NEW HORIZONS IN A NEXT GENERATION SCHOOL: A CASE STUDY OF RURAL ALABAMA MIDDLE SCHOOL STUDENTS IN A TRANSFORMATIONAL INITIATIVE

by

Jack Harley Lamey, Sr.

Liberty University

A Dissertation presented in Partial Fulfillment
Of the Requirements for the Degree

Doctor of Education

Liberty University

2017
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2017

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ABSTRACT

The purpose of this case study was to understand non-mastery for students in the mBolden Academic Model at Piedmont City Middle School (PCMS). The following research questions guided this study: How does the mBolden Academic Model influence student success at Piedmont City Middle School? Furthermore, this study has answered the following sub-questions: What internal factors affect student success and failure in the mBolden Academic Model? What external factors influence success for students in the mBolden? This study examined a bounded set of students at a rural school in Northeast Alabama that implemented a mastery-based, blended learning model. Data collection included documents, interviews, and focus groups. Data was analyzed and coded into categories and then into three themes: (a) Student Workload, (b) Teacher Disconnect, and (c) Content Disengagement.

Keywords: blended learning, mastery-based learning, one-to-one initiative, project based learning.
Dedication

I, Jack Harley Lamey, Sr., dedicate this work to the glory of my Savior and Lord, Jesus Christ, who brought me from death to life, the author of my comeback story. May He receive all the honor and glory forever and ever, Amen.
Acknowledgements

I would like to acknowledge the grace and patience demonstrated to me by my wife and son. Heather, thank you for believing in me and believing in this journey that we have been on. Jack, I pray that my efforts will inspire you to stretch yourself to do great things for the name of Jesus. May God richly bless you as you have blessed me. I would like to offer a special acknowledgement to my Mom and Dad for giving me the belief that I could do anything. To family and friends, I extend to you my deepest thanks for your help and support. I love you all.
# Table of Contents

ABSTRACT ....................................................................................................................... 3

Dedication .......................................................................................................................... 4

Acknowledgements ........................................................................................................... 5

List of Tables ..................................................................................................................... 11

List of Abbreviations ....................................................................................................... 12

CHAPTER ONE: INTRODUCTION ................................................................................. 13

Overview ......................................................................................................................... 13

Background ....................................................................................................................... 14

  Historical Context .......................................................................................................... 14

  Social Context ................................................................................................................. 15

  Theoretical Context ....................................................................................................... 16

Situation to Self ................................................................................................................ 17

Problem Statement ......................................................................................................... 18

Purpose Statement .......................................................................................................... 19

Significance of the Study ................................................................................................. 20

Research Questions .......................................................................................................... 21

  Central Question ........................................................................................................... 21

  Sub-questions ............................................................................................................... 21

Definitions ....................................................................................................................... 22

Summary .......................................................................................................................... 22

CHAPTER TWO: LITERATURE REVIEW ....................................................................... 23

Overview .......................................................................................................................... 23
Theoretical Framework ................................................................. 23

Social Cognitive Theory ............................................................ 23

Constructivism ........................................................................... 25

Related Literature ...................................................................... 27

Self-Paced Instruction/Personalized Learning .............................. 28

Mastery Based/Blended Learning ............................................... 29

Flipped Instruction .................................................................... 33

Challenge Based Learning ......................................................... 34

One-to-One Computer Initiatives .............................................. 38

Student and Teacher Interaction With Technology .................... 40

Computer Aided Instruction ..................................................... 41

Student Engagement .................................................................. 42

21st Century Learning Skills ..................................................... 43

Grit and Tenacity ....................................................................... 50

Professional Development ......................................................... 51

Summary ..................................................................................... 51

CHAPTER THREE: METHODS .......................................................... 53

Overview .................................................................................... 53

Design ........................................................................................ 53

Research Questions ..................................................................... 54

Central Question ......................................................................... 54

Sub Questions ............................................................................... 54

Setting ........................................................................................ 54
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>55</td>
</tr>
<tr>
<td>Procedures</td>
<td>56</td>
</tr>
<tr>
<td>The Researcher's Role</td>
<td>57</td>
</tr>
<tr>
<td>Data Collection</td>
<td>58</td>
</tr>
<tr>
<td>Documents</td>
<td>58</td>
</tr>
<tr>
<td>Interviews</td>
<td>59</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>62</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>64</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>65</td>
</tr>
<tr>
<td>Credibility</td>
<td>65</td>
</tr>
<tr>
<td>Dependability</td>
<td>66</td>
</tr>
<tr>
<td>Confirmability</td>
<td>66</td>
</tr>
<tr>
<td>Transferability</td>
<td>66</td>
</tr>
<tr>
<td>Ethical Considerations</td>
<td>66</td>
</tr>
<tr>
<td>Summary</td>
<td>67</td>
</tr>
<tr>
<td>CHAPTER FOUR: FINDINGS</td>
<td>68</td>
</tr>
<tr>
<td>Overview</td>
<td>68</td>
</tr>
<tr>
<td>Participants</td>
<td>70</td>
</tr>
</tbody>
</table>

Participants: Mitch, Er, Nikki, Myra, Curtis.

**Error! Bookmark not defined.**

Nikki ................................................................. 70
Myra ................................................................. 71
Curtis ................................................................. 71
Billy .............................................................................................................. 71
Marcus ........................................................................................................... 72
Tracy .............................................................................................................. 72
Mike .............................................................................................................. 73
Desmond ........................................................................................................ 73
Shawn ............................................................................................................ 73
Fischer ............................................................................................................ 74
John ............................................................................................................... 74
Emma ............................................................................................................ 75
Paige .............................................................................................................. 75
Al ..................................................................................................................... 76
Sarah ............................................................................................................. 76
Nathaniel ...................................................................................................... 77
Results .......................................................................................................... 78
Theme Development ..................................................................................... 79
Research Question Responses .................................................................... 83
Summary ....................................................................................................... 88
CHAPTER FIVE: CONCLUSION ...................................................................... 89
Overview ...................................................................................................... 89
Summary of Findings .................................................................................... 89
Central Question .......................................................................................... 89
Sub-Question 1 .............................................................................................. 90
Sub-Question 2 .............................................................................................. 90
List of Tables

Table 1. Semi-structured Interview Questions for PCMS Students in mBolden Model.........60
Table 2. Questions for Focus Groups of PCMS Students in mBolden Model..................63
Table 3. Student Participants.................................................................78
Table 4. Codes and Themes.................................................................80
List of Abbreviations

Adequate Yearly Progress (AYP)
Challenge Based Learning (CBL)
Computer Aided Instruction (CAI)
Learning Management System (LMS)
Partnership for 21st Century Learning (P21)
Piedmont City School District (PCSD)
Piedmont City Middle School (PCMS)
Problem Based Learning (PBL)
CHAPTER ONE: INTRODUCTION

Overview

Education today is not centered on the content but rather the student, and while this may be open for debate, time must not be spent on an unnecessary argument. The Organization for Economic Co-Operation and Development (2012) stated American students continue to fall behind their counterparts around the world. The Hanover Research Institute (2011) concluded that American schools are not equipping students with skills and knowledge so that they can contribute to society, and because of this, many school districts have attempted to mirror the fast-paced technological boom that has consumed the culture of the world (University of Cincinnati, 2015). Toyoda (2001) stated that teachers are no longer viewed as the sage on the stage, but rather as facilitators or guides for their students as these students are increasingly given more autonomy over their educational journey. Project-based learning, mastery-based learning, and blended learning are just a few of the more recent programs that many districts now use because of the flexibility, and more importantly, the ownership it gives students.

The purpose of this cross-case study was to understand non-mastery for students in the mBolden Model at Piedmont City Middle School. At PCMS, student mastery is a score of 80% or above on the first attempt of the mastery test and being up-to-date on progress. At this stage in the research, non-mastery is defined as receiving a score less than 80% on assigned standards and not being up-to-date. Students in the top quartile and bottom quartile of scores on the Mastery Connect Learning Management System will be used for this study. Case study is an appropriate design because it is “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2013, p.16). A cross case study was used
because it can be “performed whether the individual case studies have previously been conducted as independent research studies (authored by different persons) or as a predesigned part of the same study” (Yin, 2013, p.156). Providing the theoretical framework for this study was two theories: the social learning theory and the constructivist theory. The first theory, social learning theory, Bandura (1977) stated that learning comes from experience. The second theory, the constructivist theory, involves the idea of providing scaffolding for students until they are ready to learn on their own (Jones & Brader-Araje, 2002). The paradigm that this study is viewed from is social constructivism. Guba and Lincoln (1994) claimed, “…any given paradigm represents simply the most informed and sophisticated view that its proponents have been able to devise” (p. 108). Chapter One introduces and discusses the initial framework of the proposed research study by developing the background of the study. Next, the study will clarify the author’s positioning in the situation to self. Finally, after the situation to self will be the problem statement, purpose statement, significance of the study, and research questions.

**Background**

**Historical Context**

Education is much like technology in that there is always a bigger and better option that often draws buyers, or in the case of education, the administration. In education, there is an educational program format called one-to-one learning. This is giving each child a device for his or her own personal use 24 hours a day, 7 days a week. A device can be a laptop or a tablet that has basic Internet connectivity and the ability to run basic applications. These programs can be traced back to 1989 at the Ladies Methodist College in Australia, where many believe the first one-to-one program was implemented (Richardson, McLeod, Flora, Sauers, Kannan, & Sincar, 2013). One-to-one programs are able to provide the resources without having to share the
technology, which Bebell and Kay (2010) and Oppenheimer (2003) proved can diminish the full effects of the technology. One-to-one computing programs have increased student improvement on standardized test scores, increased graduation rates, an increase in student engagement, and the development of 21st century learning skills (Corn, Huff, Halstead, & Patel, 2011). These advancements have allowed for students in modern society to change from previous generations. This information and the push for 21st century skills: collaboration, creativity, critical thinking, problem solving, and decision-making, requires teachers to constantly discover the best methods to engage their students.

**Social Context**

In 2009, the Piedmont City School District (PCSD) implemented the one-to-one-technology initiative: mPower Piedmont. This program enabled students to have use of an Apple MacBook for every day during the school year and even in the summer should the student take summer courses. In addition to the MacBooks, this initiative also allowed students to become familiar with the use of the Angel Learning Management System. Students were also exposed to web content not readily available before mPower Piedmont. Administrators viewed this initiative as a moderate success, but there were still students that were not meeting the educational standards for their appropriate level. This problem evolved from the downward drift that the creators of the mPower Piedmont initiative were beginning to see. This trend, as well as information gathered from a student Gallup poll, as reported by NextGen Learning (2015), conducted at Piedmont Middle School showed students had feelings of hopelessness, lack of engagement, and overall well-being, these results prompted the administration to take action. This action would be in the form of a transformational initiative called mBolden Piedmont. This program was designed to promote success in college and career and build non-cognitive skills
like grit and tenacity by using mastery learning, blended learning and challenge based leaning are used to achieve advanced mastery, relevance, and student ownership by participation in three main components of the mBolden Piedmont mode: (a) Class Time, (b) Goal Time, and (c) My Time (NextGen Learning, 2015). Class time draws its focus from direct instruction either in large or small groups. Class Time groups are created by performance and/or what standard the student may be on. Goal time is focused on building relationships, exploring personal interests, setting and evaluating the progress of these goals. My Time is designed for the student to have the opportunity for independent work that can be used by the student to work ahead, or in some cases, catch up on work the student may be behind on.

This shift to individualized learning gives hope to those who believe that a rural system can experience anywhere/anytime learning. Over the next few years, the mBolden Model is slated to be scaled up to the ninth-grade students at Piedmont High School and scaled down to the fifth-grade students at Piedmont Elementary School. Before the expansion is fully implemented, it should be determined whether or not the model is meeting the needs of the students.

**Theoretical Context**

This movement finds its theoretical basis in constructivism and the modeling effects found within the social cognitive theory. It is important to note that the mBolden Academic Model is saturated in the tenets of the constructivist theory as Piaget (1955) described it. Students must be able to construct his or her own knowledge through their academic journey in order for learning to occur. Dewey (1938) also believed that students must acquire knowledge through experience and not simply by assimilation. Social cognitive theory also points to learning by experience through modeling or seeing what others do. Bandura (1989) argued that
human beings will adopt characteristics from their environment and from interaction with said environment. These two theories, constructivism and social cognitive theory, are intertwined in that the learner is driven to inquiry by environmental influences that are either from what they see or what they guided to do by an outside entity. These influences are a part of the program, mBolden Piedmont.

**Situation to Self**

I want to examine the mBolden Piedmont Academic Model for its effectiveness because I see the need for a program that can give every student the opportunity to achieve his or her dreams. It is my responsibility as an educator to look for ways to improve all aspects of my school district and to leverage myself in a manner that can give opportunity to enhance our product. From that comes my desire to determine the factors that cause students to not meet their goals within a middle school that is participating in a mastery based, personalized learning environment. It is my desire to gain information from the student perspective; therefore, this study will be guided by a constructivist paradigm as I search for the inner framework of the student/program interaction.

The philosophical assumption brought to the study is ontology which Grix (2004) defines as, “claims and assumptions that are made about the nature of social reality, claims about what exists, what it looks like, what units make it up and how these units interact with each other” (p. 59). I want to know how students are really functioning in the mBolden Model and how the model really works.

Over the past 20 years, I have lived my life by the teachings of Jesus Christ, and I see serving as an educator as a calling and a privilege. As a public-school educator, I was the administrator of the Piedmont City Alternative School 1 year. I went on to teach physical
education for five years, one year in a middle school setting and four years in an elementary school setting. After my final year at the elementary school, I took a position teaching digital media and health at Piedmont High School. I have remained in this position for 7 years, where I have become the yearbook sponsor and assist with administrative duties.

I have a child coming through the PCSD, which increases my desire to enhance the success of the programs implemented. Over the past 2 years, I have been given administrative roles to assist the administration and gain experience in leadership. Because of this service, I have been afforded the opportunity to see the framework of the academic models at work in Piedmont. It is my desire to understand what is the disconnect the students face that inhibits success in this model.

