agreed.
Figure 11

Results of Parent Survey Statement 11: I Would Prefer for My Child to Learn in a Hybrid Option Over at School in Classroom or at Home All the Time

Note. N = 38. Parent Survey Statement 11, responses to I would prefer my child to learn in a hybrid option (at home and at school) over at school in a classroom or at home all day. The response counts were as follows: strongly agree, 1; agree, 3; neutral, 14; strongly disagree, 11; disagree, 9; and, not applicable, 0.

The optional comments shared by parents and guardians addressed a multitude of areas. The comments suggest thematic points of consideration that included academic achievement, current health or pandemic concerns, a child’s ability or will to learn, and the impact on the social-emotional learning environment. Each area of comments shared a point of view on how families were impacted and their priority for learning was altered or perhaps clarified.

There were six comments that reflected a parent or guardian’s concern about their child’s academic progress. All statements reflected a concern about their child falling behind or not getting the best education during the pandemic and with the learning environment and modality options implemented out of necessity. Some parents stated that
they felt “overwhelmed” with both online and in-class learning as they had personally seen their child “struggle” due to the child’s “academic plans or inabilities.” Two parents mentioned the need for “hands-on learning” being a necessity for academic success. Others touched on the children’s “lack of skills to rally and effectively utilize eLearning tools,” especially in the earlier grades (K-3), and concerns that the upper-grade students were not taking at-home learning seriously.

Five parents touched on health and social-emotional well-being concerns in their comments. Many specifically stated they opted into eLearning out of necessity and because of the Covid-19 concerns. This included the current climate of the state under study, their desire to keep “family and school staff safe,” the “limited economic abilities” they had, and concern about possible quarantine or sickness that would impact them financially. Emotionally, a few parents felt that the children learning at home did not get the same attention as the students learning at school and that was leading to a lack of academic engagement. One parent said their child stayed engaged and that the school and teachers adjusted well. A few parents were passionate about the pressure to wear masks and the “cruelness of not allowing children to express their smile with peers.”

Finally, other areas about which parents expressed strong feelings dealt with the use of computer-based programs and the incorporation of such at home and at school. The majority mentioned that they preferred their child to “learn directly with an instructor with hands-on learning and multimedia instruction incorporated into lessons.” However, those parents managing at-home eLearning shared that “it has been difficult to be the one-to-one instructor, but that the staff and school have been supportive and
accommodating.” Parents suggested that it would be most beneficial if teachers did not have to simultaneously teach both classroom and remote learning.

Student Survey Findings

The second set of surveys went to students. Out of the 252 offered the opportunity to participate, 26 parents agreed to have their child take the survey and five children gave assent. These students shared their perspectives about their educational environment by responding to six survey statements. Each of the survey statements can be found in Appendix C.

As shown in Figure 12, students responded about their enjoyment of learning. The data indicated that 40% responded that they sometimes enjoyed learning and another 40% were neutral in their opinion. Additionally, 20% of students shared that they rarely enjoyed learning, and no student chose the options of all the time or not at all.

Figure 12

Results of Student Survey Statement 1: I Enjoy Learning

Note. N = 5. Student Survey Statement 1, responses to I enjoy learning.

In Student Survey Statement 2, I addressed students’ learning environment preferences. The survey statement responses indicated that of the five students, 100% of
them felt they learned best with classroom instruction directly from the teacher all the time.

As shown in Figure 13, students responded Survey Statement 3 regarding their preference for using computers as the best means to learn. Out of the five student respondents, no student chose the options “not at all” or “all the time.” However, 40% of the students stated they sometimes learned best with computer-based guidance, while 40% were neutral about computers as a source for learning. The remaining 20% felt that computers rarely helped with the learning process.

**Figure 13**

*Results of Student Survey Statement 3: I Learn Best Using Computers to Guide My Learning*

![Chart showing survey results]

*Note. N = 5. Student Survey Statement 3, responses to I learn best using computers to guide my learning.*

As shown in Figure 14, students responded to Survey Statement 4 about whether they learn best in a blended version for learning, using both computer-based and direct
teacher instruction. None of the five participants chose “not at all,” “rarely” or “all the time” as their level of preference. Yet, 60% stated they sometimes learned best with both direct teacher instruction and computer-based instruction; while 40% were neutral in their preference for the blended model of direct instruction and computer-based instruction.

**Figure 14**

*Results of Student Survey Statement 4: I Learn Best with Both Direct Teacher Instruction and Computer-based Instruction*

As shown in Figure 15, Student Survey Statement 5 addressed students’ responses to their ability to focus and be productive within the classroom and with computer-based technology. Responses included 40% of the students indicating that they can sometimes focus and get more work completed in the classroom while another 40% responded with the selection of neutral. There were 20% of student respondents who felt they rarely focused and got more work completed in the classroom.

*Note. N = 5. Student Survey Statement 4, responses to *I learn best with both with direct teacher instruction and computer-based instruction.*

As shown in Figure 15, Student Survey Statement 5 addressed students’ responses to their ability to focus and be productive within the classroom and with computer-based technology. Responses included 40% of the students indicating that they can sometimes focus and get more work completed in the classroom while another 40% responded with the selection of neutral. There were 20% of student respondents who felt they rarely focused and got more work completed in the classroom.
Figure 15

Results of Student Survey Statement 5: *I Feel I can Focus and Get More Work Completed in the Classroom*

As shown in Figure 16, the results of Student Survey Statement 6 indicated students’ perception of a computer-based program contributing to better focus and greater levels of work completion. No students selected “not at all” or “all the time.” There was an even split between “sometimes” and “neutral,” with 40% responding that sometimes they learned best with technology or computer-based programs and the other 40% were “neutral.” The remaining 20% felt they rarely focused and accomplished more work with technology or computer-based programs.
Figure 16

Results of Student Survey Statement 6: I Feel I Can Focus and Get More Work Completed When Learning with Technology or Computer-based Programs

Note. $N = 5$. Student Survey Statement 6, responses to I feel I can focus and get more work completed when learning with technology or computer-based programs.

Additional and optional student comments elicited responses from three students. One stated that they “loved being in the classroom with teachers.” Student 2 shared, “I enjoy both teacher-directed and computer-based learning, especially when teachers make learning more fun.” The last comment shared by Student 3 stated that they “found it easier to learn in the classroom rather than online; however, sometimes it was easier to focus online (eLearning) and computer-based where there were less distractions such as other students talking in the classroom.”

Teacher Survey Findings

The third set of surveys went to teachers. Out of the 12 teachers who offered to participate, 10 teachers responded to the survey. Approximately 83% of the teachers
shared their perspectives about their teaching practices and the educational environment. The teacher survey statements can be found in Appendix A.

As shown in Figure 17, teachers shared their preference for teaching in a traditional classroom setting. The outcome showed an even 50% split between all the time and sometimes. No teacher participant chose the options of not at all, rarely, or neutral.

**Figure 17**

*Results of Teacher Survey Statement 1: I Enjoy Teaching Students in a Classroom*

![Pie chart showing 50% for all the time and 50% for sometimes.]

*Note. N = 10. Teacher Survey Statement 1: responses to I enjoy teaching students in a classroom. The response counts were as follows: sometimes, 5; all the time, 5.*

Figure 18 shows the responses from teachers to Survey Statement 2 about their enjoyment level of instructing students using computer-based learning programs (CBL). The largest percentage of teachers, 70%, expressed that they “sometimes” enjoyed using CBL to assist with instruction. Only 10% shared that they enjoyed CBL all the time, while 20% indicated that they rarely enjoyed using technology to teach.
Figure 18

Results of Teacher Survey Statement 2: *I Enjoy Teaching Students Using Computer-Based Learning Programs*

Note. *N* = 10. Teacher Survey Statement 2: responses to *I enjoy teaching students using computer-based learning programs*. The response counts were as follows: all the time, 1; rarely, 2; sometimes, 7.

As shown in Figure 19, teachers indicated their confidence level and perceptions concerning their enjoyment of using CBL in the classroom. Responses indicated that 40% of teachers were always confident when using CBL, while 30% were sometimes confident. The other 20% selected the response of neutral to the statement and 10% were rarely confident. No teacher chose *not at all* as their level of confidence when using CBL for student learning.
**Figure 19**

*Results of Teacher Survey Statement 3: I Am Confident When Using Computer-based Learning Programs to Guide Student Learning*

Note. *N* = 10. Teacher Survey Question 3, responses to *I am confident when using computer-based learning programs to guide student learning*. The response counts were as follows: all the time, 4; sometimes, 3; neutral, 2; rarely, 1.

As shown in Figure 20, the data addressed teacher preference to guide instructional decisions with CBL programs in mind. The table shows that 50% of teachers sometimes preferred to use computers while teaching and 20% were neutral. Another 20% selected rarely, and 10% chose not at all.
Figure 20

Results of Teacher Survey Statement 4: I Prefer Using Computer-Based Learning Programs to Guide My Instruction

Note. N = 10. Teacher Survey Statement 4, responses to I prefer using computer-based learning programs to guide my instruction. The response counts were as follows: all the time, 0; rarely, 2; sometimes, 5; neutral, 2; not at all, 1.

As shown in Figure 21, teachers related to their level of certainty about direct instruction methods without the use of CBL as a preferred method of teaching. The responses indicated that 50% of teachers were neutral in their opinion about teaching without any CBL. While 20% preferred to use CBL rarely and 20% preferred to use CBS all the time as a method of instruction. In addition, 10% of teachers chose sometimes prefer to teach without CBL.
Figure 21

Results of Teacher Survey Statement 5: Direct Instruction, Without Computer-Based Learning Programs, Is My Preferred Method of Teaching

Note. $N = 10$. Teacher Survey Statement 4, responses to direct instruction without computer-based learning programs is my preferred method of teaching. The response counts were as follows: all the time, 2; sometimes, 1; neutral, 5; rarely, 2; not at all, 0.

As shown in Figure 22, teachers addressed their levels of agreement concerning whether learning outcomes are higher when students are exposed to direct instruction alone without the use of computer-based programs. The responses from the teachers were split between sometimes at 40% and rarely at 40%. There was an additional split between neutral and not at all, both at 10%.
Figure 22

Results of Teacher Survey Statement 6: Learning Outcomes Are Higher When Students Are Exposed to Direct Teacher Instruction Alone Without Computer-Based Learning Programs

Note. $N = 10$. Teacher Survey Statement 6, responses to learning outcomes are higher when students are exposed to direct teacher instruction alone without computer-based learning programs. The response counts were as follows: all the time, 0; sometimes, 4; neutral, 1; rarely, 4; not at all, 1.

As shown in Figure 23, Teacher Survey Statement 7 addressed whether teachers planned lessons with computer-based learning programs as their main source or guide. This would imply that core curriculum teacher guides were not the source or guide for planning purposes. The majority of teachers, 40%, responded with the selection of sometimes. The rate of the selection of the option rarely was 30%. The remainder of the options, not at all, neutral, and all the time, were each selected by 10% of the participants.
Figure 23

Results of Teacher Survey Statement 7: I Lesson Plan Classroom Instruction with Computer-Based Learning Programs as a Main Source/Guide

Note. \( N = 10 \). Teacher Survey Statement 7, responses to I lesson plan classroom instruction with computer-based learning programs as a main source/guide. The response counts were as follows: all the time, 1; sometimes, 4; neutral, 1; rarely, 3; not at all, 1.

As shown in Figure 24, teachers shared whether they planned lessons with the use of computer-based learning programs and adopted curriculum resources. Among the participants, 50% stated they sometimes used both curriculum resources and computer-based programs. In addition, 40% of the teachers said they did so all the time. An additional 10% of the teachers responded that they felt neutral in regards to using both resources to lesson plan.
Figure 24

Results of Teacher Survey Question 8: Planning Lessons for Classroom Instruction Using Computer-based Learning Programs and Adopted Curriculum Resources

Note. N = 10. Teacher Survey Statement 8: responses to the statement, I plan classroom instruction using computer-based learning programs and adopted curriculum resources. Responses by count: all the time, 4; sometimes, 5; neutral, 1.

As shown in Figure 25, teachers responded to whether they preferred direct instruction without computer-based learning as their method of planning. Those who responded that it was rarely their method of planning were 40%. Further, 30% said they were neutral in their opinion about direct instruction without computer-based learning to assist with planning. The other 20% shared that they sometimes only used direct instruction core curriculum while planning while 10% (1) said they used only direct instructional materials all the time.
Figure 25

Results of Teacher Survey Question 9: Direct Instruction without Computer-Based Learning Program Is My Preferred Method of Planning

Note. N = 10. Teacher Survey Statement 9, responses to direct instruction without computer-based learning program is my preferred method of planning. Responses by count: all the time, 1; sometimes, 2; neutral, 3; rarely, 4; not at all, 0.

As shown in Figure 26, teachers shared personal perceptions of the blended method. This statement prompted teacher preference for teaching with a blended method consisting of direct instruction and computer-based programs. The response was that 60% said they do so all the time, while 30% shared they sometimes teach with the blended method. Only 10% indicated not at all.
Figure 26

Results of Teacher Survey Question 10: I Prefer Teaching with Blended Method of Direct Instruction and Computer-Based Programs

Note. \(N = 10\). Teacher Survey Statement 10, responses to I prefer teaching with a blended method of direct instruction and computer-based programs. Responses by count: all the time, 6; sometimes, 3; not at all, 1.