**Problem Statement**

Blended learning, which is a blend of using classroom technology with traditional teaching methods, is shown to have higher engagement and satisfaction than traditional courses (George-Palilonis & Filak, 2009), but with the new initiatives using new approaches, there are problems such as learning management system usage (Al-busaidi & Al-shihi, 2012), planning and design, and the inability of teachers to fully immerse their students into the blended environment (Jokinen & Mikkonen, 2013). These issues, coupled with the student issues of hopelessness, lack of engagement, and overall well-being (NextGen Learning, 2015) prompted the Piedmont City School District to develop the next level of the mPower Piedmont one-to-one laptop initiative, mBolden Piedmont. This new model was viewed as a method to improve on the success of the mPower model, but it has not met all expectations (NextGen Learning, 2015). Many students are still not meeting the mastery requirements set by the mBolden Model as shown by Mastery Connect Scores. Research suggests that motivation is key to success in
mastery based learning approach (Changeiywo, Wambaugh, & Wachanga, 2011; Liu & Yu, 2012). This motivation can either be extrinsic or intrinsic. It is unknown if the students in this model are experiencing a lack of motivation; therefore, exploring the perceptions of the students involved is paramount to understanding how the mBolden Piedmont Academic model can better serve the students of the PCSD. Few studies provide in-depth understanding of the context for understanding what effects student mastery.

**Purpose Statement**

The purpose of this cross-case study was to understand mastery and non-mastery for students in the mBolden Model at Piedmont Middle School. Within the mBolden model, students achieve mastery if they score 80% or higher on the first attempt of the mastery test. At this stage in the research, highest performing will be students who obtain mastery at 80% or above on assigned standards on the first attempt on the standard and lowest performing will be defined as students who score less than 80% on assigned standards. The theories guiding this study are Bandura’s (1977) social learning theory as it relates to student experiences contributing to student mastery, or lack thereof. Golding (2009) stated the organization of old units of knowledge and constructing them into new meaningful ones, as it relates to student mastery, is known as the theory of constructivism. This study examined the student interaction with the academic model, which will lead to themes to be analyzed to determine the presence of factors that prevent academic success. The unit of analysis for this involved two groups of ten students contained within one middle school setting. First, teachers were not included in this study as the aim is not to gather data on the teachers but rather the students. Secondly, administrators were not included as it would place them in a difficult position to answer questions pertaining to the effectiveness of the model.
Significance of the Study

The proposed research study contributed to the body of literature by filling a gap formed by the creation of the mBolden Piedmont Academic Model. There is an abundance of research regarding mastery-based learning, project-based learning (PBL) or challenge-based learning (CBL), and blended learning, but the programs that are represented in the studies are exclusive to one of the styles (Argueta, Huff, Tingen, & Corn, 2011; Bebell & Kay, 2010; Corn et al., 2011; Drayton, Falk, Stroud, Hobbs, & Hammerman, 2010; Holley, & Oliver, 2010; Liu, & Yu, 2012). mBolden Piedmont is the first to incorporate these different methods along with the variations of the student schedules. It is key to potential programs to have information from the pilot to assist in going forward. Student success is the goal for teachers and administrators, and dissecting this program and discovering the potential downfalls can provide a new path for upstart programs to follow.

The proposed research study provided data that will assist administrators in similar academic models by identifying effective and non-effective aspects of the mBolden Academic Model. Results from the study will contribute to the body of evidence that the Piedmont City School District (PCSD) has gathered in the implementation and management of their learning initiatives. Having a clear understanding of how the student views the mBolden Piedmont model may help administrators in identifying factors that may contribute to student success. This study gave the students a voice that can be used in the improvement in the design and implementation of the model going forward.
Research Questions

Central Question

How does the mBolden Academic Model influence student success at Piedmont City Middle School?

Sub-questions

1. How does the mBolden Piedmont Academic Model impact mastery for students at Piedmont City Middle School?
2. What internal factors influence success for students in the mBolden Piedmont Model?
3. What external factors influence success for students in the mBolden Piedmont Model?

The central question was designed to examine the impact of the mBolden model as current research shows that using group-based mastery learning could give students perceived control and lead to higher achievement (Ritchie & Thorkildsen, 1994).

Research subquestions one and two were designed to examine the components of the mBolden Academic Model as research shows that internal factors such as student interaction in class time, effective use of My Time, rapport with advising teacher are important to student success as individual components of the mBolden Piedmont model (Dekhane, Napier, Smith, 2004; Gallagher, Steprien, & Rosenthal, 1992; George-Palilonis & Filak, 2009; Holley & Oliver, 2010; Johnson & Adams, 2011; Liu, & Yu, 2012; Mayo, Donnelly, Nash, & Schwartz, 1993; Wessels, Fries, Horz, Scheele, & Effelsberg, 2007). Research subquestion three was designed to examine the external factors of course delivery, learning management system usage, and Internet issues. Studies show that these factors may affect student success (Lin, Liu, Chen, Liou, Chang, Wu, & Yuan, 2013; Lin, Liu, & Yuan, 2008; Mosalanejad, Shahsavari, Sobhanian, & Dastpak, 2012; Ritchie & Thorkildsen, 1994).
Definitions

1. *Blended Learning* - A learning model that combines traditional teaching techniques with new methods such as online learning, mobile technologies (Moskal, Dziuban, & Hartman, 2013).

2. *Challenge Based Learning (CBL) or Problem Based Learning (PBL)* – A learning model in which students use technology within their groups to collaborate together in an attempt to solve issues present in real life (Apple Computer, 2011).


4. *Learning Management System (LMS)* – An online platform that allows for simultaneous distribution of information, assignments, and other course materials to class participants (Baleghi-Zadeh, Ayub, Mahmud & Daud, 2014).

5. *One-to-One Computer Initiatives* – A program in which participants are given a device, typically a laptop computer, to use for educational purposes (Penuel, 2006).

Summary

This chapter provided an overview of the research study as well as background for the study. Researcher motivation, philosophical assumption, and paradigm were also discussed. Through the examination of the mBolden Piedmont Academic Model it has been revealed that there is a gap in the literature due to the empirical nature of the model.
CHAPTER TWO: LITERATURE REVIEW

Overview

Chapter Two provided a theoretical framework for the proposed study and a review of the pertinent literature pertaining to the mBolden Piedmont Academic Model. The study was grounded in Bandura’s (1973) social cognitive theory and Piaget’s constructivist theory. Social cognitive theory states that behavior is a combined result of environment and person. The theoretical framework applies to the effect of a person’s experiences and environment on desired behavior or outcomes. Constructivism stated that learning is a constructive process where the learner is constantly building or ‘constructing’ his or her own knowledge (von Glaserfeld, 2005). The mBolden Piedmont Academic Model was created to give student ownership and increase levels of hope for the students within the district. Since the case was empirical, the literature gave a brief description and historical perspective of the components of the mBolden Piedmont academic model. These were: self-paced education, mastery based learning, flipped instruction, challenge-based or problem based learning and one-to-one computer initiatives, developing grit and tenacity, and increased professional development. A review of current literature produced research on each of the components of the mBolden Piedmont Academic Model: blended learning/flipped instruction, challenge based learning, mastery based learning, and one-to-one initiatives, but did not produce results containing all in one.

Theoretical Framework

Social Cognitive Theory

Bandura’s (1973) research with children showed that when the children see aggressive behavior, they mimic that behavior, called the social learning theory. Bandura’s social learning theory provided a way to understand and explain human behavior. In 1986, this theory was
renamed as the social cognitive theory (Bandura, 1989). Social cognitive theory was based on the assumption that human behavior is not predicated on the behaviorist notion that people are affected by outside influence or the humanist belief that people are free agents, but rather that all parts-behavior, cognition, and external influences— bring about change. People then can use their own ability to self-regulate. The main structure of this self-regulation mechanism was self-efficacy, which was the belief that a person has in their ability to “function as contributors to their own motivation, behavior, and development within a network of reciprocally interacting influences” (Bandura, 1989, p. 169). Gurung (2010) affirmed that this can be brought about by an internal desire or through modeling. Bandura (1973) stated that symbolic modeling is the method that people learned by seeing another complete the action and not learning through trial and error. Bandura conducted a series of experiments to prove observational learning is the method by which people learn. The Bobo experiment saw adults modeling aggression towards a doll in the form of a clown, Bobo thus the children that saw the aggression in humans would in turn act aggressively towards the Bobo doll (Bandura, 1989). On the contrast, students that saw non-aggressive behavior in the adults displayed this docile activity towards Bobo (Bandura, 1989). Even though this experiment was groundbreaking, it was frowned upon due to its use of human children as subjects; however, the Bobo experiment did prove Bandura’s (1989) hypothesis that people learn from modeling. In addition to this, social learning theory also provided a framework for therapeutic interventions such as modeling the safe handling of a snake to coax a person that has a phobia of snakes to interact with the reptile.

Bandura (1989) stated, “People are neither driven by inner forces nor automatically shaped and controlled by the environment” (p. 8). From the social cognitive theory, the self-efficacy theory emerged. Bandura (1989) believed that self-efficacy is the primary method to
facilitate behavior change through goals and self-evaluation and can be defined as an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance goals. Student success is often supported by some form of motivation. Low-income districts may see a larger number of students that have situations that model hopelessness and despair. These attributes can adversely affect motivation and can give a skewed perception of self-efficacy. People “Function as contributors to their own motivation, behavior, and development within a network of reciprocally interacting influences” (Bandura, 1989, p. 169). Self-efficacy is an umbrella term that covers a person’s belief that they can control behavior, social environment, and motivation (Bandura, 1989). Gurung (2010) said, “The most central of all mechanisms of self-regulation is self-efficacy, defined as the belief that one has the ability, with one’s actions, to bring about a certain outcome” (p. 1816). Self-efficacy can be summed up in the phrase, believe it and you can achieve it. Bandura (1989) believed that people with a high sense of efficacy were able to see themselves is successful situations that would guide them toward that successful outcome. This was known as anticipatory cognitive simulation. In the same manner that a person could visualize good things happening, Bandura thought the individual could also believe that they are able to manage potentially difficult situations and not be moved by them. An individual’s belief in his/her own capabilities will affect his/her response to stressful situations, this is known as Intrusive Affective Arousal (Bandura, 1989).

**Constructivism**

Constructivism theory stated that learning is a constructive process where the learner is not given knowledge but rather constantly constructing his or her own knowledge (Von Glasersfeld, 1989). Learners are not a blank canvas awaiting a painting to be placed upon them but rather a tapestry woven by experience that can bring both good experiences and bad, insight
and ignorance, pleasure and pain. These experiences become filters that the student unknowingly applies to learning and if this filter has its foundation in error, then the knowledge may be skewed. The teacher was charged with determining the depth and accuracy of the prior knowledge and adapt the material to facilitate learning.

Piaget (1955) claimed that that humans cannot simply be given information to gain knowledge; they have to construct their own knowledge, also known as cognitive constructivism. To learn is to construct. Moreover, Piaget (1955) stated, “Every acquisition of accommodation becomes material for assimilation, but assimilation always resists new accommodation” (p. 385). Later, researchers would state that knowledge is gained through good and bad choices by the person but for Von Glaserfield, this was incorrect because “truth in constructivism is replaced by viability” (Jones & Brader-Araje, 2002, p. 3). Constructivists believed that students are constructed by teachers in a way that allows for student guided inquiry while being assisted by the teacher, also referred to as scaffolding. In the mBolden Model, students were given more ownership of his/her learning path. Student ownership aligns with Ultanur’s belief on the role of a teacher. “The teachers’ task is to facilitate the child’s learning and act as a guide. Decentering the teacher authority is shared so that students may engage and critique the education they are undertaking” (Ultanur, 2012, p. 209). When the teacher feels that the student is ready, then the scaffolds are removed and the student can be a more independent learner. Scaffolding is important because it allows for the student to develop grit and tenacity, both of which are goals of the mBolden Piedmont Academic Model (NextGen Learning, 2015).

Along with scaffolding, student ownership and responsibility are goals of a constructivist program. When students become more involved with their own success a community of inquiry can develop. Golding (2009) said that in a community of inquiry, student discussion is directed
by the students and the teacher takes on a coach role that allows the students to “engage in independent, productive discussion” (p. 475). Along with this, Golding (2009) also stated that participation in an unstructured discussion “is essential ground-work for setting up a group that can, and is willing to, discuss together” (p. 472).

Another leader in the constructivist movement, Dewey (1938) believed that children should be taught in a manner that reflected how they spent their early years learning, through experience. With this style of teaching comes a unique situation in that every child will have a different line of experience. This created a difficult situation for the teacher. The teacher must design learning situations based on previous experiences that the students bring with them. It took time for the teacher to determine where the student is at in his/her experience level, and depending on the willingness of the student to open up, this process could drag well into the school year. It was the task of the teacher to determine where students are through the use of surveys, pretests, evaluations, etc. and assist them in advancing to a place where less assistance is required.

**Related Literature**

It is a startling truth that educational technology has quickly become the new normal in America. Colleges and universities use online courses as a way to offer non-traditional paths to students seeking certain educational goals. High schools have begun this transition to online formats. This can be a valuable resource for struggling students with credit recovery and alternative placement but also for those students that want to work ahead and in some cases, graduate early (George-Palilonis & Filak, 2009). The PCSD created the mBolden Academic Model in an attempt to transform the educational environment within the rural town of Piedmont. Due to the design of the mBolden Piedmont Academic Model, the following section presents an
overview of the components of the mBolden Piedmont Academic Model: Self-paced/personalized learning, mastery based learning/blended learning, flipped instruction, challenge based learning, and one-to-one computer initiatives. These components were all aimed at the students being college and career ready and increasing non-cognitive skills, grit and tenacity.

**Self-Paced Instruction/Personalized Learning**

Studies show that self-paced instruction, or personalized learning, had issues pertaining to implementation, but with the correct framework in place, the change can be relatively seamless (Al-busaidi & Al-shihi, 2012). Using Bloom’s learning for mastery, the evolution of mastery-based learning has led educators to using small units of information to determine whether or not the student learned the content. Research shows that while these types of programs can help students, this help is contingent upon the effectiveness of the teacher, or in this case, the delivery format (Al-busaidi & Al-shihi, 2012; Jokinen & Mikkonen, 2013).

Patrick and Sturgis (2013) point out that education, as with other sectors of public life, has been faced with the boom in technology that has forced districts to rethink the approach to education to give students the skills they will need in the future. School districts confronted with the idea that students need to be prepared, not necessarily for a manufacturing job, but rather a vast array of opportunities for their students. One way to inject this preparation is anytime/anywhere learning. Anytime/anywhere learning is what Patrick and Sturgis (2013) believe will be the future of education in America. Community engagement, school autonomy, staff roles, having a clear standard for success, an overall strategy of transition, and professional development and leadership development are all needed for success in a personalized education program.
Along with anywhere/anytime learning, the Piedmont City School District has identified student reflection as a means to assess and measure the effectiveness of the assignments within the student’s individualized plan (Smith, 2014). Reflection allows the student to look back at the time spent on the assignment, the amount of effort it required, and what methods and strategies worked best so that the next round may become increasingly efficient (Dickfos, Cameron, & Hodgson, 2013). In the mBolden Academic Model, the students were given time set aside for reflection to occur (Smith, 2014). This information was also discussed with the student’s Team Time teacher to help the teacher get an idea of how the student is doing. Self-reflection was also a strategy that the PCSD suggested that its teachers use to help themselves identify shortcomings in their presentation of the assigned material. By identifying these potential downfalls, the teachers remained proactive in their preparation, always improving for the sake of the students.

**Mastery Based/Blended Learning**

John Carroll (1963) published his research titled *A Model of School Learning* which looked at foreign language students and the time it took for them to master criterion that was assigned to them. The goal of mastery-based learning was to make sure all learners master all of the assigned objectives or standards with no disparity (McGahie, Issenberg, Barsuk, & Wayne, 2014, p. 376). Carroll (1989) had five classes of variables that he listed that would show variations in school achievement: “Aptitude, opportunity to learn, perseverance, quality of instruction, and ability to understand instruction” (p. 21). Carroll’s (1989) work would influence Benjamin Bloom, an educational psychologist that created mastery learning theory and Bloom’s Taxonomy of Learning Objectives (Bloom, 1968). In 1968, Bloom developed an instructional strategy that incorporated students working on assignments and then seeking feedback from the teacher. This would initially be called learning for mastery. As years passed, the name would be
changed to mastery learning. Changeiywo et al. (2011) said, “The focus of mastery learning approach is to reach a set mastery of small units of instructional objectives” (p. 1344). Units are developed based on assigned curriculum and students are allowed to work on these units for a specific amount of time. Carroll (1989) believed that all students could learn the material, just not at the same pace. At the onset of the new unit, an assessment was given to determine the prior knowledge the student has on the material. If the student showed mastery, teachers offered enrichment or in the case of the mBolden model, the student moved to the next unit. If the student did not show mastery, then the teacher offered remediation activities to strengthen the student’s understanding of the material. This was the part of the process in which a teacher could begin to scaffold the student’s learning to steady the foundation of what was to come in the unit. At the end of the unit, an assessment was given that allowed the teacher and student to identify areas that needed remediation or if the student could move on.

Mastery based learning was also credited with inspiring academic improvements (Kulik, Kulik, & Bangert-Drowns, 1990). Despite these improvements, this success may still hinge on the effectiveness of or simply the presence of the teacher. Jokinen and Mikkonen, (2013) “revealed that it is especially challenging for educators to enhance student learning without being continuously present” (p. 528). Research also showed that students were less likely to follow instructions and provide content rich answers on work completed outside of the presence of the teacher (Dovros & Makrakis, 2012). In new educational program design, the teacher may not have the traditional responsibilities, but he/she remained paramount in the instructional process. Course delivery format or delivery method may be the linchpin that holds it all together. As with any course offered in an online format, ease of use was important. Even though it is often a huge change from the norm, mastery based learning was welcomed by teachers and instructors when it
was provided through an effective delivery format (Al-busaidi & Al-shihi, 2012). The delivery format is also known as the learning management system (LMS). The LMS plays a vital role in the success of a student in a blended learning environment. Research conducted by Al-busaidi and Al-shihi (2012) found “that instructor satisfaction of LMS is a key determinant of their continuous use of LMS in blended learning. The study by Al-busaidi and Al-shihi (2012) also found that instructor satisfaction of LMS in blended learning was a key determinant of their intention to purely use LMS for distance education” (p. 35). The LMS provided communication, collaboration, a place to submit assignments, and a course delivery vehicle. If this component was not high quality, the students and teachers may have an unfavorable experience and Lin, et al. (2008) showed “modality of learning material on the web may affect student’s learning performance” (p. 218).

Along with course delivery, assessment was a key component of mastery based learning. Assessment in mastery based learning was usually a criterion-referenced assessment (Lin et al., 2008). Student scores are not compared with other students’ scores, but rather if the student has mastered the standards as dictated by the pacing guide. This method of teaching was the foundation for the mBolden Model in the PCSD which has a technology rich component in its central structure. Liu and Yu (2012) studied English learning efficacy and efficiency in the blended environment to discover methods that could lead to an accurate prediction of student performance. This study and others showed mastery based learning is enhanced through technology, including video and other web-based tools (Lin, et al., 2013; Lin et al., 2008; Mosalanejad et al., 2012; Ritchie & Thorkildsen, 1994). Along with the mastery based learning component, mBolden also incorporated blended learning into the structure. The Christensen Institute for Disruptive Innovation (2015) defined blended learning as “at least in part through
online learning, with some element of student control over time, place, path, and/or pace; at least in part in a supervised brick-and-mortar location away from home; and the modalities along each student’s learning path within a course or subject are connected to provide an integrated learning experience” (p. 1). A blended learning environment may cause students to experience a certain level of “culture shock” when they begin working in this type of environment. It required an increased level of self-discipline and self-regulation to complete the required assignments during the allotted time frame (Moskal et al., 2013). Because of this, preparation was important as a school attempted to make the switch to a blended environment. Holley and Oliver (2010) completed a case study that showed that students that were equipped for entering the blended environment experienced a greater level of success upon entering the blended environment.

“Blended learning requires confidence in learning, choosing familiar ground, being prepared to be open and working together in a safe and supported situation with both face-to-face and online support” (Holley & Oliver, 2010, p. 693).

Coupled with students being properly equipped for the transition to a blended environment, student motivation was vital to success. Deci and Ryan (1985) discussed two types of motivation that students must possess: extrinsic and intrinsic. Extrinsic motivation involved rewards that can be earned and are tangible while intrinsic focused on doing something because it is enjoyable or beneficial (McGahie, Issenburg, Barsuk, & Wayne, 2014). Blended learning situations also may increase student satisfaction. Studies showed that having a positive experience in blended learning translated to engagement as students in blended learning situations have a less negative view of their course than their traditional counterparts (Dekhane et al., 2004; George-Palilonis, & Filak, 2009; Liu, & Yu, 2012; Wessels et al., 2007), which could lead to an increase in engagement. A study conducted by Ritchie and Thorkildsen (1994)
showed, “Mastery learning programs may also influence perceptions of control and contribute to increased academic scores” (p. 89). This was a result of the feeling of relevance or ownership that the student gained from being in a mastery-based program. Student ownership in education was seen as a key component of successful academic models because of the buy-in that it created from the student being forced into setting goals for themselves. Goals within a mastery based program served as extrinsic motivation for each student; that is why the mBolden Model focused on two types of goals: educational and personal.

**Flipped Instruction**

Accompanying individualized and mastery learning in the mBolden model, flipped instruction was the process of teachers providing direct instruction resources outside of the classroom through technological means. “Flipped instruction consists of pre-recorded direct-instruction lecture content which is made available online for students to access at home” (Egbert, Herman, & Lee, 2015, p. 3). Examples are lectures viewed on YouTube, video files downloaded to the student device, videos embedded in the learning management system, files containing info on the assignments, etc. Teachers assigned the lectures and other assignments for the students to view outside of the class time which gave the student the opportunity to collaborate with classmates and interact so that they could seek out information needed to meet their learning needs. Flipped instruction as a teaching method allowed for a more robust and detailed discussion in the classroom as the lecture or direct instruction was completed away from the classroom (Herreid & Schiller, 2013). Tucker (2012) described the class as a place to solve problems, develop ideas and collaborate; however, because most studies on flipped instruction are “self-reporting” the data on these programs was scarce (Egbert et al., 2015).
**Challenge Based Learning**

The mBolden Model called upon the teacher to use challenge based learning, sometimes referred to as problem based learning (PBL). Research by Dolmans and GijBels (2013) showed that this is to be a collaborative, self-directed, constructive, and contextual process. Studies also showed that time management, the development of 21st Century skills, and several skill areas were developed by participation in PBL (Gallagher et al., 1992; Johnson & Adams, 2011; Mayo et al. 1993).

John Dewey (1938) believed that students would gain a sense of reflection and intelligence by using the scientific method and working together with others (Gutek, 2011). This was the foundation to problem-based or challenge-based learning (CBL) or problem-based learning (PBL). Dolmans et al., (2005) stated that there are four key learning principles of PBL/CBL: “Learning should be a constructive process, learning should be a self-directed process, learning should be a collaborative process, and learning should be a contextual process” (pp. 732-733).

The CBL model was gaining momentum as a viable teaching method and even as a practical curriculum model. In CBL, students use technology within their groups to collaborate together in an attempt to solve issues present in real life (Apple Computer, 2011). CBL contained material and techniques in a multidisciplinary approach to teaching and learning as CBL projects often incorporated several different subjects. This allowed for cross-curricular engagement.

Whether it is using math to determine the amount of rainfall in a particular region of the world or using language arts to compose a letter to a government leader, CBL gave the teacher the ability to bring in all subjects to complete the project. CBL began by students developing a Big Idea, which was a broad term that encompassed several issues such as famine, world hunger, etc. It was up to the students to develop an Essential Question that will “reflect the interest of the
students and the needs of their community” (Apple Computer, 2011, p.2). This helped the student feel a personal connection to the Big Idea and this buy-in was key to the student success. From the Big Idea, the essential question was developed. The essential question was a broad scope inquiry such as, “How do you battle world hunger?” Once the essential question was developed, students created the challenge that will be the focus of their efforts. Guiding questions were birthed out of the knowledge gap that the students have created and seek to fill. The guiding activities gave the students the opportunity to discover the information they seek. This process led students toward a solution. It was important to realize that because of the big idea, there are multiple solutions that came from the students. Assessment often included reflection through video documentary or journals that offered a tangible representation of the work that was completed and this and other forms of assessment afforded the student the chance to reflect and develop 21st Century Learning Skills (Apple Computer, 2011).

Research on CBL has blossomed since Gijselaers and Schmidt (1990) first began examining CBL for its educational benefits. Johnson and Adams reported a study conducted in 2009 by the Challenge Based Learning Institute (2011) that looked at 1,239 students and 65 teachers at 19 schools that included four elementary schools, four middle schools, five high schools, and four colleges. The study found that CBL is an effective tool in building 21st century skills. It was found that 90% of teachers reported 12 key skill areas that were improved as a result of CBL, these are: leadership, creativity, media literacy, problem solving, collaboration, critical thinking, flexibility, communication, adaptability, innovation, responsibility, and initiative (Johnson & Adams, 2011). Johnson and Adams (2011) also determined that CBL engaged students in learning as students reported that they felt like they had learned more than they anticipated, contributed to solving a big problem, and worked harder than usual. The study
also found that teachers found that CBL was effective in dealing with time management issues as well as being a welcomed change from the norm. The last major finding by Johnson and Adams (2011) was CBL was effective in a technology rich environment. Researchers have discovered that 21\textsuperscript{st} century skills such as collaboration and problem solving are developed in CBL (Gallagher et al., 1992; Johnson & Adams, 2011; Mayo et al., 1993).

Diametrically opposed to these benefits are issues within the CBL process that may be detrimental to student success. Sockalingam and Schmidt (2013) studied CBL programs and discovered some concerns with these programs. Out of the previous studies, several problem characteristics were discovered. Lack of prior knowledge, which could be present in most levels of academic circles, was the most pressing concern with CBL models. Challenges must contain a real-world connection for buy in from students. This was the central theme that proponents of CBL focused on when speaking about CBL. It was the spine that provided support for CBL as students must have a reason to buy in to effectively engage students in this type of instruction (Apple Computer, 2011). CBL and real life must be intertwined or the project is just class work and the students may not learn what is expected of them. Prior knowledge, or reliability, provided the connection to the problem (Hung, Mehl, & Holen, 2013). This was the motivation that drives students to strive for a solution. Teachers must be cognizant of burn out in schools where CBL is a main focus of the curriculum. It is easy for students to become bored with the constant assignment of projects. Students have expressed that the constant repetition of projects is a detriment to the motivation for students to complete the challenge (Hung & Holen, 2011; Hung et al., 2013). It may be more effective if CBL/PBL projects are used as a part of a curriculum instead of the sole focus of it.
The push for 21st century skills, collaboration, creativity, critical thinking, problem solving, and decision-making has caused teachers to constantly explore the latest methods to engage their students. The 21st Century School has ushered in the use of new technologies such as iPods, iPads, and laptops, namely Apple MacBooks. These technologies have also pushed aside many of the traditional educational materials such as chalkboards and textbooks. Digital textbooks and e-books have become increasingly available for all stages within education. The use of e-books, which account for $56 million in sales, is not going to stop anytime soon (Mardis, Everhart, Smith, Newsum, & Baker, 2010). Additionally, Mardis, et al., (2010) noted that in 2008 and 2009, Harvard and Princeton began offering textbooks on the Amazon Kindle reading device. These advances, along with others not mentioned here, have been joined by what is referred to as one-to-one laptop initiatives. Traditional methods were replaced with new technological devices and strategies as education attempts to remain current with the world around it. The one-to-one initiative was a method that gained momentum in education (Weston & Bain, 2010). As technology grows, education has moved from exclusively using textbooks to incorporating tablets and laptops that may contain an e-version of a textbook or not even using textbooks any more for anything other than a resource. Schools are welcoming technology and in this, students are gaining access to personal learning devices, laptops or tablets being the most widely used devices (Singh, 2012). Lei and Zhao (2008) examined one-to-one initiatives in Maine, Michigan, Pennsylvania, and Texas. This study discovered that a large number of students use their laptops for academic purposes with the popular uses being, “taking notes, searching information on the Internet, learning subject content with specific software, and learning through online discussions” (Lei & Zhao, 2008, p. 106). Lei and Zhao (2008) found
that one-to-one initiatives significantly increased technology proficiency for students and provided enrichment for student learning experiences.