Additional and optional comments related to the survey statements provided four open responses. Teachers, in general, spoke specifically to the integration of computer-based programs in their classrooms. There were three out of the four responses that candidly shared the experience of programs supporting their instruction. Most teachers felt there was merit, but all saw the importance of connecting to students and working directly with them for better learning outcomes. One instructor stated “Incorporating computer-based instruction can be beneficial if it is adapted to student needs and resources are provided to meet implementation success (i.e., access to multiple labs, functioning, and up-to-date computers or tablets).” Additionally, some mentioned the importance of working alongside “a qualified technology instructor.” I found this last
comment to be aligned with the responses from many of the instructors with whom I collaborated through my research:

Interaction between students and between student(s) and the teacher is an invaluable process for students. Purposeful discussion between these entities can lead to greater outcomes than expected. I prefer the majority of content be delivered in the classroom the majority of the time. Computer-based curriculum can provide individual differentiated instruction for those students needing extra practice and those needing additional higher-order thinking curriculum.

**Achieve3000® Academic Report and Data Findings**

The individualized data provided by the computer-based curriculum, Achieve3000®, implemented by the school with students who were part of this study included data charts provided for school level review. These charts highlighted an average Lexile growth from August or September 2020 until March 2021. Each chart identified whether a student using the adaptive computer-based program was working remotely, within a teacher-directed classroom setting, or within a blended setting. Those students in the classroom setting used computer-based programs to assist in the learning process, while the remote learners relied on computer-based programs with remote guidance from a teacher.

One way to determine grade-level text and readability is by Lexile level. Achieve3000® uses Lexile scales to measure the difficulty and complexity of a text and then establishes a child’s current reading level (Doman, n.d.). The values in each data point from the Achieve3000® reports presented below represent the total growth of all students’ Lexile levels within an instructional modality subcategory, eLearning and
traditional. The averages represent the total Lexile levels divided by the number of students within the specific subcategory. Therefore, the average growth number represents the Lexile level increase within that subcategory. These data include all students in the Exceptional Student Education (ESE) program and English Language Learners and are embedded into remote as well as eLearning instructional options.

In Figure 27, I depicted Lexile growth achievement outcomes for the second graders in a traditional brick and mortar environment and those who opted for an eLearning instructional delivery option, a blended learning model. The Achieve3000® data shows that the students advanced an average of 59 Lexile points from September to March while the same second-grade class members who opted for the remote eLearners modality increased on average 76 Lexile points from September to March.

**Figure 27**

*Second Grade Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth*

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Average Lexile Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>76%</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>59%</td>
</tr>
</tbody>
</table>

*Note. N = 41. Second-grade students’ average Lexile growth by eLearning and traditional instruction as reported by the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, *How has Lexile Reading Measure Performance Changed Over Time.* (Achieve3000®, August 2020 - March 2021)*

In Figure 28, I showed that the third graders’ Achieve3000® performance in traditional brick and mortar context increased by 81 Lexile points from September to March while eLearners who were remote students had an increase of 62 Lexile points within the same timeframe.
Figure 28

Third Grade Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Average Lexile Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>62</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>81</td>
</tr>
</tbody>
</table>

Note. N = 37. Third-grade students’ average Lexile growth by eLearning and traditional instruction as reported by the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, How has Lexile Reading Measure Performance Changed Over Time. (Achieve3000®, August 2020 - March 2021)

In Figure 29, I presented the fourth graders’ Achieve3000® data who were instructed in traditional brick and mortar setting. The students’ academic growth increased 72 Lexile points from September to March while eLearning remote students had an increase of 84 Lexile points within the same timeframe.

Figure 29

Fourth Grade Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Average Lexile Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>84</td>
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<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>72</td>
</tr>
</tbody>
</table>

Note. N = 45. Fourth-grade students’ average Lexile growth by eLearning and traditional instruction as reported by the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, How has Lexile Reading Measure Performance Changed Over Time. (Achieve3000®, August 2020 - March 2021)

In Figure 30, I exhibited fifth graders’ Achieve3000® data demonstrating that the traditional brick and mortar students’ academic growth increased 15 Lexile points from
September to March while eLearning remote students had an increase of 62 Lexile points within the same timeframe.

**Figure 30**

Fifth Grade Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Average Lexile Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>63</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>15</td>
</tr>
</tbody>
</table>

*Note. N = 27. Fifth-grade students’ average Lexile growth by eLearning and traditional instruction as reported in the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, How has Lexile Reading Measure Performance Changed Over Time. (Achieve3000®, August 2020 - March 2021)*

In Figure 31, I showed that sixth graders’ Achieve3000® data indicated that traditional brick and mortar students increased their Lexile levels by 74 Lexile points from September to March while eLearning remote students increased 130 Lexile points within the same timeframe.

**Figure 31**

Sixth Grade Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Average Lexile Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>130</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>74</td>
</tr>
</tbody>
</table>

*Note. N = 28. Sixth-grade students’ average Lexile growth by eLearning and traditional instruction as reported by the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, How has Lexile Reading Measure Performance Changed Over Time. (Achieve3000®, August 2020 - March 2021)*
In Figure 32, I provided average Lexile growth for seventh graders from the Achieve3000® report showing that both the eLearners and traditional learners advanced equally by 83 Lexile points from September to March.

**Figure 32**

*Seventh Grade Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth*

<table>
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<tr>
<th>Instructional Delivery</th>
<th>Average Lexile Growth</th>
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</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>83</td>
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<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>83</td>
</tr>
</tbody>
</table>

*Note. N = 37. Seventh-grade students’ average Lexile growth by eLearning and traditional instruction as reported by the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, *How has Lexile Reading Measure Performance Changed Over Time*. (Achieve3000®, August 2020 - March 2021)*

In Figure 33, I presented the eighth graders’ Achieve3000® average Lexile growth data. eLearners advanced by 56 Lexile points while the traditional students increased substantially by 90 Lexile points.

**Figure 33**

*Eighth Grade Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth*

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Average Lexile Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>56</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>90</td>
</tr>
</tbody>
</table>

*Note. N = 36. Eighth-grade students’ average Lexile growth by eLearning and traditional instruction as reported by the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, *How has Lexile Reading Measure Performance Changed Over Time*. (Achieve3000®, August 2020 - March 2021)*
In Figure 34, I showed the second through eighth-grade average Lexile growth from September to March. Overall, the eLearners increased by 79 Lexile levels while the traditional brick and mortar students increased by 68 Lexile levels; this is a difference of 11 Lexile points.

**Figure 34**

*Schoolwide Achieve3000® Data September 2020 to March 2021: Comparison of Instructional Delivery Modality and Average Lexile Growth*

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Average Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>79</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>68</td>
</tr>
</tbody>
</table>

*Note.* N = 251. Schoolwide second through eighth-grade students’ average Lexile growth by eLearning and traditional instruction as reported by the Achieve3000® data center in the proprietary, school-personnel accessible, data set titled, *How has Lexile Reading Measure Performance Changed Over Time.* (Achieve3000®, August 2020 - March 2021)

**2021 State Assessment Report and Data Findings**

State accountability assessment data quantifies each child’s summative outcomes in grades 4-8. The data presented here represent students’ performance on the English Language Arts (ELA) portion of the state assessment. I disaggregated them by grade level and proficiency levels and include the total number of students within a specific level. Each data point is identifiable through 5 different levels of proficiency that are based on the state rankings to determine student performance: level 5 = mastery, level 4 = proficient, level 3 = satisfactory, level 2 = below satisfactory, and level 1 = inadequate. Levels 1 and 2 are considered at risk and low level, while levels 3 through 5 are considered at or above grade level, and therefore proficient.

Looking at each level of achievement (L1- L5), I sorted the data by achievement
levels and again arranged, like the Achieve3000® data, into categories of instructional learning modalities, eLearning and traditional brick and mortar. I arranged the data by grade level and presented only those students who were considered proficient by means of scoring a level 3 or higher.

In Figure 35, I showed the percentage of proficient students among the 45 fourth graders enrolled in the school, who participated in the state standards assessment. Of the 45, there were 23 who enrolled as eLearners, and 22 attended a traditional school setting, brick-and-mortar. The average proficiency of the 23 students in eLearning was 39% while the traditional brick-and-mortar was 32%.

**Figure 35**

*Fourth Grade 2021 State Assessment Average Proficiency: Comparison of Instructional Delivery Modality*

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>% of students who were proficient (L3-L5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>39.13%</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>31.82%</td>
</tr>
</tbody>
</table>

*Note. N = 45. Percentage of fourth-grade students proficient at or above level 3, in ELA by instructional choice for 2021 school year as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)*

In Figure 36, I showed the proficiency percentage of 27 fifth graders enrolled in the school, who participated in the state standards assessment. Of the 27, there were nine enrolled as eLearners, and 18 attended a traditional setting classroom, brick-and-mortar. The average proficiency of those 27 students in eLearning was 67% while the traditional brick-and-mortar was 22%
**Figure 36**

*Fifth Grade 2021 State Assessment Average Proficiency: Comparison of Instructional Delivery Modality*

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>% of students who were proficient (L3-L5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>66.67%</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>22.22%</td>
</tr>
</tbody>
</table>

*Note. N = 27. Percentage of fifth-grade students proficient at or above level 3, in ELA by instructional choice for 2021 school year as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)*

In Figure 37, I showed the proficiency percentages of the 27 sixth graders enrolled in the school, who participated in the state standards assessment, by instructional delivery choice. Of the 27, there were 14 enrolled as eLearners, and the other 13 in a traditional setting classroom, brick-and-mortar. The average proficiency of the 27 students in eLearning was 36% while the traditional brick-and-mortar was 46%.

**Figure 37**

*Sixth Grade 2021 State Assessment Average Proficiency: Comparison of Instructional Delivery Modality*

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>% of students who were proficient (L3-L5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>35.71%</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>46.15%</td>
</tr>
</tbody>
</table>

*Note. N = 27. Percentage of sixth-grade students proficient at or above level 3, in ELA by instructional choice for 2021 school year as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)*

In Figure 38, I showed the proficiency levels of 38 seventh graders enrolled in the school who participated in the state standards assessment. Of the 38, there were 18
enrolled as eLearners, and the other 20 attended a traditional school setting, brick-and-mortar. The average proficiency of those 38 students in eLearning was 50% while the traditional brick-and-mortar was 45%.

**Figure 38**

*Seventh Grade 2021 State Assessment Average Proficiency: Comparison of Instructional Delivery Modality*

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>% of students who were proficient (L3-L5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>50.00%</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>45.00%</td>
</tr>
</tbody>
</table>

*Note. N = 38. Percentage of seventh-grade students proficient at or above level 3, in ELA by instructional choice for 2021 school year as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)*

In Figure 39, I showed the proficiency of 32 eighth graders enrolled in the school who participated in the state standards assessment. Of the 32, there were 15 enrolled as eLearners, and the other 17 were attending traditionally in brick-and-mortar classrooms. The average proficiency of those 15 students in eLearning was 53% while the average proficiency of the students in traditional brick-and-mortar classrooms was 41%.
Figure 39

Eighth Grade 2021 State Assessment Average Proficiency: Comparison of Instructional Delivery Modality

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>% of students who were proficient (L3-L5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>eLearning INSTRUCTIONAL DELIVERY</td>
<td>53.33%</td>
</tr>
<tr>
<td>TRADITIONAL (BRICK AND MORTAR) INSTRUCTIONAL DELIVERY</td>
<td>41.18%</td>
</tr>
</tbody>
</table>

*Note. N = 32. Percentage of eighth-grade students proficient at or above level 3, in ELA by instructional choice for 2021 school year as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)*

**Historical and Present State Assessment Outcomes**

The data points presented in Figure 40 show the fifth grade English Language Arts (ELA) state assessment data from 2019 compared to the 2021 state assessment outcomes by proficiency levels. These levels of proficiencies do not reflect the exact same group of children. The school’s mobility rate varies between 30-40% any given year. My purpose for presenting these data is to display the challenges the 2020-2021 school year brought to student instruction and academic success. The 2019 data are “pre-pandemic” while the 2021 data represents “pandemic” outcomes. These data do not represent any student gains on which the school typically relies to demonstrate levels of student achievement.

Figure 40 provides the state data for grades 5-8 as a total count for each achievement level, as determined by the state. Upon reorganizing the data at each grade level, I considered numbers of proficient students as that is how the state presents data in the data portal for all five levels. The data here show the number of students who were proficient in the pre-pandemic year 2019 and the number who were proficient in the 2021
pandemic year to provide a cross-articulation of data. The data I presented starts at fifth grade because in 2019 education leaders did not assess students statewide; therefore, grades third through fourth would not have comparable assessments.

I examined the data points are for reliability from one year to another and explored consistency in measures. Data are presented by count for validity since the number of enrollments in each grade level differs, and there were only two classes in each grade level which minimized accuracy of the percentage rate for comparison. Additionally, historically when working with state percentages they may not always add up to 100 due to state report rounding.