**One-to-One Computer Initiatives**

In education, there was a relatively new term called one-to-one initiatives. A one-to-one computer initiative can be defined in several different ways. Giving student access to a device during school hours, giving a student access to a device during class, as well as Bring Your Own Device (BYOD) programs are all considered one-to-one (Raths, 2012; Singh, 2012). The main piece of the mBolden Model was the one-to-one initiative: mPower Piedmont. mPower Piedmont allowed for every student in grades 4-12 to have unlimited access to a laptop computer, which research showed allows for greater achievement (Bebell & Kay, 2010; Oppenheimer, 2003) and the greater amount of time the student was engaged, the better the results (Weston & Bain, 2010). Research also showed that student engagement was increased with the use of 21st century devices (Bailey, Carnahan, & Musti-Rao, 2009; Buggey, Hoomes, Sherberger, & Williams, 2009; Jimenez, Browder, Spooner, & DiBiase, 2012; Kagohara, 2011; Mineo, Ziegler, Gill, & Salkin, 2008; Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010). Furthermore, when a program uses computer aided instruction, there is an increase in knowledge (Lynch, Steele, Palensky, Lacy, & Duffy, 2001). The literature shows that there was improvement in 21st century skills through the involvement in a one-to-one initiative (Sell, Cornelius-White, Chang, McClean, & Roworth, 2012).

There was dissent when discussing the true definition of a one-to-one with one camp stating that a one-to-one can happen with just use of the devices in daily use in the classroom (Solomon, 2005), and the other side stated that a true one-to-one existed when each student involved had unlimited access to the device and unlimited access to the internet (Richardson, et
For the sake of this study, when referring to one-to-one, it meant that each student has unlimited use of the device and unlimited use of the Internet. These programs can be traced back to 1989 at the Ladies Methodist College in Australia, where many believe the first one-to-one program was implemented (Richardson et al., 2013). These programs were able to provide the resources without having to share the technology, which can diminish the full effects of the technology (Bebb & Kay, 2010; Oppenheimer, 2003). Schools in the 21st century attempted to keep up with the fast pace of technology and while technology gives students new opportunities to use 21st Century skills, Tang & Austin (2009) suggest that present day students are in constant need of stimulation from their learning environment. With the use of technology comes a pathway for the student to discover new ways to occupy their minds and therefore, they may lose focus on learning. A study conducted by Kirschner and Karpinski (2010) showed a “significant negative relationship” (p. 1244) between Facebook use and the academic achievement for the student. This negative relationship resulted in the student being disengaged. This study was important because as one-to-one initiatives grow, research must be available to develop best practices that will assist administrators with the implementation of such programs so that the program and students can be successful.

In the early stages of computer use in education, many schools utilized computer laboratories to house their devices. Schools are now moving towards portable devices, i.e. tablets and laptops (Singh, 2012). Some districts and institutions have taken it a step further and placed devices in the hands of every student to allow for anytime/anywhere learning. When a school completes this transformation, it is known as a one-to-one initiative, program or school.
Student and Teacher Interaction with Technology

An effective one-to-one involves complete digital conversion that completely immerses the student and teacher into the technology used. Weston and Bain (2010) presented six rules that create an effective learning environment in a one-to-one program: (1) Develop an explicit set of rules defining beliefs about teaching and learning for the school community. (2) Embed the rules into day-to-day actions and processes of the school. (3) Clearly articulate roles and responsibilities to ensure all members of the school community are actively engaged in creating, adapting and sustaining the embedded design of the school. (4) Generate real-time, all the time feedback from all members of the school community regarding the embedded design in order to promote ownership and accountability. (5) Develop a dynamic and explicit schema of the interplay of rules, design, collaboration and feedback. (6) Community members demand systemic and ubiquitous use of technology guided by their schema. It is important to note that within these rules, feedback is essential to success, even to the point of teachers learning from students about various applications; not just using the technology for e-mail and web browsing (Keengwe, 2007). Because students are digital natives (a descriptor coined by author Marc Prensky (2001) meaning children today are born into this new technology rich world), teachers can rely on and glean information from students. After all, most teachers would be classified as digital immigrants, or those not born into the new age of technology. Teachers are vital to the success of the one-to-one because they are the facilitators of the program and therefore keep the program in motion. With most teachers not being considered digital natives, it was important to develop the teacher to make the transition easier. Professional development can alleviate this issue by providing teachers with a new skill set to make the transition easier. Even without professional development, teachers can still develop skills that can allow them to become
proficient. Teachers in schools that have made a digital conversion have increased their proficiency with technology, used technology more for productivity, and used technology for student involvement faster than those teachers not in a digital environment (Shapley et al., 2010).

The digital environment that teachers are placing students in has many components that allow for student interaction with teachers, students, and outside entities. Researchers have often used the Community of Inquiry framework that was developed around the year 2000 (Remesal & Friesen, 2014). Remesal and Friesen (2014) stated that it was originally developed to study online discussion forums by examining transcripts from threaded discussion boards; however, it has grown to include different methods of data collection. One of the newest educational phenomena was blogging. Blogging was a way for students to communicate in real time and have the capability to add media to the discussion such as photographs, video, and audio to the discussion. Remesal and Friesen (2014) argued that blogging allows for the occurrence of the attributes of social, cognitive, and teacher presence. This allowed for a social presence for the teacher and the students, which is what Remesal and Friesen (2014) often regarded as a key component in web-based course delivery formats. These tools allowed for individuals to create their own learning environment within a preset environment that may foster learning.

**Computer Aided Instruction**

Computer aided instruction (CAI) was a “Diverse and rapidly expanding spectrum of computer technologies that assist the teaching and learning process” (Douglas, 2004 p.1). These technologies were appealing to districts and schools because of the ability to have a course that can be consistently delivered and reproducible each year, saving time and resources. CAI can be used to adapt educational material to different learning styles. A study by Lynch, Steele, Palensky, Lacy, and Duffy (2001) sought to determine if attitudes towards computer aided
instruction would have an effect on participation and retention. The study revealed that attitude or student learning preference towards this type of course delivery format has no effect on student performance. According to Lynch et al. (2001), CAI produces significant and sustained increase in knowledge.

**Student Engagement**

While structure and facilitation push the process within the one-to-one, the process will ultimately fail if students are not engaged with the technology and content. A study conducted by Witecki and Nonnecke (2015) examined several locations that were all involved computing device programs. In this study, groups of students with devices and groups of students without devices were studied. It was shown that it was almost impossible for the students to achieve total engagement if each student does not have access to a device. The study also showed that the groups with devices showed slight improvement in overall grade point average (GPA) and end of course grades which are promising for these programs; nevertheless, standardized test scores improved but not significantly. Shapley et al. (2010) studied 21 schools with one-to-one programs. It was determined that the use of the technology outside of school is the most beneficial component of the one-to-one. This outside involvement with technology would mean that there is a higher level of engagement for the students that were active outside of the classroom. This would correlate with the study conducted by Keengwe, Pearson, and Smart (2009). The study looked at 105 students in a rural Midwestern high school by surveying the students and examining the school’s standardized test scores. It was shown that there was a direct relationship between student engagement and the use of computers in the one-to-one program. One-to-one programs may also contribute to academic success in all groups of students. The study revealed that teachers that participated in the survey stated that the one-to-one
program computing improved “Traditional, at-risk, and high-achieving students learning experiences” (Keengwe, et al., 2009, p. 8).

21st Century Learning Skills

Levy and Murmane (2004) found that technology is transforming the workplace by reducing the need for routine skills and placing a premium on problem-solving and communication skills. One of the benefits of a one-to-one initiative were the modern skills gained within the program. These skills were called 21st Century Learning Skills. 21st Century Learning Skills were defined as “certain core competencies such as collaboration, digital literacy, critical thinking, and problem-solving …that schools need to teach to help students thrive in today's world” (Rich, 2010, p. 32). In addition to these skills, creativity was often included with them. These skills were important to students as they move forward in education to keep up with the progression of the technology. As technology advances, it is imperative that students learn the skills that will help them in their pursuit of the workforce and/or college. Research has shown that student engagement was increased through the use of 21st century devices (Bailey et al., 2009; Buggey, et al., 2009; Jimenez, et al., 2012; Kagohara, 2011; Mineo, et al., 2008; Shapley, et al., 2010). There has been a paradigm shift from teaching basic skills to learning content to these new skills that allow children the opportunity to teach themselves by becoming researchers. Research completed by the Ozarks Education Research Initiative shows that one-to-one initiatives “improve 21st century skills such as ability to work independently, be critical in consuming information, completing larger or more complex projects, and working collaboratively and expansively with peers and the home and surrounding communities” (Sell, Cornelius-White, Chang, McClean, & Roworth, 2012, p. 33).
Collaboration was the process of working with another person or group to create something, whether it is for a project or assignment. Partnership for 21st Century Learning (P21) described a student with the ability to collaborate as one that can work effectively together in diverse groups, be flexible and willing to provide help and show compromise and actively participate in collaboration, and show appreciation and assign worth to the contributions of each member. Collaboration can be used by teachers and administrators as a method for students to learn teamwork and accountability. Garrison (2011) believed that collaboration comes from community through balanced interaction through social presence, cognitive presence, and teaching presence, all of which are important for a collaborative effort to produce meaningful experiences for the students involved. Gouseti (2013) examined the role of digital technologies for collaboration with different schools. This study revealed that collaboration is a difficult thing to achieve within schools due to the previous methods used, such as students working alone and using copy and paste instead of originality (Gouseti, 2013). Even though the online platforms were to be used as a digital space for collaboration, Gouseti (2013) also found the students used the online platforms as online storage for the artifacts instead of a place for collaboration to occur. This culture must be changed in order for the students to effectively collaborate. Elgort, Smith, and Toland, (2008) suggested a shift in the instructional approach at the institutional and pedagogical levels to facilitate this change.

United with collaboration is communication. Communication was oral or written interaction between people. It involved speech, gestures, technological devices, and other. It was, as Miller (1996) described it, the ‘social glue’ that holds the world together. Casner-Lotto, J., & Barrington, L. (2006) stated that clear communication comes when a student can clearly express his/her thoughts by communicating through various methods such as orally, through
writing, and nonverbal skills in diverse settings and in different contexts. Clear communication also involved listening to make sense of the contents and context of the conversation and using communication to inform, teach, provide motivation and persuade listener. A clear communicator uses several forms of technology and media and determine the effectiveness of the technology and will be able to successfully communicate in multiple environments. Effective communication is present in effective collaboration as they often cannot exist, one without the other.

Critical thinking was vital to learning because it was the very foundation of learning. Conley (2007) believed that critical thinking and problem-solving skills may be more important to the success of a student in higher learning than the actual content knowledge. The website of the Partnership of 21st Century Skills (P21): Digital Literacy defined critical thinking as the ability to reason effectively by using several different types of reasoning such as inductive and deductive reasoning, and having the ability to know when it is appropriate to use each one (2015). It also defined systems thinking as having the ability to provide analysis of how the parts of complex systems interact within the system (2016). Students that have obtained critical thinking skills will be able to examine “Evidence, arguments, claims and beliefs” (Digital Literacy, 2016) and provide thorough analysis. The student was also able to take opposing views and effectively examine these views and take arguments and information and make associations by processing the information and providing an interpretation based on the analysis of the information provided and provide conclusions. The final step of the judgement and decision-making process was for the student to participate in reflection on the experience and the decision-making process.
Critical thinking was intertwined with the other components such as effective communication and especially problem solving. To obtain accuracy in the process, there must be a direct relationship between problem solving and critical thinking. Problem solving was a direct result of critical thinking as this relationship between the two was often required for accuracy. Students with problem solving skills should be both conventional and innovative in their process of problem solving by using an extensive battery of techniques and have the ability to question different points of view to gain clarity throughout the problem-solving process.

Creativity and innovation are seen by many as a structural element of 21st century skills as they exist within all of the other parts of the skills configuration. Partnership for 21st Century Learning (2016) provided the framework of creativity and innovation: creative thinking, creatively working with others, and implementing innovation. Creative thinking involved using a broad selection of methods of creation such as brainstorming, clustering, mind mapping, etc while creating meaningful and fresh ideas. P21 stated that creative students were able to “Elaborate, refine, analyze and evaluate” his/her ideas to develop and get the most out of their efforts in the creative process (Digital Literacy, 2016, p. 1). Through this process, students must be able to provide effective and meaningful communication in regard to the creation and execution of new ideas. The students also need to be receptive to a variety of viewpoints as is present in group settings and be able to include and blend the various views into the project. It is important for the student to be able to be original in his/her work and have an understanding of limits that exist like gravity and human performance limits. Finally, a good lesson for students to learn in this process was that failure is not necessarily failure but an opportunity to learn. The process discussed was usually a long and tedious task that requires patience and perseverance. Mistakes were bound to occur and this is where a student can find their success and maybe even
their purpose, and because of this they can share this newly discovered innovation with others and actively contribute.

Furthermore, creativity is a skill that can give a potential employee an advantage over others that are less creative. Kutaka-Kennedy (2015) stated that creativity requires the learner to be “risk-taking, experimenting, trying, failing, evaluating, discarding, and making corrections or new connections” (p. 875) in an atmosphere where there is no right or wrong answer. This skill can make a person increasingly marketable to potential employers.

In addition to the skills listed by P21, Digital Literacy was often considered a 21st Century Skill. The homepage of P21 defined Digital Literacy as:

The ability to use digital technology, communication tools or networks to locate, evaluate, use and create information. The ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers. A person’s ability to perform tasks effectively in a digital environment. Literacy includes the ability to read and interpret media, to reproduce data and images through digital manipulation, and to evaluate and apply new knowledge gained from digital environments. (Digital Literacy, 2015).