In Figure 40, I exhibited the fifth graders’ two-year comparison data with an enrollment difference of two and a proficiency difference of two from 2019 and 2021 school year. The proficiency is greater for eLearners than brick-and-mortar in year 2021; however, in 2019 there were more students proficient than in 2021, accounting for the two students added to enrollment in 2021. The students performing below level or in the not proficient range increased by three students in the 2021 school year.
Figure 40

Fifth Grade Two-Year Comparison of Proficiency Levels: 2019 and 2021 School Years

Note. Two years count of total tested and total proficient fifth graders by state ranking levels 1-5 as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)

In Figure 41, I presented a two-year comparison of sixth-grade scores that showed an enrollment difference of three students and a proficiency difference of four from 2019 to 2021. The proficiency was greater in 2019; however, these data do not account for the increased enrollment of three students. In the data, I also included a larger number of struggling students in 2021 than in 2019 with six total students.

<table>
<thead>
<tr>
<th>Achievement Level</th>
<th>eLearning Count</th>
<th>Traditional Brick and Mortar Count</th>
<th>Grade Level Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA LEVEL 1</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>SSA LEVEL 2</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>SSA LEVEL 3</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>SSA LEVEL 4</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>SSA LEVEL 5</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total Proficient</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td># Tested</td>
<td>9</td>
<td>18</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACHIEVEMENT LEVEL IN SPRING 2019</th>
<th>Performance Level Count</th>
<th>Total Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA LEVEL 1</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>SSA LEVEL 2</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>SSA LEVEL 3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SSA LEVEL 4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>SSA LEVEL 5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total Students Tested</td>
<td>25</td>
<td>Total Proficient</td>
</tr>
</tbody>
</table>
Figure 41

*Sixth Grade Two-Year Comparison of Proficiency Levels: 2019 and 2021 School Years*

<table>
<thead>
<tr>
<th>2021 Sixth Grade State Assessment Performance Level: Counts by Instructional Delivery</th>
<th>Count</th>
<th>Grade Level Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement Level</td>
<td>eLearning</td>
<td>Traditional Brick and Mortar</td>
</tr>
<tr>
<td>SSA LEVEL 1</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>SSA LEVEL 2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>SSA LEVEL 3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>SSA LEVEL 4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>SSA LEVEL 5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total Proficient</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Total Tested</td>
<td>14</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2019 Sixth Grade State Assessment Performance Levels: Count by Class</th>
<th>Performance Level Count</th>
<th>Total Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACHIEVEMENT LEVEL IN SPRING 2019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSA LEVEL 1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>SSA LEVEL 2</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>SSA LEVEL 3</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>SSA LEVEL 4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>SSA LEVEL 5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total Students Tested</td>
<td>24</td>
<td>Total Proficient 15</td>
</tr>
</tbody>
</table>

*Note.* Two years count of total tested and total proficient sixth graders by state ranking levels 1-5 as reported in the state department assessment portal. (citation withheld to maintain anonymity)

In Figure 42, I presented data to demonstrate seventh graders’ two-year comparison with an enrollment difference of three students and a proficiency difference of seven as compared from 2019 to 2021. The proficiency was significantly greater in the 2019 school year; however, the data do not account for the increased enrollment of seven students. In the figure, I also included a minimal difference of struggling students in 2021 compared to 2019 by one student.
Figure 42

Seventh Grade Two-Year Comparison of Proficiency Levels: 2019 and 2021 School Years

Note. Two years count of total tested and total proficient seventh graders by state ranking levels 1-5 as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)

In Figure 43, I presented data to demonstrate eighth graders’ two-year comparison that showed an enrollment difference of six students from 2019 to 2021 with the latter being higher in enrollment. The proficiency difference was three students from 2019 to 2021. The proficiency was significantly greater in the 2021 school year; however, data did not account for the increased enrollment of six students. I also included a difference of struggling students with four more in 2019 than in 2021.
Figure 43

Eighth Grade Two-Year Comparison of Proficiency Levels: 2019 and 2021 School Years

<table>
<thead>
<tr>
<th>Achievement Level</th>
<th>eLearning Count</th>
<th>Traditional Brick and Mortar Count</th>
<th>Total Grade Level Totals Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA LEVEL 1</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>SSA LEVEL 2</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>SSA LEVEL 3</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>SSA LEVEL 4</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>SSA LEVEL 5</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total Proficient</td>
<td>8</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Total Tested</td>
<td>15</td>
<td>17</td>
<td>32</td>
</tr>
</tbody>
</table>

2019 Eighth Grade State Assessment Performance Levels: Count by Class

<table>
<thead>
<tr>
<th>Achievement Level in Spring 2019</th>
<th>Performance Level Count</th>
<th>Total Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA LEVEL 1</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>SSA LEVEL 2</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>SSA LEVEL 3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SSA LEVEL 4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>SSA LEVEL 5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total Students Tested</td>
<td>26</td>
<td>Total Proficient 12</td>
</tr>
</tbody>
</table>

Note. Two years count of total tested and total proficient eighth graders by state ranking levels 1-5 as reported in the state department assessment portal. (Citation withheld to maintain confidentiality)

The data provoked further thought on how educators attempted to objectively collect student data and complete academic report cards. When educators see such variation between different sources, they are faced with the unintentional consequence of reporting a child’s will vs. their academic ability. This causes educators to wonder about the child’s true academic ability over their will to maintain stamina and complete an assignment or task. Teachers and leadership teams have responsibility to analyze multiple sources of data over time; therefore, it is possible that this theory of ability versus will subjectively altars final academic outcomes thus causing concern regarding promotion,
retention, graduation rate, and so on.

Furthermore, there were significant differences from the teacher, parent, and student surveys that showed discrepancies in the relationship between academic outcomes and the desired learning environment. Exploring the four arenas of change (Wagner et al., 2006), I addressed the theory of how one can control their personal academic outcomes and influence their drive to learn, *ability vs will*. Each survey statement addressed one of the four arenas of change.

**Contexts**

The economic skills demand placed on education involves students meeting the needs of the state’s ambition to be globally prepared. Determining what all students need in order to excel as learners and citizens is significant to research (Wagner et al., 2006). To shape the work done by educators, schools are guided by local and state demands that are skills-based or systems-based. Accountability 2020 state statutes pronounced, “each district school board shall establish a comprehensive plan which must provide a student’s progression from one grade to another correlated to a student’s mastery of the standards specifically in English Language Arts” Citation withheld to protect confidentiality). Often, stakeholders are brought together in a forum to create organizational systems with which demands and expectations are set for formal or informal measurements (Wagner et al., 2006).

I took into consideration the mandates mentioned above when developing the survey statements I presented to parents, students, and teachers. To help analyze possible cultural, political, economic, or educational factors that deeply impact external variables, I posed the following research question: To what extent does instruction through adaptive
technology impact student learning outcomes? This contextual research question for my study directly relates to the following survey statements used to obtain preference, opinion, and interpretation of stakeholders’ perception of the impact experienced by the change from direct instruction to blended computer-based learning.

The teacher survey showed that the majority of statements related to context resulted in response rates of 40-50% indicating that they sometimes used computer-based lesson planning. Most teachers planned lessons with the computer-based learning program as their main source of instruction at a rate of 40%, while 30% did so rarely. Teachers who planned lessons incorporating both computers and core curriculum averaged 50% responses of *sometimes* and 40% indicating *all the time*. These results demonstrated that there was no one preferred way to plan lessons based on assigned curriculum or program. Additionally, the comfort levels for the type of instructional planning differed from teacher to teacher. These differences need a stronger analysis using competency questions to probe into teacher planning comfort and self-efficacy.

The parent survey questions and statements that were context-based showed outcomes ranked erratically between neutral, agree, and disagree. There were differences related to external factors impacting parents’ perspectives. Survey results regarding a child’s engagement during the innovative learning environment and the computer-based program showed 37% neutral and 29% strongly disagree making up 66% of the total responses. Responses to the survey question regarding teacher interactions with blended learning methods were inconsistent as 24% of respondents agreed with the statement, 21% disagreed, and another 21% were neutral making up 66% of those surveyed. There were unintended consequences during the pandemic school year related to this survey
question as families interpreted teachers’ interactions by what they heard, and not what
they saw occur in the classroom. The students’ ability to use appropriate eLearning
interactions and parental judgments on what was occurring in the classroom impacted
contextual perceptions.

Additional context questions I asked parents addressed the helpfulness of the
computer-based lessons assigned and preparedness for future eLearning options at home.
Once more, the outcome was inconsistent with 27% of families disagreed about being
prepared for more innovative learning options, 21% agreed with the statement, and
another 21% were neutral. However, in regard to the statement around the computer-
based programs and lessons assigned to children being helpful and appropriate, the
results were more consistent as 29% of respondents agreed, 21% strongly agreed, and
18% were neutral making up 68% of those who responded.

Culture

I examined the cultural values and beliefs among stakeholders in this research
through survey questions to students, parents, and teachers with key phrases such as: “I
enjoy” and “I like.” Through this research, I analyzed the behaviors related to student
learning and teaching as well as the relationships as they pertained to the school programs
and learning environment (Wagner et al., 2006, p. 129). I centered on of my research
question on culture: How do children and their parents or guardians feel about direct
computer-based learning, direct classroom instruction, or a blended method for learning?

According to the data, students differed in opinions on how they enjoyed learning.
There were equal outcomes among those who sometimes “enjoyed learning” (40%) and
those neutral to the statement (40%) making up 80% of respondents. This outcome was
interesting when compared with parents who responded to the survey statement: My child enjoys innovative learning. Among the respondents, 34% strongly agreed, 19% strongly disagreed, and 18% disagreed totaling 71% of all responses. Pertaining to instruction, parents expressed a likeness for the computer-based programs and activities as 29% agreed with the statement. However, in opposition, 21% disagreed and 18% were neutral to liking the computer-based programs, making up 69% of respondents.

Teacher survey questions related to culture pertained to the educator’s enjoyment for teaching with computer-programs (CBL). Responses were 70% “all the time” and 20% “rarely.” This indicated significant agreement among the participants, but it may denote a need for professional development to build self-efficacy among the 20% who indicated they rarely enjoy teaching with CBL. This teacher outcome data may relate to a growth mindset and culture held individually in order for one to engage and collaborate in a purposeful system (Wagner et al., 2006, p. 113).

I found each stakeholder group’s data points to be variable and contradictive. Those respondents who strongly agreed or strongly disagreed with any given statement differed 51% of the time. This indicated the importance of understanding how each person might have felt and their level of competency pertaining to a CBL culture. The discrepancy among respondents, along with differences in their comments, alluded to stakeholders feeling that they had no other choice but to learn from home due to the pandemic. That quick decision and local plans to implement innovative learning environments made the transition difficult; especially as it denied teachers the opportunity to gradually release the learning into innovative areas or explore ways to manage the changes for families and educators.
Conditions

The overarching research question in this study related to conditions was: To what extent do student attitudes towards computer-based instruction impact student achievement? I examined statements from surveys and analyzed conditions that surrounded student learning and encompassed roles, responsibilities, and goals. The data I collected provided parent, student, and teacher statements that spoke to what was best, and what was preferred pertaining to resources, space, and time (Wagner et al., 2006, p. 127).

The parents’ surveys indicated that the majority preferred their child to learn in a classroom with a certified teacher with a 71% rate of agreement. In another question related to conditions I asked parents to address if they would prefer their child to learn in a hybrid option (at home and at school) over at school in a classroom all the time; 37% of respondents were neutral and 29% disagreed. The neutral to disagreement outcomes encompassed 66% of those parents surveyed. It seemed the rush to innovate and blend the learning had a direct impact on how statements were ranked in regard to best academic outcomes and best learning environments.

I aligned several questions on the student survey to their conditions for learning. One hundred percent of students indicated they learned best with classroom instruction directly from the teacher. In addition, 80% of students felt they sometimes (40%) or were neutral (40%) about learning best when using computers to guide learning. Additionally, most students were sometimes in agreement 60% or neutral 40% about learning with a blended model (both direct instructional and computer-based program). My extant quantitative data did not support the survey data. In both the Achieve3000® and State
Standards Assessment (SSA), eLearners showed more academic achievement. Achieve3000® eLearners performed better than the students in a brick and mortar environment in four out of seven grade levels. The SSA data demonstrated eLearning achievement and better proficiency for four out of the five grade levels.

Teacher conditions related to this research addressed programs, space, and time. In analyzing the preferred method of teaching, I noted that educators aligned a little closer to the extant data where those who preferred teaching with a blended method of direct instruction and computer-based programs met 60% agreement. Furthermore, when asked if using computer-based learning programs to guide their instruction, teachers agreed to this statement 50% as sometimes in agreement while the other 50% fell within the other three areas of agreement (rarely, neutral, or not at all). Yet, when asked if they preferred direct instruction without computer-based learning programs the agreement to this statement was 50% neutral with the other areas of all the time, sometimes, and rarely fell within 20% or lower. At no time were there any clear agreement or disagreement to the statement that aligned to conditions on the teacher survey.

Competencies

One primary research question addressed the competencies that impact academic achievement: Do students exposed to a blended learning model with direct instruction and adaptive technology have greater learning outcomes than those exposed to direct instruction alone? Through analyzing the primary and secondary research questions, I gained a better understanding of the hard and soft skills that reflect technical, social, and leadership competency (Wagner et al., 2006). To effectively understand the impact of
student learning and high-quality instruction, I analyzed teachers’ and students’ statements regarding blended learning.