Bawden (2008) stated digital literacy was a fluid item in that a digitally literate person is one that can learn and adapt to new technology that is constantly being created. This was referred to as Technology Knowledge. Technology knowledge was knowing the items used in teaching such as books, whiteboards, and even computers and software. When speaking of digital technologies, one could be referencing operation systems, software, email, browsers, etc. (Mishra & Koehler, 2006). All of these things require a level of digital literacy to keep the
teacher up to date as technology in the classroom advances. The students, being digital natives, will usually be up to date.

The first college readiness standards were created in 2003, known as Standards for Success. These standards did not address career readiness. There were several revisions and new creations of readiness standards but most of them failed to address career readiness (Rothman, 2012). A study conducted for Achieve Inc., *Rising to the challenge: Are high school graduates prepared for college?* (2005), discovered that almost half of all high school graduates were not prepared for entry level employment and only 39% of high school graduates were prepared for freshman level coursework. Concern that states standards were too low prompted state leaders to attempt to address the issue. Thus, the Common Core State Standards Initiative was born. It was divided into two components: (1) Mathematics and English Anchor Standard Developers and (2) Grade Level Standard Developers. David Conley, Ph.D. is widely regarded as a leader in the realm of College and Career Readiness. Conley (2010) said a student that is College and Career Ready (CCR) “can qualify for and succeed in entry-level, credit bearing college courses leading to a baccalaureate or certificate, or career pathway-oriented training programs without the need for remedial or developmental coursework” (p. 1). This definition was developed after 18 years of collaborative research by Conley, the Oregon State University System, the Association of American Universities, the Texas Higher Education Coordinating Board, the National Assessment Governing Board, and the Bill and Melinda Gates Foundation. The College and Career Readiness Standards contained four keys which allow the student to show readiness. The Educational Policy Improvement Center (EPIC) lists the following as the keys: cognitive strategies, content knowledge, learning skills and techniques, and transition knowledge and skills. These are also labeled as: Think, Know, Act, Go.
The first portion of Conley’s (2010) readiness model means the students will be able to formulate problems by hypothesizing and strategizing to develop a solution. The student will be able to research by identifying and collecting information and interpreting the data through analysis and evaluation. The student will also be able to effectively communicate and confirm the accurateness of the completed work.

Key content knowledge was the foundational information found in all subjects that students must know. A report by Casner-Lotto and Barrington (2006) showed that students must also know the basic knowledge of the core subjects which will allow for learning and retention. Students must also possess technical knowledge and skills associated with their career choice and the level to which they are committed to learning this information will determine their readiness in this area (Casner-Lotto & Barrington, 2006).

This key was divided into two areas, ownership of learning and learning techniques. Ownership of learning involved the student setting goals, demonstrating persistence, having a level of self-awareness, being motivated to learn, knowing when to seek help, the ability to monitor progress and having self-efficacy. The second portion consisted of specific learning techniques. These are: (1) “Time management, (2) Test Taking Skills, (3) Note Taking Skills, (4) Memorization/Recall, (5) Strategic Reading, (6) Collaborative Reading, and (7) Technology Proficiency” (Educational Policy Improvement Center, 2012, p.3).

These skills were necessary for the transition from high school to the post-secondary environment. This information was vital for the student to have an easier transition than if this information is not obtained. The knowledge and skills consists of awareness of postsecondary opportunities and student aspirations as well as the expectations placed on the student both culturally and from their support structure (Skaff, Kemp, Sternesky-McGovern, & Fantacone,
2014). The student was prepared for the transition by understanding the costs of postsecondary education, such as tuition, room and board, books, and what financial aid is available. Students must also be able to navigate the admissions process and know the requirements and skills needed for their aspiring career. It is good for the students to look to people in their chosen field to find a role model to emulate (Bettinger & Long, 2005; Karunanayake, Danesh, Nauta, 2004) and the student must always be on guard to be a self-advocate as this is a part of growing into a productive adult (Douglas, 2004)

**Grit and Tenacity**

The PCSD chose to focus on two non-cognitive traits, or skills: grit and tenacity. Grit was defined as, “perseverance and passion towards long term goals” (Duckworth, Peterson, Matthews, & Kelly, 2007, p.1087). Grit caused learners to strive toward completion even though there may be setbacks and downfalls. The student with grit will stay focused on the end goal. This was tied to the growth mindset. The growth mindset was present in all children in Kindergarten through 3rd grade (Ricci, 2013) but as the students reach 4th grade, the number of students with the growth mindset is down to 58%. It was unclear what factors contribute to this drastic drop, but grit and tenacity will decrease as well. Hochanadel and Finamore (2015) believed grit was a byproduct of the growth mindset.

Within the PCSD, 68 percent of the students are on free or reduced lunch status. Impoverished students experience lower educational performance than their counterparts that are not living in poverty (Aikens & Barbarin, 2008). The leadership within the PCSD identified a problem the students were experiencing with apathy and chose to develop grit and tenacity. This was congruent with the findings of Muijs, Harris, Chapman, Stoll, and Russ (2009) who stated there are several factors that improve the quality of low income schools, one of these being a
focus on teaching and learning. Student achievement will improve with the presence of grit and tenacity that may keep the students striving toward their educational goals despite their plight in life (Duckworth et al., 2007).

**Professional Development**

The PCSD determined that the teacher has to be the driving force behind the mBolden Piedmont Academic Model. The student must master the content, but the teacher, along with the administrators and instructional coaches, must become experts in content, mastery assessment, problem based learning across the curriculum, and be able to analyze data. Teachers in Piedmont Middle School were assigned to complete professional development as a part of the transition to the new academic model. Professional development is important for continuity throughout the program because each teacher will interpret the requirements and how to instruct on them differently (Schlessinger, 2014). This model will scale up and down to each of the separate campuses within the PCSD and the administration seeks unity across the schools, hence the required professional development.

**Summary**

Although schools across the nation are joining the technological boom, the PCSD took a new approach and decided to try a brand-new model. Through this, the school district received numerous awards and grants. This model focused on modeling, scaffolding and student’s ability to create their own learning. Within this theoretical framework, self-efficacy was a trait that students need to achieve. Their belief in themselves and their drive toward their goals gave the students the ability and opportunity to achieve success. Therefore, the student’s self-efficacy was a vital component of the model because the belief is intertwined with the student’s ability or drive to construct his/her educational experience. Constructivism and the social cognitive theory
provided the lens for which this study examined the mBolden Piedmont Academic Model and provided a mode of operation to complete this study. Based on the literature, the components of the mBolden Piedmont Academic Model were all viable academic initiatives that produce academic success for the students involved. While no research exists on the type of model to be studied, there is research for each of the programs.

Because of the nature of the study, the outline of the literature presented for Chapter Two offers a background and an overview for the components of the mBolden Piedmont Academic Model at PCMS. Within this look at the structural parts of the model, there were qualitative and quantitative data that showed evidence for the success of the individual components, as well as perceived shortcomings. However, there is no specific data that relates directly to this program because of its proprietary design. Because this model is the first one to incorporate blended learning, mastery-based learning, flipped instruction, and challenge based learning, this research study filled an obvious gap in the literature.
CHAPTER THREE: METHODS

Overview

Chapter Three will discuss the following parts of the proposed research study: research design, the setting of the study and the participants. Afterward, there will be a discussion of the research questions, the researcher, procedures of data collection, and analysis. Finally, this chapter will close with a discussion of the trustworthiness and the ethical considerations of the proposed research study. Chapter Three was designed to serve as a guide through the methodology of the proposed research study.

Design

I chose a qualitative approach for this study as Stake (1978) stated a qualitative approach is appropriate when the research questions involve something that needs to be explored. The mBolden Model, although touted as an effective academic model, still had issues that need to be examined. An instrumental case study research design was used because I sought to understand mastery and non-mastery for students at PCMS. Case study was widely believed to have been introduced in 1829 by Frederic LePlay for the study of his own family budget (Healy, 1947). Later in the 20th century, theories were developed by the use of case study as a research method. Stake (2005) points out that only in recent decades has case study entered the realm of educational research giving researchers another outlet to develop educational theory. A case study, as defined by Yin (2013), is, “an empirical inquiry that investigates a phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (p. 13). According to Yin (2013), case study is the preferred method of research when the researcher uses “how” or “why” questions for the main research questions and when the researcher has no control over the events of the case.
This study used three of Yin’s (2013) six sources of evidence: interviews, documentation, and archival records. Data was collected from students and the administration of PCMS. Data gave insight to the thoughts and views of the students immersed in the mBolden Piedmont model. In order to gain trust from the participants, prolonged engagement is a method that was used to learn the culture (Creswell, 2007, p. 250). Triangulation, using several pieces of data to gain corroborative evidence, was used to provide validity to the proposed research study (Creswell, 2007, p. 251).

**Research Questions**

**Central Question**

How does the mBolden Academic Model influence student success at Piedmont City Middle School?

**Sub Questions**

1. How does the mBolden Piedmont Academic Model impact mastery of 8th grade students at Piedmont City Middle School?

2. What internal factors influence success for students in the mBolden Piedmont Model?

3. What external factors influence success for students in the mBolden Piedmont Model?

**Setting**

The site for the proposed research study was a middle school containing sixth through eighth grades located in rural, northeast Alabama. The site was an accredited school with the Southern Association of Colleges and Schools (SACS). There are approximately 280 students enrolled in the school. The latest data from the Alabama State Department of Education (2009) shows that over 60% of students in Piedmont Middle School receive free or reduced lunch. A school profile from NextGen Learning (2015) showed the faculty has 35% of teachers that have
obtained National Board Teaching Certification and the school consistently meets adequate yearly progress (AYP). The school was chosen because of the implementation of the newly created mBolden Piedmont Academic Model in the school year 2014-2015. This model focused on preparing the students to be college and career ready by using mastery based learning in an individualized learning path for each student. The school is located in a one-to-one school district with each student receiving an Apple MacBook Air to use 24/7 throughout the school year. The students may keep the computer year-round if the student chooses to participate in the Summer Virtual Academy. The Piedmont City School District (PCSD) also had a citywide network, through a partnership with the city that provided unlimited Internet access to its students. Should the student live outside the city limits, a Verizon Jet Pack was offered for a fee based on the student’s Free/Reduced Lunch status. This site was in close proximity to the researcher, which allowed for increased time for data collection.

Participants

This study was conducted in the middle school of the school district in which I was employed. Two of the students who participated in this study were in my class when I taught at the elementary school but they are not under my authority at the time of the study because I do not teach at PCMS; the others were not. For this study, the pool of participants was the 8th grade students of Piedmont City Middle School (PCMS). From the pool of 8th grade students, the top and bottom quartile of eighth grade students were examined and only the top eight students met the criteria to be included with the top group. Patton (2015) suggested purposeful sampling therefore, this study selected twenty students and seventeen agreed to participate. Student Mastery Connect reports were obtained from the four core subjects, mathematics, history, science, language arts and were examined, with help of the blended learning coach, to determine
whether or not the student is in the top or bottom 25% of the grade and therefore meets the requirements for participation in the study. Because this study focused on the mBolden Academic Model, students must have been working in the mBolden Piedmont model for at least one academic calendar year and not have transferred into the system after the 2014 academic year had commenced. Once the participants were selected and consent forms were collected, all students from these selected groups was interviewed.

**Procedures**

The proposed research study did not begin until all of the required approvals were obtained, starting with the Internal Review Board at Liberty University. Upon IRB approval, I contacted the superintendent of the PCSD to gain access to the school for the study. After approval from the PCSD, I began to gather important documentation and archival records for analysis. These documents were all available in electronic and hard copies, therefore simplifying the data collection process. Next, I sent the consent forms home with the students chosen to participate in the study. Interviews were scheduled and consent forms were taken up before individual interviews were scheduled. Interviews are regarded as a targeted and insightful method of data collection (Yin, 2013). Interviews took place on the campus of PCMS inside of the conference room, during student’s My Time period. A semi-structured format was used to allow for the interviewees a level of flexibility in their answers and to allow the researcher to incorporate a conversational style interview. A “tree and branch” structure (Rubin & Rubin, 2005) was used to question the students. The researcher took the research problem and divided it into parts and will ask a question to cover each area. The interviews were recorded and transcribed and pseudonyms were used to protect identities. Interview audio was digitally recorded and transcribed verbatim. Data including interview recordings, transcripts and all
reports, documents from the mBolden model was analyzed and coded. Saldana (2013) defines a code as, “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p. 3). Peer-review was used to add an additional degree of dependability to the proposed study (Creswell, 2007, p. 73). A history teacher at the high school, who spent several years at teaching at the middle school level was asked in to help with the interview questions. Another teacher, working on her educational specialist degree was asked to help review.

**The Researcher’s Role**

With the research study being qualitative in design, I fully understand that I am the human instrument. Peredaryenko and Krauss (2013) believed that just like a mechanical instrument, the human instrument can be honed for greater accuracy and dependability. With the renewing of the mind the human instrument will experience greater levels of integrity and honor as well as clarity and focus, all of which are paramount for a successful research study.

I have been in education for 15 years, one year as a classroom aide and 14 years as a classroom teacher. As a teacher in the PCSD, I have a desire to see all of our endeavors benefit the students of the district to the greatest extent possible; this, in addition to my child attending school in the district, naturally forces me to experience a small level of bias. Despite my place of employment, I do not teach the students at the middle school and I do not have any experience with the mBolden Piedmont Model. I did not teach the current 8th graders at PCMS. I have learned about this model on my own in preparation for this study. Current literature and case study procedures will guide my research.

I am an evangelical Christian with a biblical worldview. My worldview provides the lens that allows for clarity in everything pertaining to my life. This view is grounded in the Holy
Scriptures, the Bible. I fully trust Jesus Christ as my Savior. All things were created for Him. All things were created through Him. He holds all things together by the breath of His mouth, the word. I know that I have nothing without Him and through Him I have everything. His love and mercy sustain me. His knowledge is beyond me. As an emerging scholar, I understand the importance of a foundation to base my findings and research on and for me that is the cornerstone of existence, Jesus, for without Him there is nothing. Along my educational journey, I realized the value of solid research. This became clear during the process of my Educational Specialist degree that was conferred in 2013.