A secondary research question that aligned to the reflective soft skill set was: To what extent do teacher preferences and their ability to implement blending instruction impact student achievement? I addressed this research question in the survey statement to teachers that said: Learning outcomes are higher when students are exposed to direct teacher instruction alone without computer-based learning programs. The results of this survey statement were 40% sometimes, 40% rarely, 10% neutral, and 10% not at all. Once more this was direct opposition with the extant data that quantified children did indeed learn with computer-based programs and not by the teacher alone. Yet in response to the survey statement: I am confident when using computer-based learning programs to guide student learning, 40% of teachers stated, “all the time” with another 30% choosing “sometimes.”

Additional survey statements that aligned with the research question related to competencies were addressed in student surveys. The student survey statement: I feel I can focus and get more work completed when learning with technology or computer-based program showed 40% of participants chose sometimes, and another 40% chose neutral. Additionally, the statement: I feel I can focus and get more work completed in the classroom showed the exact same outcome as 40% of participants chose sometimes and 40% chose neutral. This social side of competencies raised a concern about whether students were aware of how they learn or sustain the will to learn, and the different ways computer-based blended models support their academic abilities.
Interpretation

The qualitative and quantitative data in my study show discrepancies between what stakeholders believed or felt was best and what achievement data showed was working. In analyzing eLearners’ performance compared to students in traditional brick and mortar learning environments, there was significant statistical data showing that eLearners demonstrated 57% more achievement than their counterparts in brick and mortar learning environments. This same outcome occurred when I analyzed extant data where from SSA achievement and proficiency as eLearners outperformed students in brick and mortar environments 80% of the time. The achievement outcomes did not align with each stakeholders’ personal perceptions or opinions, as 70% or more respondents stated they preferred traditional teaching methods over computer-based remote learning.

One possible reason for this discrepancy lay within the lack of purposeful choice for families as options mainly focused on safety and health versus academic modality and achievements. Many families may have decided on a learning environment based on fear, as stated in the comments, or out of necessity. There may have been skewed data due to the coinciding pandemic during this research and data collection. Outcomes limited the focus from achievement and blended instructional options to innovative learning environment components that may have impacted perspectives, preparedness, and intentional decision making.

According to Patton (2008), the significance of the data collected in research has direct reflection to the summative decisions. I used summative judgment to explore blended models that are intentional for a child’s ability and will to learn based on these
interpretations; thus, influencing my decision to propose blended learning with computer-based instruction innovatively as a parents’ educational choice option.

Judgments

The overarching research question in this study was: To what extent does instruction through adaptive technology impact student learning outcomes? The results were contradictory as they pertained to extant data and participant surveys. The individuals who engaged in the survey process preferred traditional face-to-face instruction over computer-based models. Half of the participants were neutral about blended instructional options being effective for learning. This outcome did not follow the summative data that revealed student achievement was increased on average 60% more when learning occurred with the support of computer-based blended instruction. The contrast in data was evident among all participant group surveys: parents, teachers and students.

I asked parents: Do students exposed to a blended learning model through direct instruction and adaptive technology have greater learning outcomes than those exposed to direct instruction alone? The answers to this question showed neutral to unclear outcomes with most participants not in agreement. There were differences in the preference to innovatively teach and confusion as to how that pertained to blended learning. However, most parent statements were neutral to incorporating computer-based learning while teachers felt computer-based programs were not a determining factor for achievement. However, the majority of teachers felt confident when using computer-based learning programs; which led to my curiosity around professional development and Gordon’s
Ladder regarding teachers being unconsciously unskilled or consciously unskilled (Adams, 2019).

The overall interpretation as to what extent teacher preferences and their ability to implement blending instruction impact student achievement was unclear. Once more, the pandemic added challenges with this interpretation and research questions. While many saw benefits to computer-based blended learning, it seemed a good portion of participants in my study were not in agreement with how or when. When analyzing the planning for instruction 50% of teachers I surveyed preferred without computer-based programs, yet 40% were confident using the programs. Through this research, I found that the definition of blended varied and the common language to build capacity with both face-to-face and computer-based instruction was uncertain and uncomfortable. The data showed that comparing teachers’ confidence and beliefs to implement blended learning methods just did not add up.

The final research questions geared toward students was: How do children and their parents or guardians feel about direct computer-based learning, direct classroom instruction, or a blended method for learning, and to what extent do student attitudes towards computer-based instruction impact student achievement? These questions added value when the majority of parents and students chose sometimes or neutral with the aligned survey questions. On average 40-50% of these stakeholders found usefulness for computer-based programs, but perhaps did not completely see the value of the blended model. When I offered agreement statements around traditional face-to-face learning or computer-based programs, student participants chose traditional at a rate of 70-80%.
When I asked about blended learning methods, their statement responses fell between 10-20%.

**Recommendations**

I propose a policy that requires every student in every public school across the state to have an opportunity to be part of an instructional delivery model where blended learning occurs for each core subject in kindergarten through twelfth grade. Based on the data analysis and extant data outcomes, it appears that families will benefit from a choice that is intended for academic achievements. The policy will be made of two components that will address student learning and teacher assignments.

I suggest creating a system addressing policymakers as well as instructional leaders or board members around ways to pre-measure students’ choice for an academic environment that supports a child’s will and impact their ability to learn. Taking ownership for learning through an exploratory approach with a mixture of face-to-face and computer-based programs will expand and sustain academic achievements. The approach of using computer-based programs to build skills that adapt to a child’s foundational needs will create flexible learning without disruption. In addition, if the computer-based programs can measure, record, and control individual assignments, then the face-to-face model can sustain the learning through hands-on interactions and collaboration to build capacity.

The policy will effectively address the pedagogical and andragogical balances to instruct the whole child. Teachers assigned to classroom instruction will have more flexibility in their assignments to explore themes, standards, and skills. While those supporting the computer-based program to blend the learning will ensure smooth
transitions, proper reporting, summative outcome data, and alternative assignments within the various learning environments.

**Conclusion**

In conclusion, I analyzed the data I collected to determine the effects of blended learning on student achievement within various learning environments. I found that the use of computer-based programs was more effective for summative learning outcomes. However, there were contradictions between the extant data I collected from Achieve3000® and the State Standards Assessments when compared to the survey data I collected from teachers, parents, and students. Yet, all were open to the idea of blending the learning to enhance student achievement. Stakeholders should consider the balance of both computers and direct instruction to expand and sustain learning. Additionally, teachers need to explore alternative ways to teach so that learning is equitable for all. In Chapter 5, I will develop this theory as it relates to the Four Cs of organizational change (Wagner et al., 2006).
Chapter Five: To-Be Framework

My program evaluation on the effectiveness of academic achievements when different learning environments were implemented, and blended learning was incorporated showed reason to rethink educational platform options. The purpose of my study was to understand the effects on student learning when a blended instructional model is implemented, integrating adaptable computer-based technology with direct teacher instruction. In the 21st century, educators still instruct and follow a tight bell schedule as they have since the 1800s.

The history of teaching tools in education goes back to Primitive times of wooden paddles with printed lessons, called Horn-Books, to later years of slide projectors, chalkboards, and then followed by pencils in the 1890s (Purdue Online, 2019, para. 2). The longitudinal look at educational tools over time is an important factor in better understanding the evolution of student teaching and learning. Each tool represented a way in which to better understand how to teach content and capture student thinking. Fast forward to the 1980s when educators began using computers to aid instruction and change their educational platforms from pencil and paper to assisted computer-based programs.

The examination of data from this study will lead to a better understanding of how computer-based learning in the classroom or at home (eLearning) may impact a child's academic outcomes; thus, also adding to a family’s calculated and intentional schooling choice option for a child. The Evolution of Technology in the Classroom (Purdue Online, 2019) caused me to consider how technology became wide-spread and began a revolution in teaching and learning, especially over the last three decades. From the 1980s to now,
2020s, technology in education has transformed from just accessing materials faster and capturing rights and wrongs in learning to expanding and sustaining learning through adaptive programs, as well as increasing interactions from local communities to worldwide virtual networks.

Therefore, change leadership opportunities can be based on the data that aims to assist parents, students, teachers, and leaders in balancing instructional environments and teaching tools that support a child’s ability and will to learn. Thus, this study will be useful for parents and guardians to be informed in making sound academic and innovative learning environment decisions for their children. Furthermore, school choice will go beyond parents and incorporate students in the process. It will be important for parents and educators to look at secondary students being more cognitive about using technology for learning purposes and primary students studying both online and in-person to adapt accordingly for upper-grade ease and accomplishments.

I found that many students and parents who participated in my surveys stated they preferred themselves or their child(ren) to learn from a teacher in the traditional classroom environment. I also noted that the computer-based system reports on a child's ability to increase personal performance were significantly better when a child learned on-line or through eLearning programs. The quantitative data I reviewed did not coincide with participants’ survey responses and their choice for their child(ren) to be taught by a teacher directly or solely. In addition, state assessments, when divided into eLearning and traditional learning categories, showed a significant increase of performance for those working through eLearning environments. I also discovered that on many accounts,
students within the eLearning computer-based programs performed higher or made more gains than those in traditional learning environments.

On many occasions, reading teachers at the school under study instructed and supported students to use Achieve3000®, an adaptive computer-based program. Teachers provided remote direct instruction simultaneously with the traditional direct instruction. However, when the student was left alone in charge of their learning, the child using Achieve3000® at home showed more gains than those in the classroom by year-end. During the school year 2020-2021, many face-to-face students were sent home, and in some cases, multiple times, to be quarantined from their typical learning environment due to their exposure to COVID-19 during the pandemic; thus, slowing their progress and way of work. Yet, at no time was the eLearning students’ progress impeded, as their way of work remained stable or unchanged during quarantines.

The data in this study were collected when learning environment choices were offered to parents out of necessity due to the COVID-19 pandemic versus intentionally or based on academic and social-emotional factors. Therefore, large performance gaps occurred during the 2019-2020 school year. I suggest educational leaders create a system that comprises a framework, rubric, and interest survey based on self-efficacy and academic ability. Upon the development of such tools, I will address policymakers as well as instructional leaders or board members about ways to pre-measure students’ choice for an academic environment that supports a child’s will and impacts their ability to learn. Educational leaders will also build a consciously skilled and competent mentality as shared in the Learning Stages Model developed by a former Gordon Training International employee. In Gordon’s learning stages educators, leaders, and
students become aware and build a better understanding that learning can be a slow and often challenging process where steps and stages occur to become a conscious learner (Adams, 2019). There are four stages: unconsciously incompetent, consciously incompetent, unconsciously competent, consciously competent which refer to the approach of how one develops a new skill or adapts to change (see Appendix D) (Do, 2017).

I propose a change leadership plan at the state level in which educators focus on the alignment of skills, standards, and innovative learning environments to scaffold eLearning options into the brick-and-mortar schools. I am not suggesting another mandate on teachers to be endorsed by a deadline, but rather a means to intentionally collect measures regarding educators’ competency and craft for instructing students using face-to-face collaboration and engagement or online with computer-based assistance. My plan will create a balance between assigning students to teachers using a measurement that determines the ability and will of teachers to instruct effectively and also intentionally placing students in an educational environment according to the child’s ability and will to engage in the learning process.

**Envisioning the Success To-Be**

My To-Be vision for all schools within the state under study will include a means of staying relevant for all learners and transitioning with technological advances for future educational possibilities. Each school district will build capacity among teachers, leaders, and students by placing each in a learning environment that maximizes potential for achievement, instruction, and professional and personal growth. This will entail a stronger consideration of the contexts, culture, conditions, and competencies (Wagner et
al., 2006) of an ideal learning program (for a complete To-Be organizational chart see Appendix F).

Furthermore, my To-Be vision will strongly suggest consideration to choose an environment that differentiates instructional content, process, and product methods. According to new research from Tomlinson (2017), differentiating instruction (DI) is a means to creating an equitable education for all students. Tomlinson (2017) shared the importance of differentiation within educational content, process, and products that are not customized for new and different lessons for each child but rather a “repeated rhythm of whole-class preparation, review, and share, followed by opportunity for individual or small-group exploration, and production” (Tomlinson, 2017, p. 236). This entails students engaging in rigorous learning practices that promote problem-solving, critical thinking, and exploration of content. A blended model will support these practices by adding differentiated instruction for customized content, process, and products.

Embedding this instructional differentiation with environmental differentiation may close the achievement gap in the large diverse number of learners that educators embrace today. In my study, I demonstrated a gap between the perception of learning among parents, students, and teachers, and the measurement outcomes that equated to students’ success. The importance of differentiating ability and will, in accordance with the learning process and best environment, will be contingent on how the community and stakeholders understand, support, and advocate for choice learning, not just choice schools.
**Future Contexts**

Historically, education relied on the competency of the assigned and certified teacher to transfer knowledge. Knowledge was often extended to children based on the educator’s interpretation of a chosen or preferred curriculum program. Children and teachers relied heavily on bell schedules, study periods, and assigned breaks. This archaic way of instruction set education back generations, especially as school choice extended into platforms like online, traditional, private, and magnet-type schooling options. The need to balance learning with blended practices that complement teacher and peer interactions is needed more than ever in this fast-paced technological world available to children today. Measuring how adaptive technology impacts student learning outcomes and the importance of blending the learning seamlessly with fidelity can change the platform of education to impact student achievement.