**Data Collection**

In order to maintain a high standard of research within the proposed study, Yin’s (2013) list of desired attributes for a good case study provided a framework for the data collection. For the research study, I asked good questions, I was a good listener, I stayed adaptive, I had a firm grasp of the issues, I avoid biases, and I conducted ethical research. Using this as an effective data collection framework, three methods of data collection were used for the research study: (a) documents; (b) interviews; and (c) focus groups.

**Documents**

For the research study, the first data collection method used was the gathering of documentation. “The most important use of documents is to corroborate and augment evidence from other sources” (Yin, 2013, p. 103). This included the mBolden Piedmont Vision Statement, which provided direction for the researcher to determine if the vision statement is driving the implementation of the model; mastery reports from the students which provided verification as to the performance of the students chosen for the study; survey data collected by the district in program improvement revealed feelings and attitudes from students towards the new model.
Interviews

The second data collection method used was interviews. Yin (2013) believed that the interview was a vital source of information for the gathering of evidence for a case study. Individual student interviews used a semi-structured format with an open-ended interview style. All students were asked the same interview questions but were allowed to develop their own answers. These were digitally recorded and transcribed verbatim as this was a more accurate method than taking notes (Yin, 2013). The researcher was cognizant of the two jobs for the interview process as told by Yin (2013), (a) “to follow your own line of inquiry, as reflected by your case study protocol, and (b) to ask your actual (conversational) questions in an unbiased manner that also serves the needs of your line of inquiry” (p. 106).
When conducting interviews as a data collection method, it is important to develop a rapport with the subject (Patton, 2015). Patton (2015) pointed out that interviews are a way to uncover things we cannot see for ourselves. Merriam (2009) listed six types of questions that should be used during the case study interviews, these were experience and behavior, opinion or

<table>
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<tr>
<th>CATEGORY</th>
<th>QUESTIONS</th>
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| Student/Interviewer Connection | - Please introduce yourself to me as if we just met each other.  
- Please describe your upbringing (place of birth, where you attended Elementary school).  
- Tell me about a day in your life at Piedmont City Middle School.  
- How do your parents or guardians feel about education? Did they attend college or technical school? Do they want you to go to college? |
| Student Responsibility | - The mBolden Piedmont Academic Model is set up to allow for students to work at their own pace. Naturally, this involves a certain level of responsibility. Do you usually finish your assignments on time?  
- How would you describe your ability to stay caught up on your assignments? |
| Learning Environment Effectiveness | - Personalized learning is a key component of the mBolden model.  
- How does the mBolden model allow you to work at your own pace?  
- Tell me about some of the struggles you have experienced with courses in the mBolden Piedmont Model. |
| Student Role Playing | - Imagine yourself in front of the incoming 6th graders next year, what would you tell them about the mBolden Model that would help them as they come into the middle school?  
- Since the mBolden Model focuses on personalization, let’s pretend you were given the opportunity to create or personalize your own version of mBolden Piedmont, what would it look like? |
belief, feeling, knowledge, sensory, and background and demographic. As seen in Table 1, questions one through four were designed to develop a connection with the student. These questions were for obtaining information about the participants and are non-threatening and revealed knowledge about each student. Waldrip, Yu, and Prain (2016) said that personalized education was designed to create students that can adapt to difficulty, continue learning, can function in a team, effectively communicate, solve problems, and have responsibility. With question five (Table 1), I wanted to focus on the student’s view on responsibility. As listed in Table 1, questions six and seven were focused on the effectiveness of the environment created by the mBolden Model by giving the student an opportunity to discuss their involvement in it. Calkins and Vogt (2013) believed that most educational practices are outdated and do not rely on knowing how the individual actually learns. The PCMS mBolden model takes from NextGen Learning its framework for an effective learning environment which is learner-centered and driven, structured and well-designed, extremely personalized, inclusive and social (Calkins & Vogt, 2013, p. 10). A study by Butler and Winne (1995) showed that students with the ability to self-regulate (or personal responsibility) have an understanding of how strategies match up with goals and benchmarks that they set. Question eight (Table 1) was designed to put the student in the role of a personalized learning expert which gave them a chance to expound on their idea of how the program could be improved (Patton, 2015). Table 1 shows question nine allows the student to role play which allows the student to become an observer that gave a more in-depth description (Patton, 2015; Creswell, 2007). Question ten was the one-shot question (Patton, 2015) that gave the student a chance to offer any other information that was excluded during the interview. Question 10 was also the closing question for the interviews.
After completing the interviews, transcripts were developed and analyzed for codes to develop themes. Member checking did not occur due to the students being released for end of the school year.

**Focus Groups**

The final data collection method for the research study was focus groups. Krueger (2015) defined a focus group as a “carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment” (p. 315). Greenbaum (1993) stated that focus groups are most productive when one is examining a new program and looking at its strengths and deficiencies. Krueger (2015) also stated that focus groups are effective for rich data when the participants are “comfortable, respected, and free to give their opinions” (p. 5)
Table 2

*Questions for Focus Groups of PCMS Students in mBolden Model.*

<table>
<thead>
<tr>
<th>QUESTION TYPE</th>
<th>QUESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening</td>
<td>- How do you like going to school at Piedmont City Middle School?</td>
</tr>
<tr>
<td></td>
<td>- What do you know about the mBolden Piedmont Academic Model?</td>
</tr>
<tr>
<td></td>
<td>- What do you think of the mBolden Piedmont Academic Model?</td>
</tr>
<tr>
<td>Introductory</td>
<td>- What are some things you like best about the mBolden Model?</td>
</tr>
<tr>
<td></td>
<td>- What are some things you dislike about the mBolden Model?</td>
</tr>
<tr>
<td>Transition</td>
<td>- On a scale of 1-10 (1 being the worst and 10 being the best), how do you rate your educational experience at Piedmont City Middle School? Why?</td>
</tr>
<tr>
<td></td>
<td>- What does the term mastery mean?</td>
</tr>
<tr>
<td></td>
<td>- Describe a typical session in My Time? Goal Time?</td>
</tr>
<tr>
<td></td>
<td>- Think back to what school was like school before you started mBolden. What are some differences between school before the change? Is it better now or worse?</td>
</tr>
<tr>
<td>Key</td>
<td>- Suppose that you had one minute to talk to the Superintendent on the mBolden Model, what would you say?</td>
</tr>
</tbody>
</table>

Within the groups, students were asked the focus group questions (Table 2) that follow Krueger’s (2002) suggestions for five types of questions. Question one is an opening question. Questions two and three are introductory questions designed to introduce the participants to each other and introduce the topic of discussion. This allowed the interviewees to feel more...
comfortable in sharing their thoughts and feelings (Rabiee, 2004). Krueger (2015) believes that questions should be simple and one-dimensional to avoid potential confusion. Questions four and five were transition questions that are designed to present the group with the opportunity to give data on all aspects of the mBolden Model. Questions six through nine are the key questions that were exploratory in nature and allowed the students to give a rich description that included personal opinions and collective experiences, both of which Ryan, Gandha, Culbertson, and Carlson (2013) believe are important in focus group data collection. Question ten was the ending question that allowed for any comments that were not addressed in previous questions. Because the focus groups were transcribed verbatim, the focus groups were digitally recorded with a digital audio recorder to make the transcription process a more convenient task. As moderator for the focus group, I was able to mediate a discussion on the mBolden Piedmont Model and the issues related to it as I was able to get each student’s views to surface (Yin, 2013). I remained committed to my line of questioning as to avoid issues of reflexivity.

**Data Analysis**

For this research study, the endgame was to arrive at themes from the data to provide insight into the case. I followed a strict pattern to complete this task. Yin recommended specific techniques for analyzing case studies: pattern matching, explanation building, time-series analysis, and logic models (Yin, 2014, pp.109, 116-137). First, from the data, codes were created. Saldaña (2013) defined a code as a “word or short phrase that symbolically assigns a summative, silent, essence-capturing, and/or evocative attribute for a portion of language based or visual data” (p. 3). These codes came from the answers provided in the interviews and group discussions. Next, the codes were organized into categories. Finally, the categories were developed into themes. I used the assistance of computer-assisted tools such as NVivo and
Preview for Mac to aid in coding; all the while knowing that these are just tools and cannot finalize the findings (Yin, 2013). This step contained an explanation of the data gained from the cases. Data including interview recordings and transcripts; focus group recordings and transcripts, and all reports, documents from the mBolden model were analyzed and coded. I used peer review to add an additional degree of dependability to the analysis (Creswell, 2007).

**Trustworthiness**

Trustworthiness was used interchangeably with validation. The four tests recommended by Yin (2013) that measure the quality of a research design are (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability. The first three on this list are possible to use in case study research, but it is very difficult due to the nature of qualitative studies. However, the final one, reliability, is akin to the procedures listed subsequently in this section. The constructs for trustworthiness of the proposed research study are credibility, dependability, confirmability, and transferability (Houghton, Casey, Shaw, & Murphy, 2013; Shelton, 2004).

**Credibility**

Credibility deals with the congruency of the findings with reality (Shelton, 2004), because the believability of any study is increased by the convergence of data from multiple sources (Yin, 2013). For this research study, portions of Shelton’s (2004) list of provisions were be used to promote confidence in the accuracy of the findings: (a) “Using well established research methods, (b) familiarity with the culture of the participants, (c) random sampling, (d) triangulation, (e) honesty tactics for participants, (f) iterative questioning, (g) frequent debriefing sessions with dissertation committee, peer scrutiny of research study, (h) reflective commentary, (i) member checks, (j) thick description of the data, and (k) examination of previous research findings” (pp. 64-69).
Dependability

Dependability is obtained by recording the process of the research study in great detail to allow future researchers to use the study as an example (Shelton, 2004). An audit trail was left to allow for peer tracking. I also used coding queries created through the computer-assisted coding tools to allow for an additional means by which peer review can occur.

Confirmability

Confirmability is defined as the neutrality and accuracy of the data (Houghton, et al. 2013). For this research study, I recorded personal decision trails to allow for peer examination to check for reflexivity, which is the extent to which researcher influence on the study occurs. Additionally, the coded data allowed for text search within the coding labels for easier examination.

Transferability

Transferability is defined as the ability of findings to be transferred to a similar situation (Houghton, et al. 2013). This was a difficult task because as Shelton (2004) pointed out that when conducting qualitative research,” it is impossible to demonstrate that the findings and conclusions are applicable to other situations and populations” (p. 70). A thick description of the process and the data collected provided future researchers insight into the progression and framework of the study.

Ethical Considerations

As a follower of Christ, He has spoken the words that provide ultimate guidance in the path of ethical considerations: “You shall love your neighbor as yourself” (Mark 12:31 New International Version) and “Do unto others as you would have them do unto you” (Matthew 7:12 New International Version). For the research study, human subjects were used. This made the
ethical considerations vital to the protection of the participants. Yin (2013) recommended alignment with one of several ethical standards published; I familiarized myself with the American Educational Research Association and maintained the obligation to ethical practices used in medical research. The first step was meet the standards set for research through the Liberty University Internal Review Board. The Liberty University Internal Review Board Handbook states that researchers must gain informed consent, protecting participants from harm and deception, protecting privacy and confidentiality, taking special precautions to protect vulnerable groups such as children, and being equitable in selection procedures. Pseudonyms were used to protect student confidentiality. Recordings and transcripts were stored on a password-protected computer. Student well-being is a top priority, so debriefing included the purpose of the study, assurance that data (recordings will be kept private), and researcher contact information was available upon completion.

**Summary**

Chapter Three presented the methods of the proposed research study by initially discussing the proposed qualitative case study design and then providing the framework for the proposed research design. The research study setting was chosen due to convenience and stakeholder buy-in from the researcher. Procedures and data analysis were explicitly discussed and rationalized. Lastly, this chapter closed by discussing the measures used to ensure trustworthiness and the ethical considerations of the proposed study.
CHAPTER FOUR: FINDINGS

Overview

The goal of this cross-case study was to understand mastery and non-mastery for students in the mBolden Model at Piedmont Middle School. This method of research was chosen to identify internal and external factors within the mBolden Piedmont Academic Model that could influence student success. For this study, data collection was completed within one school district in rural Northeast Alabama at one site. At this site, the students were to be divided into two groups. The first group was comprised of students that were at 80% complete on their Mastery Connect progress and had a grade of 80. Those below these levels were assigned to the second group. Participant selection was based on the student being in the eighth grade, being in the middle school more than one year, and the student’s score in relation to mastery levels. Participants were selected from Mastery Connect Reports gained from the blended learning coach at Piedmont City Middle School. Each report contained a mastery score and a score-to-date percentage and every student report was analyzed, with the help of the blended learning coach, to determine which students were the highest performing and which were the lowest performing. The students were placed in a spreadsheet from highest percentage earned and being up-to-date down to lowest scores and being farthest behind. As the list was disaggregated, a strange and troubling issue surfaced: the group distinctions became difficult to separate. After the eighth student was scrutinized, the students that followed were either not up-to-date, they were failing, or both. In the planning stages of the research, the initial plan was to have ten students in both groups, but because of the low scores, the highest group could only produce eight students. Therefore, some of the students were included because of their proximity to the requirements of being in the higher group. Twenty-four students were identified for the pool of
participants. After the forms were sent home and returned, twenty students agreed to participate, but three students moved to a different school before the data collection occurred and thus, seventeen participants were left for the study. Of the seventeen students, eleven were male and six were female. Fourteen of the participants were Caucasian, while three were African-American. Two homogeneous focus groups based on mastery percentage and grade scores were planned, but due to student schedules and various school trips, athletic contests, and severe weather, the groups became heterogeneous. Before data collection began, all participants returned the informed consent form. After the forms were returned, students identified through the screening process participated in individual interviews. The interviews were held in the school’s conference room and all students interviewed participated in the focus groups. The focus groups were conducted in one of the glass student workrooms in the middle school library and in a regular classroom that was empty at the time of the group. Seventeen eighth grade students participated in the study where they gave their views on the effectiveness of the mBolden Piedmont Model. The research questions informed the study with the central question focusing on how the mBolden Model influences student success within the middle school. The sub-questions investigated the various factors that affect the way the model influences student success. The findings reported in this chapter are based on the analysis of the following data collection procedures: (a) archival records; (b) interviews; and (c) focus groups. From the data collection procedures, three themes emerged that were related to how the program influences student success. The themes were: (a) mBolden students experience problems with workload; (b) mBolden students feel disconnected from teachers; (c) mBolden students experience problems due to disengagement.
Participants

The following are the descriptions of the participants based on information gained in the interview process. All names have been changed to pseudonyms to protect the confidentiality of the participants.