Ideally, all children should be subjected to learning environments that work best with their learning style. “Even though students in a classroom may be chronologically the same age, one-size-fits-all instruction will inevitably deteriorate learning equitably” (Thomlinson, 2017, p. 91). Thus, the perfect future context will incorporate parental knowledge by using strategic systematic methods to make informed academic innovative learning environment decisions for their child or self. This will include a vision where all students are engaged in opportunities to blend computer-based programs with teacher interactions and practices throughout their scholastic career.

The success of the school is dependent on all students receiving at or above grade-level outcomes, called proficiency. When considering state standards, grade-level outcomes will equate to meeting the minimum of Level 3 on a scale of Levels 1-5 on the
State Standards Assessment (SSA). The data in this study demonstrated that 60% of the elementary eLearners outperformed face-to-face learners. Therefore, it will be advantageous for student learning to be blended with both teacher interactions and adaptive computer-based programs. This plan will incorporate an early start in kindergarten where students begin the process of navigating as well as engaging in a framework of computer-based learning complemented with teacher interaction and learning. As such, each grade level will increase in complexity with the benefit of early interaction supporting the opportunity for a stronger blended environment throughout a child’s school day.

State-level educational leaders will find a balance between funding practices that incorporate eLearning opportunities with brick-and-mortar ones. To accomplish this balance, leaders will look at facilities and operational costs to retrofit the learning environment to a technologically enhanced one. However, technology is not cheap, and scaling back funds that typically go to facilities will transfer to technology enhancements for at-home eLearners and at-school face-to-face students.

**Future Culture**

The data in my study demonstrated a strong difference among teachers’ opinions regarding computer-based programs and teaching methods in the classroom. Therefore, teachers, in this study, may not recognize the value that innovative learning environments and personal self-efficacies have on student achievement and professional growth. This is important to consider when implementing blended learning and differentiated instruction with computer-based enhancements for a learning environment. Creating job-embedded professional development to meet new state in-service requirements for teachers by
collaborating with university-level educators will meet the principles of the Every Student Succeeds Act (ESSA) for strong educator evaluation and support systems. ESSA’s continuous improvement instruction model includes observations and feedback for all educators (U. S. Department of Education, 2019).

Recent teacher requirements for recertification have included coursework or in-service credit in topics of English as a Second Language (ESOL), Reading Endorsement, and Students with Disabilities (SWD) for teachers to renew their teaching certificate in the state under study. These state requirements help to close the achievement gap and are mentioned in ESSA which addresses K-12 policies to support a diverse educator workforce across the career continuum that aligns with my recommendations (U. S. Department of Education, 2019). The importance of teachers having experience and developing expertise with teaching various subgroups that also align with diversity demands for both direct instruction and computer-based educational opportunities is critical to building full capacity in differentiated instruction.

In my To-Be plan, leaders will support teachers in building a growth mindset regarding how technology complements academic success. As demonstrated through the data collected in this research, teachers’ and stakeholders’ self-efficacy pointed to face-to-face instruction being more effective than instruction for eLearners. Teachers, through this analysis, will recognize gaps between face-to-face and eLearning environments as demonstrated by performance levels based on the SSA in 2021. This will allow a parent or guardian to opt-in to the best learning environment for their child using school choice options. My ideal school will have every child in a blended learning program with specific percentages of face-to-face teacher interaction and computer-based learning
options at school or at home. The culture will incorporate labs that are not strictly related to a bell schedule. In addition, the personalized and blended educational interaction process will be contingent on the craft of the teacher. The teacher will enhance and extend learning based on skill and strategy, strength and weaknesses, and not based on specific grade or subject area placements.

**Future Conditions**

I find that the condition for learning needed today disrupts the time, space, and resources currently delineated. Wagner et al. (2006) stated it best when defining conditions as time spent with children, colleagues, parents, and community and the explicit roles and responsibilities tied to assessments, scales, and structure. These conditions relate directly to the growth mindset required in building a culture of lifelong learners. Education is evolving, and therefore, everyone involved in educating a child has to be flexible, strategic, and willing to promote change.

Change leadership conditions address ways to create a vision of success and they include a shared vision to define elements of good instruction by and with all educators (Wagner et al., 2006). This focus on academic success directly impacts a family’s ability to be involved and make strategic decisions for their child’s future to engage in the learning process. Awareness of a child’s differences in *ability* and *will* to learn influences the best learning environment option. This consideration is important to families when choosing the best learning path for their children. The data outcomes in this research point to discrepancies in stakeholders’ awareness of face-to-face learning and eLearning outcomes. The inconsistency demonstrated the need for creating a framework for instruction that highlights the needed alignment for students and parents to make
educational decisions that address location, placement, and instructional methods for learning.

According to new research, education leaders and state representatives often discuss the importance of equitable education and the challenges to recognize and advance equity in order to transform lives (U. S. Department of Education, 2018). This speaks to equitably looking at students’ personal choices to guide their own learning environment, which must include improving instruction for all students. Ideally, a child’s experience in the classroom will greatly differ when teachers implement different instructional methods within the classroom that is blended with both face-to-face instruction and computer-based learning, so students will take ownership and increase engagement. This condition impacts the challenges brought forth in the U. S. Department of Education’s requirement for equitable opportunities, especially when it comes to budget barriers or inequitable funding systems.

The condition of reviewing funding systems that prioritize digital devices in the hands of teachers and students will be needed for choosing the best learning environment for a child. In some educational systems, one-to-one electronic devices have been explored as 73% of students used tablets or laptops daily, while 66% of school leaders said the school supplied the electronic device with 25% saying students provide their own electronic device (Cortez, 2017; Nagel, 2018). Yet, upon educational entities establishing a funding system to purchase electronic devices, the implementation is impacted greatly if the funding source does not include professional development (PD). According to Puig and Froelich (2021), this needed PD includes but is not limited to how teachers can
balance classroom practices, blending learning environments, technology integration, and incorporating conditions for learning.

I found, in my study, that many of the teachers stated they felt somewhat comfortable with using technology in the classroom. Yet the data show that this was not done seamlessly. The data showed that most eLearning students were more successful without teacher interactions than face-to-face students were with daily interactions with their teachers. The ideal condition will be to include professional development that will enhance a teacher’s knowledge in blending learning to include both face-to-face interaction and computer-based learning and thus differentiating instruction. This professional development focus will ideally address blending the educational environments to create a project-based and inquiry-based learning model where a student-centered mode of instruction motivates and empowers students and teachers from a variety of disciplines, also considered in transdisciplinary literacy (Puig & Froelich, 2021).

**Future Competencies**

Educators with ideal competencies will look at the whole child to determine the best learning environment that incorporates blended methods and consider an individual’s ability and will for learning. This competency will additionally entail ways to address the self-efficacy and best practices for teachers and students. Most teachers I surveyed did not wish to teach without instructional interaction or with computer-based technology. Although they struggled with understanding, purpose, and interactions, all teachers valued the humanity in education. This level of competency and teacher self-efficacy will change in my plan for future adaptations to the learning process and environment.
Although research shows that teacher and peer interaction for engagement is critical to the learner, it does not negate the fact that computer-based programs have shown advanced levels of academic success when implemented. Technology provides a sense of ownership to the learning process for the learner. “Researchers have postulated that giving learners control over their instruction may lead to increased motivation, improved achievement and performance, and more positive attitudes about learning” (Kopcha & Sullivan, 2007, p. 265).

The data in my study show that when students were left to rely on a computer-based program for their personal growth, they excelled. The best option will be to provide practice with computer-based programs early on in education with explicit and systematic feedback starting in kindergarten that becomes increasingly rigorous with each progressing year. This scaffolding will help reduce cognitive load over time and measures preferences as an effective approach to balancing instruction (Kopcha & Sullivan, 2007, p. 284). This new lens will ideally support educators in continuing education around online instruction through universities and state and local programs that will supply competence and confidence.

**Conclusion**

In my study, I found several contributing factors impacting today's learning environment and methods or tools affecting student achievement. I used the 4 Cs To-Be framework by Wagner et al. (2006) to develop my plan for the future. My vision of success entails options for learning and engaging in the learning process. My vision also includes empowering choice for students and families by helping them recognize the difference in a student’s *ability* and *will* to learn that directly impacts the choice of the
instructional environment. In Chapter 6, I will bridge the As-Is and the To-Be concepts with Kotter’s (2021) series of strategies for leading change.
Chapter Six: Strategies and Actions

Considering the major impact that the COVID-19 pandemic placed on education, educators now are faced with the eye-opening need for an ideal learning environment to differentiate and blend instruction for student success. I have identified challenges based on this realization in the As-Is 4 Cs analysis diagram (Appendix E) and transformed a new educational platform through the To-Be 4 Cs analysis (Appendix F) to create a Strategies and Actions Chart (Appendix G). I used the 8-Steps to Accelerate Change in Your Organization identified by John P. Kotter through his website Leading Change (Kotter, 2018). This scientifically-based model has assisted me in developing strategies and actions to implement change across education. My vision is to increase academic achievement through differentiating how instruction is delivered to students. Then in doing so, provide professional development opportunities for teachers to be assigned classes based on their strengths in implementing instruction. This shift in recognizing a child’s ability and will to learn will take old methods of teaching content to a focus on teaching individual learners.

I incorporated Kotter’s (2018) three phases that outline an 8-step approach to building partnerships with the state and local community, educational leaders, and university professors who prepare pre-service teachers. Each phase addresses different components that build a mission for change: Phase 1 (Steps 1-3) creates the climate and understanding of need, Phase 2 (Steps 4-6) engages stakeholders to affect change, and Phase 3 (Steps 7-8) implements and sustains the vision for change (Kotter, 2018). My vision in utilizing the aforementioned partnerships is to create advocacy groups that arrange, create, measure, and collaborate with change agents to generate innovation in
learning and improve academic outcomes for students. Developing effective relationships with these overarching leaders will help ensure buy-in and create a climate for change and collective innovation based on a wide range of perspectives (see Strategies and Action Chart, Appendix G).

**First Strategy: Create a Sense of Urgency**

Kotter contends that “there are two fundamental goals underscoring transformations: increased revenue/profits or decreased costs; become more effective or efficient, or both” (2018, p. 6). Kotter’s research builds upon his 1996 leading change initiative work to an accelerated 8-Step process. The most recent version now addresses enhanced steps that accelerate change principles. I mention Kotter’s evolving versions of the way to build successful organizations as a means of showing his adaptation of work that directly relates to sustaining acceleration and instituting change. This application of research directly employs my vision for teaching and learning practices, as it is cyclical and never-ending.

I will begin this process by establishing a sense of urgency when meeting with state board of education members, the commissioner of education, and university college of education provosts to share comparison data between traditional teaching methods and blended eLearning methods based on my program evaluation including state assessments. I will build a shared understanding for change by establishing an urgency for climate and culture that focuses on student academic achievement through innovative learning environments and computer-based blended opportunities.

I will compare traditional learning assessment outcomes to computer-based blended learning assessments. Data will show that on average 60% of eLearning students
outperformed traditional face-to-face students on the end-of-year state assessment system. In addition, I will incorporate self-efficacy survey outcomes from parents, teachers, and students where discrepancies occurred. The discrepancies showed a statistically significant disparage between those perceiving learning best with traditional methods over computer-based and blended methods. The surveys showed 90% or more of parents and students preferred learning traditionally; however, evidence through both curriculum-based and state-based assessments revealed those engaged in blended computer-based learning methods were more successful. Thus, providing evidence as to why building a change in educational delivery and practices should be the focus. I hope to form a shared understanding that the vision for innovative learning environments and differentiating blended instruction is a needed assignment.

**Second Strategy: Forming a Powerful Guiding Coalition**

Another means of identifying windows of opportunity is to address the urgency and create a powerful guiding coalition to beat competitors (Kotter, 2018). Educational leaders face this competitive challenge that did not exist in the earlier years of education. Education for students operated solely on zones based on where a child lived or to where the child was bused; it was not about choice and there was no competition. Today educators provide parents’ school choice and choice enacts competition. A powerful guiding coalition will help to build the change needed in the ever-evolving educational realm balancing competition with intentional choice.

I plan to assemble a guiding coalition with educational leaders from the state under study including state department of education members, universities leaders, and educators from across a wide range of teaching experiences. This multi-tiered group will
look at data from my program evaluation and synthesize multiple sources of information to create an overall viewpoint and a new way of work. Together the coalition will blend hierarchical structures to engage all stakeholders in affecting instructional change with intentional delivery options. Each member of the coalition will bring a different understanding of educational policy, programs, and reform. Additionally, members will come from diverse backgrounds, cultures, and professional affiliations as well as regions. Kotter’s research describes this process as a means to address strategic challenges and win the “big opportunity” (Kotter, 2018, p. 11).

**Third Strategy: Creating a Vision**

Kotter’s change principle (2018) leans on the importance of vision and initiatives that are implemented fast and address not just evidence-based needs, but also cognitive/behavioral, interpersonal, or client-centered needs. This thought process will be critical for the guiding coalition that is diverse with educational leaders to advocate comprehensively the needed change. The guiding coalition will reflect on data, both evidence-based and client-centered to establish a vision around trending needs as impacted by the most recent changes in education due to the pandemic.

We will address goals and values from a variety of perspectives based on recent innovative learning data from my study that I collected during my program evaluation as I considered students, staff, and community climate and culture looking at current challenges and future expectations. Efforts will involve community partners in the decision-making process to build a well-rounded vision and balanced evaluation measurements. The guiding coalition will create a vision that coordinates and aligns to intentional blended learning based on a child’s *ability* and *will*. The actions should
motivate people without a struggle to communicate the future and also address any needed change.

**Fourth Strategy: Enlist A Volunteer Army**

In the fourth strategy, Kotter (2018) expounds on how the coalition’s vision development needs now to enlist a volunteer army to help build a large-scale drive to promote and implement change. Kotter’s use of an army strategy ties into a TedTalk called “How to Start A Movement” that is under three minutes and explores how leaders lead and encourage followers that then become change agents, “where the first follow is actually an underestimated form of leadership” (Sivers, TED, 2010). In this TedTalk, Sivers addresses how leadership strategies build on optional volunteers who want to take part in the vision/change. Kotter’s fourth strategy and Sivers’ TedTalk establish a direct connection between recruiting and motivating.

Therefore, the guiding coalition will assist in the implementation and sustainability of the concise vision that can be shared clearly and comprehensively in five minutes or less. The guiding coalition will help put vision into action through multiple communicative processes to build common language state-wide while enlisting volunteers to engage and recruit for the volunteer army. The efforts of the guiding coalition should strive for 50% momentum of others within the organization to have a solid movement toward change (Kotter, 2018).

**Fifth Strategy: Enable Action by Removing Barriers**

Strategy 5 hits close to home for me in regard to my research and vision for developing change with a guiding coalition. My favorite quotation from Kotter that directly aligns with my message in this research is as follows: “Many leaders agree that
even their own management practices are archaic norms and a nuisance, yet remnants of the past can have tremendous staying power” (Kotter, 2018, p. 22). Educators are stuck in a norm that goes back centuries, and the ability, comfort, and passion to knock down barriers are difficult when dealing with generational brands (Kotter, 2018).

It will be the role of the guiding coalition to create and initiate change structures that remove barriers from traditional ideas. Teaching and learning will be recognized by those who show a willingness to embrace new initiatives, coach those who continue instilling traditional ideas and use data to expound upon change. Froelich and Puig’s (2010) use of a coaching continuum in their research may be useful as a guidance document to move between interactive and intra-active coaching methods for change. In order to remove barriers, the innovative visionary team should reflect on the whole-system by looking at and analyzing subject-centered pedagogy and solution seeking andragogy (Froelich & Puig, 2010). As I mentioned in Chapter 5, the coaching continuum job-embedded approach, with the volunteer army, can help with expanding and sustaining the vision. Therefore, the guiding coalition will remove barriers with a strategic plan to enable, enhance, and sustain actions promoting the vision to create an educational system that is differentiated and intentionally blended for teaching and learning.

**Sixth Strategy: Generate Short-Term Wins**

Kotter (2018) explored the importance of engineering a plan that recognizes short-term performance gains and rewards anyone who contributes to improvement based on and for the collective vision. In order to drive change, the coalition must track and energize the process early and often for quantifiable and qualifiable validation. The
guiding coalition will work toward creating and recognizing short-term wins for leaders, teachers, students, and the community. Each step will elaborate on how the coalition might celebrate, communicate, and encourage improvement over complacencies.

As I mentioned in Chapter 5, short-term wins will be crucial for all stakeholders, as this is a long-term plan that will impact everyone’s way of work. Failure to recognize the achievements and behavioral successes of others may leave the vision vulnerable to a backslide and archaic way of work. Short-term wins will start early with qualifiable recognition for coaching leaders and teachers through the coaching continuum from Froelich and Puig (2010) and then move to quantifiable wins. Quantifiable wins will most likely happen between 10-24 months into the change efforts.

**Seventh Strategy: Consolidating and Improving**

Kotter (2018) refers to this step as sustaining acceleration. Yet in researching this step through other interpretations, it has been shared as “not always needed” since the coalition’s vision is not a single entity for improvement. Some supporters and critics suggest that the efforts to institute change are ever-evolving and acceleration exists in multiple steps (FixAbout.com, 2018). Therefore, Kotter’s step description is valuable in having the coalition consolidate and improve throughout the vision’s timeline and implementation plan. Each step adds new opportunity for growth and change; hence adding to the vision. Therefore, in order to adhere to Strategy 4, the guiding coalition will be challenged with possible adaptations needed to the vision in order to consolidate and improve the original version.

The guiding coalition will use credibility to earn validity and reliability for continued change. A coalition’s strategic use of data to drive communication and build
sustainable systems is important. This can drive teaching and learning by choice based on self-efficacy with practice and professional development. These efforts will help promote the vision and develop the stamina needed for change. Additionally, the coalition will need to continually recruit, hire, and promote individuals attempting to take risks in effort to reach the vision of blending the teaching practices and maintaining urgency to expand knowledge. This strategy will be needed to continue pushing away any complacency that might arise in educators enacting traditional methods that impede on the growth mindset. More importantly, recognizing change, as mentioned in Strategy 6, will instill a practice of acknowledging the difference between change initiators and change resisters who often create a false sense of security or premature finish (FixAbout.com, 2018).

Eighth Strategy: Expanding and Sustaining Innovation

Kotter’s (2018) eighth strategy is referred to as instituting change, which coincides with my previous research that states this step may not be relevant in some contexts as is a logical change process seen throughout each strategy (FixAbout.com, 2018). In the inter-workings of Kotter’s explanation, he expands on the importance of sustaining organizational growth by repeating new behaviors that are important and connecting the behaviors to organizations’ success (Kotter, 2018). The deep transformation needed in this research for the guiding coalition’s vision is to address success in recognizing altered actions, behaviors, beliefs, and performance outcomes. Using guidance documents that address inter- and intrapersonal decisions that impact teaching and learning will be key to sustaining innovation.

The guiding coalition will have an evidence-based process to articulate how new behaviors, approaches, structures, and success improve performance, thus recognizing
when the “way of work” is permanent and sustainable. In Chapter 5, I mentioned how the mission, based on the research, set a To-Be solution statement in which student achievement is improved when innovative learning environments are implemented intentionally and incorporate blended models for academic success. The To-Be statement complements Kotter’s eighth strategy in which culture changes are needed after successful alterations of others’ actions and dots are connected. This research idea started prior to the pandemic, and yet results are a direct reflection of what happens when external forces and people’s actions institute change.

**Assessing the Effectiveness of the Change**

Change is described by Bambrick-Santoyo and Lemov (2018) who said the most effective outcomes occur when building a community of change agents. I plan to accomplish this task with a guiding coalition whose sole purpose is to create change that benefits student learning through evidence-based decision-making.

Change didn't come from inspirational conversations: it came from changing the structures of instruction to accelerate learning. The power of data-driven planning is that it doesn't give just one teacher the tools to be successful. It builds a community that walks the most efficient possible path to success together.

(Bambrick-Santoyo & Lemov, 2018, p. 120)

I will work with the guiding coalition to create a common language around the collective vision to build a plan of action that drives all stakeholders in promoting academic achievement. The coalition will use data as the driving force to determine modification, sustainability, or a need to disband as they progress through action steps (Appendix G).
To maintain buy-in, the coalition must look at multiple sources of data to stay productive and maintain their commitment to the vision.

To ensure the team’s effectiveness, I will involve teachers, parents, students, and leaders to measure academic achievement. We will use teachers’, parents’, and students’ surveys to analyze and measure blended learning methods that work or cause challenges to each stakeholder. These data will be reviewed by the coalition quarterly to measure change over time. The coalition will also incorporate questionnaire forms to determine technological accessibility, usage, and functionality each semester with students, parents, and teachers. The coalition will collect and analyze State Standards Assessment data to monitor proficiencies over time from grade to grade and year to year. All these data points will triangulate sources of information to examine how implementing blended learning with computer-based programs impacts student achievement.

**Involving Community Partners**

Community partners will play an integral role in the decision-making process based on my strategy and actions plan (Appendix G). I will include local community members along with district and state leaders, university leaders, and EdTech academic innovation groups. These relationships will help to build membership for an association of **Innovative Education for Blended Learning**. The members will lead the discussion around what is transpiring in education as it pertains to regulations, standards, technology, professional development, and preserving new educators in the field.

District and state leaders will assist in creating awareness around accountability measures. The coalition’s efforts to measure blended learning will be shared yearly from the quarterly collection of data to determine success as it pertains to skills, strategies, and
standards. District and state leaders’ experience and expertise will assist the guiding coalition in learning opportunities as well as computer-based options that meet progress-monitoring standards. Considerations to content, process, and product will be explored by community partners to ensure we meet all unique learner needs and maintain a systematic approach for families and educators to choose the best learning option for a child.

University leaders’ involvement will help to build a better understanding around onboarding new teachers to the profession. In considering the current transition needed after the pre-service years to obtain endorsements and continuing education after college, through collaboration with university leaders, the coalition will analyze ways to be relevant to today’s learners. Preparing teachers in various learning environments, planning with CBP, and instructing through blended methods to minimize the transition from university to the profession will be important.

The incorporation of EdTech Conferences and collaboration with EdTech Boards will allow the guiding coalition to share new research, present new evidence, and stay abreast of changes needed for students to be academically successful. Additionally, this collaboration will allow a platform for educators to be a part of innovation and to determine how effective blended methods impact student achievement.

**Conclusion**

According to Kotter, “New practices must be deeply rooted and anchored to replace the old ways” (2018, p. 32). My goal is to uproot the educational system in which students and parents choose between blended computer-based learning or traditional face-to-face learning. Academic environments should be differentiated and complement a child’s ability and will to learn in lieu of classroom schedules, bells, and a one-size-fits-
all grade-level approach. I plan to create a future in which I use Kotter’s eight strategies to build a coalition of change agents to reform the way children learn. I will make recommendations for policies and teacher education in Chapter Seven.
Chapter Seven: Implications and Policy Recommendations

In this chapter, I propose a policy that will ensure students will engage in both a face-to-face model of instruction and a computer-based aligned instruction to differentiate and maintain personal momentum for learning. Courses will be blended to complement the work that engages students in hands-on learning with teachers and rotates into a flip design in which lectures and independent practice are done through computer-based programs. This differentiation of learning and a variety of instructional delivery models will raise students’ achievement, increase reading proficiency, and broaden intentional instructional choice options for career and college readiness.

Policy Statement

I propose a policy that requires every student in every public school across the state under study to have an opportunity to be part of an instructional delivery model in which blended learning occurs for each core subject in kindergarten through twelfth grade. Using Marzano’s Instructional Framework for evaluation, I will tie instructional policy and best practices in the classroom for students with the teachers’ required accomplished practices. Pedagogical and andragogical strategies and methods for this policy will be critical in implementing educational reform. Starting with the end in mind, habit 2 according to Franklin Covey (2010), is a means to envision the ability to imagine change with what we know is present. For my policy, this means is to consider how educational leaders hold teachers and students accountable for learning each academic year.

My policy will include two components that will address student learning and teacher assignments, based upon training and certification. The student learning
component of my policy will ensure an instructional model in which blended learning occurs for each content area. Students will rotate daily between a teacher-directed learning model and a computer-based model. Teacher-directed lessons will have students enact learning on the spot through engagement while establishing relationships with peers and testing hypotheses with a certified instructor. Then within a complementary period or block of time, students will interact with new knowledge and practice through computer-based programs within all content areas daily; this may or may not incorporate the same instructor. These instructional practices and environmental learning options complement Brian Cambourne’s Conditions of Learning (2000).

According to Cambourne (2000), children acquire literacy learning in meaningful ways when certain conditions are present in their environment, and since literacy is across the disciplines and should also be content-driven, I will use my policy to require educators to look at each condition in comparison with a learning environment that focuses on the whole child. Cambourne’s conditions of learning along with my approach to meet them are as follow:

- **Immersion** – Meet this condition through a blended learning environment
- **Demonstration** – Meet this condition through a blended learning environment
- **Engagement** – Mostly meet this condition through a face-to-face learning environment
- **Expectation** – Mostly meet this condition through a computer-based learning environment
- **Responsibility** – Mostly meet this condition through a computer-based learning environment
Approximation – Meet this condition through a blended learning environment

Use - Mostly meet this condition through a face-to-face learning environment

Response - Mostly meet this condition through a face-to-face learning environment

My policy will also address teachers’ requirement to craft face-to-face learning with core curriculum content, engagement, collaboration, debate, feedback, and interaction within small and whole group instruction. A face-to-face instructor will focus on clear goals and identify methods that align with the computer-based instruction to plan lessons, develop blocks or periods of instruction, and track progress within this learning environment. Meanwhile, the eLearning instructor will focus on co-planning with the face-to-face instructor, assigning computer-based program work, printing reports, interpreting reports, tracking standards and skills progression, and disaggregating data. Therefore, the policy will have the training and identifiable placements based on teachers’ ability and will (Young HPC, 2021). These instructional strategies and behaviors listed for each model align with research from Learning Sciences International and Marzano (2013), an approved teacher observational tool for domain 1, classroom strategies and behaviors, in the state under study.

The policy will include required teacher in-service professional development and certification hours depending on choice and background experiences. Training for teachers will include both instructional models, face-to-face and computer-based, as the workload for each option will require one teacher per learning environment. The objective is to provide a balance of work in today’s largely diverse classrooms. According to research, low socioeconomic status among students in the United States
went from 14.4% in 1973 to 21.1 in 2014, students with disabilities (SWD) increased from 8.3% in 1973 to 14% in 2014, with learning differences not recognized in 1973 and measured at 20% in 2014. Additionally, teachers serving students with trauma or mental health issues have increased steadily over the years (Digital Promise, 2016). These numbers are staggering and continue to rise; finding methods to meet the different and unique needs of learners through computer-based programs and technology will help balance the teachers’ ability to reach more students and offer productive interactions across the different proficiency levels.