Mitch

Mitch is a student-athlete that loves to play sports. He thinks his school is a fun place to attend school. He likes the teachers at Piedmont where he has attended Piedmont City Schools since the second grade. Mitch’s mom attended college and his older brother is going to college after the school year is complete. Mitch’s parents believe college is an important goal for him to strive towards. Mitch said he usually stays up-to-date on his coursework, but has fallen behind at times. He said, “I get most assignments done. Some assignments you just can’t get done in class but you can go home and work on them.” This leads to an issue Mitch admitted that he struggles with, responsibility. Mitch would like to see the amount of work decreased to allow for students to remain caught up.

Nikki

Nikki is a lifelong Piedmont native. Neither of her parents went to college but both of them see education as important and want their daughter to go. Nikki is always caught up as she makes wise use of her time; “Most of the time, I’m ahead and stay on task.” She said that sometimes you have to “wait on the class to take a test,” rather than being able to work ahead. Nikki recommends, “Stay caught up because if you get behind and can’t catch up you will probably fail.”
Myra

Myra has been in Piedmont since she was a child, after living out of state for a brief period. Myra’s mom attended college but did not finish with a degree. Despite not finishing, her mom wants her to go to college so “she won’t have to work so hard” in life. She likes the freedom to work at her own pace but cautions against falling behind because the potential of failure. Myra told the interviewer, “Sometimes I am able to finish on time, but sometimes I get behind. I stay on pace. I don’t like to get behind because when you are behind it’s hard to get caught up.” Myra thinks students should not be made to move ahead if they aren’t ready.

Curtis

Curtis has attended Piedmont since kindergarten. He is a three-sport student-athlete for the school. Both of Curtis’ parents have college degrees and fully expect him to attend college. Curtis was ahead in all of his classes and likes the mBolden Model because of the options it has opened up for him. Curtis plans to finish his Senior coursework as a Junior and enroll in college early through the dual enrollment program. As it pertains to his current coursework, he likes to finish his work in class right after the class has covered the lesson. He enjoys the freedom and flexibility of the mBolden Model but recommends not being in classes with your friends: “You won’t spend as much time talking or acting out.”

Billy

Billy has been to several schools to this point in his academic career. Billy is involved with the band and has been a member for three years. Billy does not participate in any additional extracurricular activities. He comes from a family where no one has attended college, but his mother wants him to go to college and pursue a career in the medical field. Billy doesn’t see himself as a procrastinator, but does “like to just sit around.” Billy would like to see the
deadlines relaxed, “Because it’s more work for you and for the teacher because she has to remove your zero and put in the actual grade.”

**Marcus**

Marcus is a student-athlete that moved in while he was in elementary school from another local school. Marcus’ dad graduated from community college and his mom did not attend college; however, they think college aspirations are very important for him. Marcus admits that he struggles with staying on task because of distractions, namely YouTube. He said, “On some things, I wait until the very end to do the work.” Marcus said that if it were up to him, “I would have it like it used to be when everybody was on the same thing. It would be easier to do because we could work with each other, but with everybody on different things, we can’t.” He also took issue with having to learn math through a computer program and not the traditional methods he was accustomed to.

**Tracy**

Tracy is a lifelong resident of Piedmont where she is a two-sport student-athlete. She thinks the days at school are long but, “You can learn a lot if you listen.” Her mother did not go to college but feels that it is important for Tracy to go. Her mother does not like the format of the mBolden model. Tracy claims the “deadlines are hard because the teachers don’t teach anymore. “It’s at our own pace. It gets me behind. The teacher puts everything on Blackboard and you have to figure it out. They don’t teach it to you.” Tracy has difficulty taking tests in this environment because students are not on the same assignment as their peers. This means that while one may be testing, others may be collaborating on a project causing distraction for the test taker. She desires for the classes to work together, all on the same assignment.
Mike

Mike is a student-athlete who moved in to Piedmont 4 years ago. He enjoys being at school and socializing with other students. Mike’s mom is currently enrolled in college and has high hopes for Mike’s education. She pushes him hard to be his best and is expecting him to go to college. Mike admitted, “I’m one of those people that slack off, then close to the deadline work really hard to get my stuff turned in, then get a good grade. This year you couldn’t really do that. I had bad grades first semester.” He said the teachers would help with certain things but pressed the students to work on their own. “You used to rely on the teachers to teach you every day and give you assignments and homework, but here you can’t really do that. You have to rely on yourself, your memory, and your responsibility.” Mike said he has difficulty paying attention; he gets distracted causing him to get behind.

Desmond

Desmond is a student-athlete at Piedmont. Desmond appeared to be nervous during the interview and was not very forthcoming with his answers. He enjoys school but admits he gets in trouble, which takes the fun out of it. His parents are excited about his education and at the prospect of Desmond going to college. Despite these expectations, Desmond does not finish his assignments on time and often has to spend a great amount of time trying to get caught up. He says his friends keep him from completing his assignments and he often falls behind.

Shawn

Shawn is a student-athlete at Piedmont and has lived in Piedmont his entire life. Shawn was freely discussing his courses and what they were working on in each of them. Since he was ahead in most all of them, Shawn was able to work on his robots for his Robotics class. Shawn uses his My Time period to catch up on whatever he may be behind on. Shawn’s parents have
some college experience and desire for him to go to college. Shawn says he does not struggle with his classes and he is able to stay caught up with his coursework. He describes himself as, “Basically responsible.” Often times, Shawn sets goals for when he is to finish his projects to prevent falling behind. He takes issue with not being able to get help on a problem if he is too far ahead of the class. He places the responsibility directly on the student for falling behind in their classes. He said, “They haven’t put in what they should have in order to get out what they need. Those people work but they don’t work hard enough.”

**Fischer**

Fischer has been a Piedmont student since Kindergarten. He desires to go to college just as his mom did. He usually finishes his assignments by the deadlines, “but there are times when I get behind,” Fischer said. He stated that there are assignments due every day and when he is unable to finish, it causes him to fall behind in his other classes as he works to get the assignments completed. He warned future students to, “Try to stay on task. There’s not enough time to goof around. If you goof around, you will fall behind.” Fischer would like to see a safeguard implemented for students that may fall victim to goofing around or may experience absences that would allow them to finish their work at the end of the nine weeks grading period without reprimand.

**John**

John has lived in Piedmont his whole life. He is a student-athlete that loves his school and his hometown. He believes that you can get a good education at Piedmont. Both of his parents went to college and his mother graduated. John’s parents believe that college would be good for him and he wants to go to college. John is working on ninth grade subjects in some of his classes. This makes it difficult for him to stay caught up. He doesn’t think it’s good to let
students work at their own pace and he desires an increase in teacher involvement. John admitted, “I’m just not responsible enough to do my homework.” He also stated that he sees a lot of students “goofing off” in the My Time class instead of using it to work on their assignments.

Emma

Emma is a lifelong Piedmont resident. She desires to do well in high school and go to college, like both of her parents. Emma’s parents have expressed to her that they like the mBolden Model but they do not like not knowing what she is working on and what her progress is in her classes. Emma describes herself as responsible and she likes to use her My Time class to get caught up on work she is behind on. She has been able to stay on pace but notices her classmates just staring at their computer screens and thus falling behind. At the time of the interview, Emma had completed the 8th grade curriculum and was upset that they would not let her start the 9th grade work. She is content with the process at Piedmont.

Paige

Paige moved to Piedmont at a young age. Her parents want her to go to college, as neither of her parents were able to go as both dropped out of school before graduating. She struggled with deadlines especially when she first started mBolden. Paige plans on taking an accelerated path through high school so she can enroll in dual enrollment. She stated that students should, “not let the deadlines sneak up on you and snowball.” Paige would like to see additional electives added to the course selections for those who have an idea of their future career choice.
Al

Al is a student-athlete at Piedmont and was very jovial and clever during his interview. Al moved to Piedmont in elementary school. He enjoys being at Piedmont and aspires to attend college even though his parents did not attend college. When talking about his classes, Al admitted, “Deadlines are hard to make.” He complained about the slow pace that his classes are moving and wants the classes to speed up. He points out that even though you are moving at your own pace within the lesson it is still good to communicate with the teacher. He claims that the eighth grade is the most difficult that he’s has encountered in school. Al acknowledged, “There are many who are not doing the work just because they don’t want to.”

Sarah

Sarah has been a Piedmont native for her entire life. She is very involved with sports and extracurricular activities at the school. Her mother has completed several advanced degrees in college and her father did not go to college. She wants to go to college and her parents expect her to go. Sarah is able to stay focused in class but does get behind, usually when there is a new standard assigned and the number of videos to watch is too much for her to complete. She struggles with learning from the videos and prefers interaction with the teacher. Sarah shared what she and others have experienced with this model: “You can miss your deadlines and get zeroes and you lose all your motivation. It’s really frustrating when you have all this to do before you can test and you miss your deadline and get behind. It doesn’t matter if I get caught up, I’m not going to pass anyway.” She is extremely frustrated at the remediation process. Sarah finds that if you take your time working on the standard and then at the deadline you do not master it, you have to complete a large amount of remediation which places you farther behind. If given the chance, she would remove the deadlines. She said, “The teachers don’t
understand how stressful they are.” She also wants the school to do away with the Compass lessons and “have real teachers.”

Nathaniel

Nathaniel is a proud lifelong Piedmont native. He is a student-athlete who loves to compete. He has more free time in his My Time because he was able to exempt a large portion of his individualized learning path due to his scores on the NWEA test. His father did not go to college, but his mother did. His brothers did attend college after military service but Nathaniel’s dad wants him to go straight to college. Nathaniel is able to work ahead and has already completed most of the 8th grade curriculum. “I’m a fast learner and I’m not held behind by the students that need more help.” Nathaniel is able to learn from being placed on Compass to, “just sit there and watch videos learning how to do things. It helps a lot.”
Table 3

Student Participants

<table>
<thead>
<tr>
<th>Participant Pseudonym</th>
<th>Grade</th>
<th>Race</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitch</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Nikki</td>
<td>8</td>
<td>Caucasian</td>
<td>Female</td>
</tr>
<tr>
<td>Myra</td>
<td>8</td>
<td>African-American</td>
<td>Female</td>
</tr>
<tr>
<td>Curtis</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Billy</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Marcus</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Tracy</td>
<td>8</td>
<td>Bi-Racial</td>
<td>Female</td>
</tr>
<tr>
<td>Mike</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Desmond</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Shawn</td>
<td>8</td>
<td>African-American</td>
<td>Male</td>
</tr>
<tr>
<td>Fischer</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>John</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Emma</td>
<td>8</td>
<td>Caucasian</td>
<td>Female</td>
</tr>
<tr>
<td>Paige</td>
<td>8</td>
<td>Caucasian</td>
<td>Female</td>
</tr>
<tr>
<td>Al</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
<tr>
<td>Sarah</td>
<td>8</td>
<td>Caucasian</td>
<td>Female</td>
</tr>
<tr>
<td>Nathaniel</td>
<td>8</td>
<td>Caucasian</td>
<td>Male</td>
</tr>
</tbody>
</table>

Results

Data were collected from the learning coach, interviews, and focus groups. Semi-structured interviews and focus groups provided discussion that led to a thick-rich description of the factors that impact student success at Piedmont Middle School. From the data, codes were
developed. The findings of the study informed three themes that were related to student management, pedagogical difficulties, assessment, and engagement. The three themes are

(a) Student Workload.

(b) Teacher Disconnect.

(c) Content Disengagement.

**Theme Development**

Data were collected from the three primary sources: archival documents, open-ended interviews, and focus groups. During the analysis, notes were made to identify key ideas to lead to effective coding of the information. From the data, the development of the following categories occurred: student management with supervision, pedagogical difficulties with course delivery, assessment within different levels of mastery, and student and teacher engagement. These categories came from the analysis of the transcripts of interviews and focus groups. Once the categories were developed, open coding was used. Then the process moved from open coding to axial coding that helped narrow the categories and connected them to the main point of the research question: how the mBolden Model influences student success. From the coding process, the following codes were developed:
Table 4

Codes and Themes

<table>
<thead>
<tr>
<th>Codes</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deadlines</td>
<td>Student Workload</td>
</tr>
<tr>
<td>Not finishing work</td>
<td></td>
</tr>
<tr>
<td>Falling Behind</td>
<td></td>
</tr>
<tr>
<td>Difficulty staying on task</td>
<td></td>
</tr>
<tr>
<td>Difficulty keeping up</td>
<td></td>
</tr>
<tr>
<td>Sacrificing one class to finish another</td>
<td></td>
</tr>
<tr>
<td>Procrastination</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td></td>
</tr>
<tr>
<td>Apathy</td>
<td></td>
</tr>
<tr>
<td>Frustration</td>
<td></td>
</tr>
<tr>
<td>Rebellion or Rejection of the system</td>
<td></td>
</tr>
<tr>
<td>Teachers don’t teach</td>
<td>Teacher Disconnect</td>
</tr>
<tr>
<td>Bring back paper &amp; pencil</td>
<td></td>
</tr>
<tr>
<td>Figure it out on your own</td>
<td></td>
</tr>
<tr>
<td>Tests are hard because of timing</td>
<td></td>
</tr>
<tr>
<td>Students testing at different times</td>
<td></td>
</tr>
<tr>
<td>Content is difficult to learn on your own</td>
<td></td>
</tr>
<tr>
<td>Compass</td>
<td>Content Disengagement</td>
</tr>
<tr>
<td>Zeros until assignments are turned in</td>
<td></td>
</tr>
</tbody>
</table>