My policy will address these growing concerns by establishing methods that individualize learning opportunities for students and assist in different ways to gain new knowledge at a personalized pace through blended learning methods. Therefore, my policy to enact different learning environments that are aligned with specific teacher expertise will allow students to take ownership in their educational experience and help build literacy across content areas with programs that are adaptable. A child’s will to interact will not be contingent on an all-day social expectation to participate, but rather a balance between individualized focus and guided instruction through both learning environment options.

Analysis of Needs

Throughout this Chapter, I analyzed my policy recommendation through six lenses to be transparent with how my policy will impact student achievement. The objective is to provide a clear and comprehensive look at the educational, economic, social, political, legal, as well as moral and ethical analyses to increase student
achievement through a reformed and innovative option to learning environments. The policy analysis of needs supports an equitable education for all students.

**Educational Analysis**

According to my researched program evaluation, third through eighth-grade eLearners outperformed students in face-to-face environments in Lexile growth by 60% through Achieve3000®. Similarly, data from the State Standards Assessment (SSA), when comparing fourth through eighth-grade proficiency, also showed eLearners performing higher than their face-to-face counterparts by 60%. To be considered English Language Arts (ELA) proficient by state standards, a child must earn a Level 3 or higher on a scale of 1-5 on a state assessment and score at or above grade level based upon Lexile level in Achieve3000®. The data in my study revealed the average Lexile growth overtime (August 2020- March 2021) and the end-of-year SSA obtained during the month of May 2021.

The August 2020 data from Achieve3000® showed on average 31% of students enrolled in Grades 3-8 were at or above grade level in literacy upon the start of the school year. The other 69% of students fell below proficiency at the start of the school year. This enhanced the need to differentiate instruction. The difference in proficiency levels across grade bands helps define the need for a diverse learning environment in which blending computer-based programs can support teacher instruction for multiple levels and learners.

The challenges teachers faced in 2019-2021 were evident in the surveys I collected. Teachers did not feel prepared for eLearning or adapting to computer-based programs (CBP). The lack of training for teachers to blend CBP with traditional instructional methods was not evident before the pandemic. Therefore, to ensure effective
and equitable education, my proposed policy includes a requirement for educator preparation in online teaching for preservice and in-service educators. Richardson’s (2021) study mimics teacher struggles when she stated that “more than half of surveyed teachers reporting that teaching methods are the biggest challenge,” especially during the pandemic when school closures occurred and the need to address the inadequacy of teachers’ training in online teaching was exacerbated. This educational deficiency will likely continue for both virtual and traditional public schools unless a new policy is put in place.

**Economic Analysis**

The economic impact of my policy requires preservice and in-service teachers to be trained on computer-based eLearning options and enhanced face-to-face options. The policy implementation follows the importance of how the evolution of technology impacts students’ sustainable learning through the teaching profession and the need for teachers to evolve and grow with the advances or be left behind.

Both research and instruction can be achieved through a click of the mouse. With technology advances come new responsibilities to the instructor and therefore increase the value of learning. As technology advances, an educator’s abilities will grow rapidly, and without the knowledge of these changes and capabilities, an instructor has a good chance of being left behind. (Purdue Online, 2019)

An additional economic impact will be the allocation needed for proper digital devices and streaming network or internet providers to run the computer-based programs efficiently and seamlessly. Although physical space will still be needed, the design of each classroom will vary with the additional blended learning option. The facility’s
budget will differ in seats and desks; therefore, rearranging the operational and curriculum allocations to support technology is important. According to Waddell (2017), the theoretical framework and notions that policy related to eLearning should promote scale efficiencies, in which larger institutions will be better able to compete in the future, and that there should be substantial investment in the development of eLearning materials and online courses places emphasis on the need for technology and blended learning (Waddell, 2017, p.8)

This policy will allow some classrooms to be designed creatively and intentionally productive where learning spaces are places to learn individually with computer-based programs, collaboratively in groups at tables, and project-based within the community or school environment. These different learning environments directly impact student academic achievement as each is equitable and educational options are based on individual needs. Thus, these learning environments impact accountability placed on teachers for gains in learning via SSA and other progress monitoring tools.

**Social Analysis**

This policy’s social impact will enhance a teacher’s *ability* to increase the instructional focus and engagement for students. Teacher, student, and peer interactions will be intentional and planned without all the bells and whistles of learning centers and planning for individualized learning, but rather an exploratory learning environment. According to Tomlinson (2017), “differentiated instruction is NOT individualized instruction in an attempt to honor students’ differences so teachers can experiment with what might be best for each child out of 20+” (p. 134). According to Tomlinson (2017), differentiated instruction is proactive and rooted in assessment both qualitative and
quantitative, student-centered, organic, and dynamic. The blended model option for each content area will allow the computer-based model to adapt to the individual to preview and review new concepts. Meanwhile, the face-to-face model pushes the learner to share ideas and interpretations that are project-based. This social engagement, through face-to-face learning, will strengthen peer relationships from acquiring new concepts publicly to exploring and deepening knowledge effectively and dynamically.

The policy will impact the relationships between parents and teachers. Parents will no longer have to serve as the at-home teacher or be responsible for the recovery of learning during times of homework or long breaks. The work accomplished at school can be extended or completed at home. According to Lisa Richardson (2021), parents’ support through a learning management system (computer-based program) assisted the families in guiding their child through the learning versus playing the role of teacher. Students will maintain ways to stay connected with peers at times that are appropriate for learning, and teachers will juggle ways to plan for discussion and exploration that complement a skill or strategy taught.

**Political Analysis**

The political impact of this policy may relieve many educational stakeholders as it adds another option to the various learning environments available to families and complements that of the Virtual School (VS) option. Due to the pandemic, many families chose VS over brick-and-mortar, which resulted in a lack of full-time enrollment (FTE) funding for all physical school sites. However, the option to learn both online and in-person exists within this policy and creates an additional choice as well as the ability for brick-and-mortar schools to maintain full-time enrollment funds. School district leaders
and teachers will offer options to maintain enrollment and meet the adjusting needs of students who may prefer both face-to-face and online options. This will allow the computer-based instruction to be asynchronous at any location.

The national and state requirements of brick-and-mortar schools may need to be adjusted. Currently, the demand is that all student minutes occur in a school building. My policy allows minutes to be evident through computer-based programs, whether online at school or at home. This adaptation for the policy will support the enrollment crises that brick-and-mortar schools face today due to health and safety concerns. These recommendations impact the political arena as the state and government continue to include social-emotional support as well as effective school safety measures in the public school infrastructures that impact revenue-generating opportunities.

The students and parents surveyed in this study stated they preferred teacher-directed face-to-face instruction but also saw the advances when children had moments in their learning day without distraction, peer conversations, and teachers redirecting others. Implementing professional development for teachers to reform instruction and allow blended learning to lead new knowledge and teaching methods to deepen knowledge will enhance student achievement. Therefore, innovative training requirements will help build the capacity for teachers to teach equitably. A critical point in my policy is to not add additional degrees to teaching and learning as education systems continue to lose teachers at a staggering rate. EdWeek Research Center surveyed 700 teachers and 300 leaders in March 2021, and 54% of teachers stated they were likely or somewhat likely to leave education in the next two years (Loewus, 2021, para. 8)
Legal Analysis

The legal implications of this policy for school districts lie in teachers’ and families’ ability to access computer-based programs without technical difficulties. If eLearning through computer-based programs is an equal part of a child’s day, then disruptions to learning due to technical issues could have negative consequences. Teachers and parents could litigate the school or district for loss of learning due to the inability to access or use technology throughout the school day. Instances where complications with technology impact students’ academic minutes during the school day could ensue legal implications to the school or district leaders for emotional distress on educators due to circumstances beyond their control; including but not limited to lack of training, lack of accessibility, and or lack of technological stability.

As districts and schools are held to legal responsibilities for providing an equitable education according to the Every Student Succeeds Act (ESSA), this legal analysis is directly tied to the previous economic analysis in avoiding unintended consequences. Evading legal issues will entail educational leaders’ ability to budget proper functioning, up-to-date technology, and computer-based programs that support technical specifications for usage. The broadband needed to run a school’s infrastructure will vary; yet improving equipment, district-wide infrastructure, technology plans, and professional development opportunities, as observed in Durbin’s (2013) research, will proactively address these possible legal implications.

Moral and Ethical Analysis

Digital Promise, also known as the National Center for Research in Advanced Information and Digital Technologies (2016) stated, “With these large numbers of
underserved students, we have an economic, political, and moral imperative to seize the opportunity to build a research-based, educator supported system that engages the diverse needs of all learners” (p. 8). I find that the proposed policy meets the demands of today’s public school system. The blended model of instruction will provide stronger research-based opportunities as teachers are able to engage students both face-to-face and in the computer-based model. Each instructional environment will improve the quality and effectiveness of teaching in the high demand and diversified classrooms faced today. Thus, I am responding with a policy that shifts to a fundamentally different education model that supports differentiation and flexibility for learning equality that addresses the moral and ethical obligation of educators to make learning as equitable to all students as possible.

**Implications for Staff and Community Relationships**

This policy, to require all students and teachers to take part in a delivery model where blended learning occurs, will have implications for all stakeholders. Students will take ownership of their learning when it is aligned to computer-based programs. Students will have to self-monitor when engaged in direct teacher instruction. Furthermore, teachers will need to enhance their craft for teaching online with computer-based learning in which planning will result in learning that is interactive and less lecture. Parents and communities will face improvements where a child’s or subgroup of children’s learning progressions are readily available on a regular basis. All stakeholders will have the opportunity to engage in productive conversations that support academic learning not just social-emotional learning.
The confidence needed from all stakeholders impacts everyone’s ability to stay connected. Electronic reports, as well as maintaining personal interaction, will support the whole child with the whole system as proposed through the blended learning environments. My policy will support gradual reform that will transition from traditional ways of work to more interactive student engagement. Teachers will be change agents with a growth mindset that impacts all students. According to the research by Digital Promise (2016), researchers continue to make progress in understanding how people learn, how learning affects neurodiversity, and how this knowledge can be applied to personalized learning.

**Conclusion**

I propose a policy that requires every student in every public school across the state under study to have an opportunity to be part of an instructional delivery model in which blended learning occurs for each core subject from kindergarten through twelfth grade. This policy transitions traditional ideas into new structures and formats. The method of teaching in a blended model will enhance instruction and increase academic outcomes. In Chapter Eight, I concluded my study by stating how leadership lessons have impacted my drive to make a change.
Chapter Eight: Conclusion

I evaluated a school-wide program, Achieve3000®, and compared brick-and-mortar students to eLearning students to measure the effectiveness of Achieve3000® using student outcomes through program reports and state assessments in Grades 3-4. My research results informed my vision for the future of education across all grade levels. I hope educational leaders and anyone who initiates change, harbingers, will read this evaluation and see potential to use recommendations and impact school reform for student achievement.

Discussion

The purpose of my study was to understand the student learning effects of a blended instructional model that was implemented by integrating adaptable computer-based technology with direct teacher instruction. The goal was to evaluate the impact of an innovational learning environment with blended models, and furthermore, to determine whether there was a relationship between the delivery mode of instruction and student achievement. Thus, I evaluated blended methods in different learning environments to determine variations in student achievement outcomes.

The purpose of my research questions was to focus my study on the differences in outcomes based on grade and mode of learning. I found that instruction through adaptive technology impacted student achievement when eLearning was in place. Traditional learning methods interfered with computer-based adaptive technology efforts to enhance student outcomes. Additionally, students exposed to blended learning models had between one and ten percent greater learner outcomes than those exposed to direct instruction. Ironically, teachers and students both preferred the ability to learn
traditionally, face-to-face, despite the results of my quantitative data. Among students who participated in my study, 100% said they preferred teacher-directed instruction over the computer-based program, in direct conflict with the quantitative data from my study.

I evaluated and found through state assessments as well as parent, teacher, and student surveys the best method for teaching and learning is a blended method where face-to-face and computer-based programs (CBP) are integrated. I analyzed data that demonstrated most eLearners outperformed learners in brick-and-mortar environments, and that computer-based programs when utilized through blended learning methods were successful. The 52 survey responses from parents, teachers, and children addressed self-efficacy in the educational process, computer-based comforts, and overall wishes regarding the different options for learning. The global pandemic of COVID-19 had an impact on my study that I did not anticipate. The survey statements seemed to provoke participants to address the need to choose haphazardly the best learning environment based on family health concerns, and thus, changed the statement outcome and its interpretation. Meanwhile, the extant data had no interpretation, and outcomes were based solely on academic achievements.

I proposed a desired policy as a means to address in practice the findings of my study in regard to both the data outcomes and the results of the self-efficacy surveys. My intent in formulating a policy is to present a means to reform how educators deliver instruction. My policy contends that every student in public schools across the state would benefit from access to blended model opportunities for each core subject beginning in kindergarten through twelfth grade. Providing appropriate in-service training for teachers who will be assigned to teach face-to-face classes or computer-based
programs will be necessary for proper implementation and provision of instructional modality choice. Budgetary considerations for technology and redesigning classrooms will be critical for balancing the blended models with proper technology throughout all schools. School leaders and faculty will need to maintain a continued code of conduct awareness for students in the contexts of both models of learning. According to Digital Promise, “The advent of mobile devices, the exponential availability of internet resources, and the development of ever more powerful apps to support learning has now made it possible for people to learn anything, anywhere and in multiple ways” (2016, p. 6).

My policy addressed the need to diversify models for teaching in order to differentiate learning. Balancing computer-based learning with face-to-face learning in a blended method will provide a more equitable education for all students. My objective is to provide all aspects of education and stakeholders with a recommendation for recreating the learning environment, adapting to and with technology, and addressing the high demands on teachers and students to perform.

**Leadership Lessons**

One leadership lesson that resonates with me is the importance to look at all sources of data carefully. Qualitative and quantitative measures do not always add up and can convolute a study. I was amazed at the enormous amount of discrepancy between how people felt about learning and what was truly taking place. For the most part, the intrinsic qualitative data and extrinsic quantitative data were not complementary to each other, and if at any time they could be relatable, it was minimal.
I have grown as a leader through studying the work of John P. Kotter (2012) and his eight-step process for change leadership. Specifically, Step 7 impacted my thinking about consolidating and improving the vision for change. I learned the importance of eliminating regression by ensuring change initiators, and not change resistors, are the leaders of a change plan. It is often difficult to tell one from the other, and this research challenged me to recognize the right leaders who personify the new approach versus my old way of work which was to coach up leaders at all costs. This old method has slowed down the implementation of needed changes to ensure student and school success.

I learned that there is a lot of research separating online and virtual learning from traditional learning, but there is limited to no research literature available on incorporating the two. The blended learning model I propose will open opportunities for other researchers to explore. The data I found throughout this study included information from multiple perspectives; therefore, it is clear to me that research is open to interpretation and that facts are different depending on one’s platform or political point of view. The participant surveys in this study addressed a few political opinions that drove educational choice and instructional environments for learning.

My biggest leadership lesson is knowing students’ *ability* and *will* toward personal growth. Another important lesson was understanding that the academic environment is important to student learning. Any assumption that they are equal can be misleading. Educators’ self-reflection around how students learn best in any subject matter varies and having a balance of mixed environments through blended models will help close the achievement gap. I gleaned this perspective from students’ surveys and academic performance data during my research. Providing a blended learning opportunity
will promote an intentional plan for “education not to be the learning of facts, but the training of the mind to think” (Einstein, 1987).

Conclusion

Changes in education are inevitable. With all the options available to parents and students, it is time to rethink traditional schools and classrooms. It is the researchers who speak volumes around online learning and its successes that dictate the public school system, and educators need to be innately aware of their role to change and reform traditional values in educational methods. Leaders and teachers can remove barriers currently impeding the change needed to close the achievement gap. It is time all stakeholders think innovatively and use the technological tools available to improve the growth mindset and let their actions speak louder than words.
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http://www.achieve3000.com/studies
Appendices

Appendix A: Survey Questions for Teachers
Appendix B: Survey Questions for Parents
Appendix C: Survey Questions for Students
Appendix D: Gordon’s Learning Stages Model
Appendix E: As-Is 4 C’s Analysis
Appendix F: To-Be 4 C’s Analysis
Appendix G: Strategies and Action Chart
Appendix A

Survey Questions for Teachers

On a scale of 1-5, with 1 being strongly disagree and 5 being strongly agree, please provide feedback regarding how you feel about techniques to enhance student learning for questions 1-11. Question 12 allows for an optional comment as desired.

1= Not at All, 2 = Rarely, 3 = Neutral, 4 = Sometimes, 5 = All the Time

1. I enjoy teaching students in a classroom.

2. I enjoy teaching students using computer-based programs.

3. I am confident when using computer-based programs to guide student learning.

4. I prefer using computer-based programs to guide my instruction.

5. Direct instruction, without computer-based learning programs, is my preferred method of teaching.

6. I believe learning outcomes are higher when students are exposed to direct teaching instruction alone (no computer-based learning programs).

7. I lesson plan classroom instruction with computer-based learning program as my main source/guide.

8. I lesson plan classroom instruction using curriculum-based learning programs as an adopted curriculum resource.

9. Direct instruction, without computer-based learning program, is my preferred method of planning.

10. I prefer teaching with a blended model of direct instruction and computer-based program.

Comments: ____________________________________________________________
Appendix B

Survey Questions for Parents

On a scale of 1-4, with 1 being strongly disagree and 4 being strongly agree, please provide feedback regarding how you feel about techniques to enhance student learning for questions 1-11. Question 12 allows for an optional comment as desired.

1= Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree

1. My child enjoys the innovative learning environment option to stay at home for remote learning.

2. My child is engaged during the innovative learning environment option to learn from a computer program.

3. The computer-based lessons assigned to my child were appropriate.

4. The instructor’s computer-based interactions were helpful for my child to learn.

5. Our family will be better prepared if computer-based learning is offered at home moving forward.

6. My child is better prepared for computer-based learning at school.

7. I believe my child was able to learn and make academic gains at home with the online computer-based programs and teacher interactions.

8. I liked the computer-based programs observed during my child’s at-home learning.

9. I prefer my child to learn in a classroom with a certified teacher.

10. I prefer direct instruction for my child's learning program over a computer-based program.

11. I would prefer my child to learn in a hybrid option (at home and at school) over at school in a classroom or at home all the time.

Comments: ____________________________________________________________
Appendix C

Survey Questions for Students

On a scale of 1-5, with 1 being strongly disagree and 5 being strongly agree, please provide feedback regarding how you feel about techniques to enhance student learning for questions 1-6. Question 7 allows for an optional comment as desired.

1= Not at All, 2 = Rarely, 3 = Neutral, 4 = Sometimes, 5 = All the Time

1. I enjoy learning.

2. I learn best with classroom instruction directly from the teacher.

3. I learn best when using computers to guide my learning.

4. I learn best with both direct teacher instruction and computer-based instruction.

5. I feel I can focus and get more work completed in the classroom.

6. I feel I can focus and get more work completed when learning with technology or computer-based program.

7. Comments:

___________________________________________________________
Appendix D

Gordon’s Learning Stages Model

Stage 1 – Unconsciously unskilled. We don’t know what we don’t know. We are inept and unaware of it.

Stage 2 – Consciously unskilled. We know what we don’t know. We start to learn at this level when sudden awareness of how poorly we do something shows us how much we need to learn.

Stage 3 – Consciously skilled. Trying the skill out, experimenting, practicing. We now know how to do the skill the right way but need to think and work hard to do it.

Stage 4 – Unconsciously skilled. If we continue to practice and apply the new skills, eventually we arrive at a stage where they become easier, and given time, even natural.

*This Learning Stages model was developed by former GTI employee, Noel Burch over 30 years ago.
Appendix E

As-Is 4 Cs Analysis

**Context**
- Parents lack understanding about making academic, innovative learning environment decisions for their child
- Students lack understanding about the best use of technology for learning to enhance their ability and will to learn with self-efficacy
- School administrators are hesitant to invest in technology implementation

**Conditions**
- Lack of awareness among all stakeholders about the efficacy of innovative learning environments that are responsive to student and family needs
- Lack of data for decision making to provide the best innovative learning environment combination for each student
- Lack of understanding of students’ needs for performance based, learning environment choice
- Lack of teacher training and support to ensure high quality blended learning instructional implementation
- Lack of technical support to ensure seamless implementation of blended learning platforms

**Culture**
- Teachers have a lack of trust in innovative learning environments
- Teachers, leaders, & families vary in their levels of support for technology to complement traditional classroom programs
- Student performance level gaps are present in different learning environments

**Competencies**
- Learning environments support targeted on student performance levels advancing student learning gains
- Administration and teachers lack knowledge and skills necessary to transition effectively between traditional learning to blended learning environments
- Professional development is lacking to ensure teachers are effectively providing instructional excellence in different blended innovative learning environments with strong self-efficacy

**Lack of evaluations on blended learning and student achievement**
Appendix F

To-Be 4 Cs Analysis

Context
- Parents making sound, academic, innovative learning environment decisions for their children
- Students cognitively using technology for learning to enhance their ability and will to learn
- School administrators adjusting budget allocations to support advanced technology implementation

Culture
- Teachers understand and effectively incorporate innovative learning environments
- Teachers, leaders, & families understand and support the use of technology to complement traditional classroom programs
- Students are strategically placed in highly effective learning environments

Blended learning environments are supporting increased student achievement performance

Competencies
- Administrators and teachers manage customization of learning environments for students based on student needs
- Learning environments support targeted on student performance levels advancing student learning gains
- Administrators and teachers are able to transition effectively between traditional learning to blended learning environments
- Enhanced professional development programs continue to ensure teachers are effectively providing instructional excellence in different blended innovative learning environments with strong self-efficacy

Conditions
- Awareness among all stakeholders about the efficacy of innovative learning environments that are responsive to student and family needs
- Research-based decision making to provide the best innovative learning environment combination for each student
- Increased understanding of students’ needs for performance based, learning environment choice
- Teachers have ongoing training and support to ensure high quality blended learning instructional implementation
- Teachers have comprehensive technical support to ensure seamless implementation of blended learning platforms

Context
- Parents making sound, academic, innovative learning environment decisions for their children
- Students cognitively using technology for learning to enhance their ability and will to learn
- School administrators adjusting budget allocations to support advanced technology implementation

Culture
- Teachers understand and effectively incorporate innovative learning environments
- Teachers, leaders, & families understand and support the use of technology to complement traditional classroom programs
- Students are strategically placed in highly effective learning environments

Blended learning environments are supporting increased student achievement performance

Competencies
- Administrators and teachers manage customization of learning environments for students based on student needs
- Learning environments support targeted on student performance levels advancing student learning gains
- Administrators and teachers are able to transition effectively between traditional learning to blended learning environments
- Enhanced professional development programs continue to ensure teachers are effectively providing instructional excellence in different blended innovative learning environments with strong self-efficacy

Conditions
- Awareness among all stakeholders about the efficacy of innovative learning environments that are responsive to student and family needs
- Research-based decision making to provide the best innovative learning environment combination for each student
- Increased understanding of students’ needs for performance based, learning environment choice
- Teachers have ongoing training and support to ensure high quality blended learning instructional implementation
- Teachers have comprehensive technical support to ensure seamless implementation of blended learning platforms
### Appendix G

**Strategies and Action Chart**

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a Sense of Urgency</td>
<td>• Meet with state board of education members, commissioner, and university college of education provost to share comparison data between traditional teaching methods and blended eLearning methods based on a program evaluation and state assessments. Build a shared understanding around needed educational climate change.</td>
</tr>
<tr>
<td>Forming a Powerful Guiding Coalition</td>
<td>• Assemble a guiding coalition with educational leaders within the state: department of education members, and university leaders along with educators from across a wide range of teaching experience.</td>
</tr>
<tr>
<td>Creating a Vision</td>
<td>• The guiding coalition will reflect on data to establish a vision based on trending needs as impacted by the most recent change in education due to the pandemic.</td>
</tr>
<tr>
<td></td>
<td>• Address goals and values from a variety of perspectives and based on recent innovative learning data that consider students, staff, and community climate and culture looking at current challenges and future expectations.</td>
</tr>
<tr>
<td>Communicating the Innovative Vision</td>
<td>• Guiding coalition will assist in the implementation and sustainability of the concise vision that can be shared clearly and comprehensively in 5 minutes or less.</td>
</tr>
<tr>
<td></td>
<td>• Guiding coalition will help put vision into action multiple communicative processes to build common language state-wide.</td>
</tr>
<tr>
<td>Empowering Others</td>
<td>• Guiding coalition will create and initiate change structures to remove barriers and traditional ideas for teaching and learning.</td>
</tr>
<tr>
<td></td>
<td>• Guiding coalition will recognize teachers and leaders embracing new initiatives, coach those instilling traditional ideas, and use data to expound upon change.</td>
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<tr>
<td></td>
<td>• Guiding coalition will create demonstration rooms of educational personnel effectively using vision that is impacting evidence-based student achievement.</td>
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<tr>
<td></td>
<td>• Guiding coalition will remove barriers with a strategic plan to enable, enhance, and sustain actions promoting vision.</td>
</tr>
<tr>
<td>Planning and Creating Short-Term Wins</td>
<td>• Guiding coalition will engineer a plan to recognize short-term wins within performance from leaders, teachers, students, and the community.</td>
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<tr>
<td></td>
<td>• Each win will follow an intentional plan that celebrates, communicates, and encourages improvement, not complacencies.</td>
</tr>
</tbody>
</table>
| Consolidating and Improving | • Guiding coalition will use credibility to earn validity and reliability for continued change.  
• Guiding coalition will continually recruit, hire, and promote individuals attempting to take risks to maintain ultimate goal to maintain urgency and expand knowledge.  
• Guiding coalition will recognize change initiators and change resistors that create a false sense of security or premature finish. |
| Expanding and Sustaining Innovation | • Guiding coalition will have a process to:  
• articulate with evidence new behaviors, approaches, structures, and success that improved performance.  
• recognize when the “way of work” is permanent and sustainable. |