The transcriptions from the interviews and focus groups provided data to analyze for development of the themes. In order to confirm the emerging themes, codes from the interviews and focus group transcripts were compared. As the review of the transcripts progressed, more detailed themes emerged and were compared to initial theme ideas. Themes connected to the research question are: (a) Student Workload - students in mBolden experience difficulty with the workload, (b) Teacher Disconnect - mBolden students are disconnected from the teachers, (c) Content Disengagement - mBolden Students experience difficulty engaging with the content. The students in this study shared their personal experiences with the mBolden Academic Model at Piedmont City Middle School, and while many of them had different experiences at the school, the researcher was able to identify that there were several codes that were present with almost all of the students.
**Student workload.** As research discussed in Chapter 2 pointed out, student motivation was also a key factor in the success of mastery based and CBL programs (Hung & Holen, 2011; Hung et al., 2013; McGahie et al., 2014). Finding the balance of school, activities, and family can be advantageous for students. Of the 17 students interviewed, 13 students mentioned the amount of work assigned as being too much to stay caught up in the allotted time. When asked about the educational experience at Piedmont Middle school Sarah replied,

It’s really good and I like to move ahead and I can relax a bit. But sometimes the deadlines get me stressed out a little. And sometimes when I test, if I don’t really get it, I feel like I’m beating my head against the wall and making no progression.” Sarah lamented: When I get stuck on something I don’t understand and I get brought back and I have all these Compass lessons don’t help and I get brought back to the beginning of the assignment and can’t get caught back up and I get frustrated and procrastinate then take the bad grade. (personal communication, April 2017)

Her frustration has created an avenue for apathy to set in. She felt like why should she do the work if she is going to have to retake it anyway. Likewise, another exclaimed, “You have assignments due every day. Sometimes I don’t get my work finished and I get behind. It’s because I have work in my other classes,” and another added, “Sometimes I am able to finish on time, but sometimes I get behind.” Additionally, a female focus group participant disclosed, “I don’t like it because I don’t like working at my own pace than get behind. Some people are not responsible enough to stay caught up. I like the old way when the teachers taught you and everybody was the same. It would be more fair (sic) because you wouldn’t get behind. The old way teaches you that you have to work harder to get a better grade.” Coupled with these frustrations, Curtis explained his own frustration from stress:
My time is where you get to work on your standards. Every year you take three tests for the ILP. We get an ILP each semester. If you do good on the testing, you don’t get an ILP. On Tuesday and Thursday, you work on your ILP and Monday, Wednesday, and Friday you work on your standards. Now they’re trying to enforce a grade for the ILPs and that is going to stress you more. The ILPs are just added stress. They pile them on us. (personal communication, April 2017)

Teacher disconnect. Students interviewed for this study spoke volumes about the lack of teacher interaction. Statements like, “Some teachers don’t have much involvement in teaching” and “The deadlines are hard because the teachers don’t teach anymore,” are indicative of one of the biggest issues this model: teachers not being able to teach anymore. One student suggested, “we should make the teachers teach so that they can help us understand because that’s why most of us are behind.” Another student, when asked what would they do different replied: “Really have the teachers get more involved…” Yet another said, “The only thing I don’t like is that you’re teaching yourself. The teachers help you but you don’t really understand it.” While teachers are given the autonomy to create content for the standards, they rely heavily on videos and a program called Compass-The Learning Odyssey. As the students reported, Compass has become increasingly the method of choice for content delivery. The format of the Compass-The Learning Odyssey videos is to have a person providing the content (lecturing) and then assign small quizzes and tests for the student. One of the students claimed, “The teachers can help but you can’t really grasp the concept you need because the teachers didn’t teach you,” while another student said, “The teachers are trying to grade everything and don’t really help the ones that are behind.” These statements point to an obvious disconnect between students and teachers.
**Content disengagement.** Previous research discussed in Chapter 2 (Bebell & Kay, 2010; Oppenheimer, 2003; Weston & Bain, 2010) suggested that students will not achieve their full potential in a technological atmosphere unless they are fully engaged. Consequently, the students interviewed expressed that they are not engaged with the content. There is speculation as to what factors may be causing this, but even so, it is has happened. One student mentioned, “I’ve struggled with the stuff we have to learn. It is separated by folders. Sometimes we have two core classes combined, and sometimes it’s a struggle to finish all the work and remember it for when we take the test.” Tracy lamented, “The tests are complicated because there are these bubble things that are hard to click the right one and you have to restart. It’s hard to concentrate when I’m taking a test and everybody is talking. I get distracted.” Unfortunately, another participant expressed her disappointment with a teacher who, “quit teaching and now she just gives us Compass Lessons.”

**Research Question Responses**

The central question for this research study was: How does the mBolden Academic Model influence student success at Piedmont City Middle School? Three sub-questions were developed that supported the central question. This section presents answers for the Central Question along with the three sub-questions.

**Central Question.** How does the mBolden Academic Model influence student success at Piedmont City Middle School?

Overall, the findings from this study suggested that the mBolden model affected student mastery in a negative manner. From the research, it can be determined that students in this program may be given too much autonomy over their educational process, which corroborates previous research that states that in order for blended learning and self-paced instruction to be
effectual there must be an effective teacher and a solid delivery format (Al-busaidi & Al-shihi, 2012; Jokinen & Mikkonen, 2013). Students in this study complained of stress within the model, which ironically is one of the issues that arose from the mPower Piedmont initiative (NextGen Learning, 2015). The mBolden Model does not effectively deal with the issues related to stress and lack of engagement. The amount of work assigned to the students became increasingly stressful for them and in some cases pushed them to give up on completing their work, as Sarah alluded to in her interview. Along with stress, several students expressed a desire for the teachers to return to a more traditional role in the classroom to increase their involvement in the educational process. The negative relationship between the students and the teachers increased due to the disdain the students conveyed in their feelings toward the course delivery systems. All of these factors show that the mBolden Piedmont Academic Model may negatively influence student success at Piedmont Middle School. The following sub-questions validate the negative relationships that were developed between the students, teachers, and the mBolden program.

Sub-Question 1. How does the mBolden Piedmont Academic Model impact mastery for students at Piedmont City Middle School?

The theme of struggling with the workload is apparent through almost all of the data collected. This became apparent in the selection process, as it was difficult finding students that had achieved both mastery and were up-to-date with their assignments. In the interviews, eleven students expressed the difficulty experienced with the number and magnitude of assignments, but it is unclear if this difficulty was self-inflicted. Of all students interviewed, Curtis, John, Emma, and Nathaniel were the only students that had completed all assignments and achieved one hundred percent mastery. Three of these students, Curtis, Emma and Nathaniel, had even finished the curriculum but they mentioned that they enjoy the ability to work at their own pace.
In spite of this success, the other participants were not as complimentary of the process. They spoke of the stress students feel when they fall behind. For instance, Billy said, “Sometimes the deadlines stress me out a little,” while Desmond said, “I fall behind quite a bit.” Fischer also talked about this difficulty, “Sometimes I don’t get my work finished and I get behind; it’s because I have work in other classes.” Along with workload, the issue of teacher engagement is a pressing issue. As noted in Chapter 2, teacher engagement is key in situations that involve mastery based and blended learning (Remesal & Friesen, 2014). The participant responses, which the majority claimed that they stayed caught up with their coursework, and the Mastery Connect reports were contradictory in that only eight students were actually caught up and at eighty percent mastery as opposed to the eleven that said they were. This painted a picture of the teachers not being as involved as the students desired them to be, but it is unclear whether the alleged teacher disconnect is a result of the design of the program or another issue.

Sub-Question 2. What internal factors influence success for students in the mBolden Piedmont Model?

Student success, defined as mastery and completion, is affected internally through motivation or the loss of motivation. The prospect of finishing the school year early was a driving force for some of the participants. Participants in the group were asked, “What are some things you like best about the mBolden Model?” One participant responded, “The fact that it is possible to finish the eighth and ninth grade in the same year. I like the fact that when you finish the ninth grade you will have all your stuff done and by the time you get to 12th grade you will have all your high school math done and you can go on.” His desire to work ahead gave him the drive to push forward, as with others like Myra, who shared, “Some students are faster and can move ahead.” With this freedom comes responsibility that others cannot handle. Together with
Myra, John admitted that he was “not responsible enough to do my homework.” Unfortunately, other participants were stricken with a loss of motivation due falling behind in the assigned work. This would subsequently cause these students to develop anxiety, stress, and even became apathetic. Sarah shared her experience with this very situation. She said, “When I get stuck on something I don’t understand and I get brought back and I have all these Compass lessons don’t help and I get brought back and can’t get caught back up and I get frustrated and procrastinate then take the bad grade.”

**Sub-Question 3.** What external factors influence success for students in the mBolden Piedmont Model?

External factors in the mBolden Academic Model may influence success both positively and negatively. Parental influence, teacher influence, and external distractions were all mentioned by the participants. From the data, it can be determined that students were externally influenced by their parental views on college which could provide motivation for them to do well in middle and high school. When Myra was sharing about her parental influence, she said, “I think she went to college but she always told me to get a good education so I won’t have to work so hard (in a career or profession).” Participants recognized that their parents or guardians felt that education was important and desired for their student to attend college after high school. In sync with their parents, each student expressed positive feelings toward college, even the students that were chosen due to their lower standing. Out of the seventeen participants for this study, four of the participants had both parents attend college, six students had one parent attend college, and seven of the participants come from a home where neither parent attended college. Because of the various levels of collegiate participation, it is unknown if this positive feeling toward college is a result of College and Career Readiness Standards that were being
implemented or as a result of pressure from home, nevertheless every participant believed that college was a possibility for their future. As Mitch alluded to, “It’s getting us ready for college because in college they aren’t going wait – you have to get the work done.”

Secondly, teacher influence was also an external factor in the success of each student. Students credited their teachers with preparing them for college by learning responsibility and said at times they help them with material they may be having difficulty with if time allowed. Because the mBolden Model is designed to allow teachers to switch roles from teacher to facilitator, teachers have an opportunity to engage with students and facilitate learning. The level of commitment to this switch seems to vary by teacher. Participants mentioned that some teachers just use programs and apps as a means to provide instruction to the students and do not engage with the students, as Tracy stressed, “The teacher puts everything on the Blackboard and you have to figure it out – the teachers don’t teach it to you.” At various levels, the teachers are scaffolding the learning with the students. This method can be effective, but for many students in the mBolden Model, teacher behavior is interpreted as not being engaged with the students.

Lastly, various websites that the students have unlimited access to may have a negative impact on student success. The administration that implemented the mBolden Model and the mPower one-to-one initiative did not provide teachers with a method to block websites or prevent the installation of apps onto the student device. In addition to the ability to install any apps, students are given their MacBook with the absence of any type of filtering or monitoring software and are allowed to modify their devices up to the system level. This proved to be a stumbling block for some and one participant even credited his issues at school with distractions that manifested in the form of video sites on the internet.
Summary

The purpose of this qualitative case study was to investigate factors that influenced student success within the academic model at a rural school in Alabama. This chapter presented a brief look at the perceptions and experiences of seventeen students enrolled within the model. Each participant was assigned a pseudonym and background and personal descriptions were presented.

Data were collected through documents, interviews, and focus groups. Once all data were collected, the interviews and focus groups were transcribed. The first coding cycle was completed. The three themes emerged through the second coding cycle. The three themes were: (a) student workload, (b) teacher disconnect, and (c) content disengagement. Each of these themes were present with all participants and data sources.

Lastly, the results for the research questions were addresses by providing answers for the Central Question and the three sub-questions within the study. Each participant expressed a desire for advancing their education, which for some translated into working at a faster pace to prepare themselves to be able to take college level courses in high school. The majority of participants expressed their desire for their teachers to return to a more traditional form of instruction. All of the participants enjoy being at school and welcome the experience; however, there is an underlying desire for a deeper level of involvement from the teachers that cannot be manufactured in the Team Time group setting. Not only did the students talk about getting behind, all of the participants expressed discomfort with the deadlines associated with the work in the mBolden Model. Finally, the students had a favorable view of the mBolden Model or were able to appreciate at least a portion of it.
CHAPTER FIVE: CONCLUSION

Overview

Chapter Five provides a summary of this qualitative case study. The purpose of this study was to understand non-mastery for students in the mBolden Academic Model at Piedmont City Middle School. The chapter gives a summary and discussion of the findings, implications in the light of relevant literature and theory, methodological and practical implications, delimitations and limitations of the study, and recommendations for future research.

Summary of Findings

This study examined eighth graders in the mBolden Piedmont Academic Model to determine why some students are able to succeed in the model and why some struggle. Along with this, this study sought to identify areas that interfere student success. The study was conducted at Piedmont City Middle School in Alabama. The research method used was qualitative, using a case study design. Data triangulation was achieved by the analysis of documents, interviews, and focus groups.

To evaluate the data, Yin’s (2013) five phases of analysis were used, which consisted of gathering all data, disaggregating the data through open coding, developing themes through axial coding, and creating the themes from the coding process to develop a perspective. This analysis allowed the researcher to answer the following research questions:

Central Question

The central question for this research study was: How does the mBolden Academic Model influence student success at Piedmont City Middle School? Students in this study expressed their desire for an increase in teacher involvement and a desire for traditional teaching
methods. The sub-questions develop the idea that students with struggle with workload, finding motivation, and distractions.

**Sub-Question 1**

How does the mBolden Piedmont Academic Model impact mastery for students at Piedmont City Middle School? The findings suggest that the majority of the students experienced difficulty in the model because of the sheer amount of work assigned. The findings also suggest that even though there was a positive view of the teachers, there was still a feeling of distance within the teacher-student relationship leaving the students to feel as if they are alone in their educational journey. The students that do not have the motivation to do well in school will give up more easily and become apathetic. Once they reach this level, they do not want to be there and they do not want to do the work.

**Sub-Question 2**

What internal factors influence success for students in the mBolden Piedmont Model? The findings suggest that all of the students have aspirations to attend college which could be a positive catalyst for intrinsic motivation. However, the findings also show that some of the students experience hopelessness for their education when they fall behind in their work, and for some, this led to a loss of motivation and which gave way to a cycle of anxiety, stress, and apathy.

**Sub-Question 3**

What external factors influence success for students in the mBolden Piedmont Model? The finding showed that all of the students were being encouraged to do well in school and even though that provides a nominal amount of motivation it does not translate to success; as proven by the fact that most of the students were behind on their assignments when the study was
conducted. Students not only struggled with these motivational issues but they also had a battle with disruptions present on their MacBooks. Device distractions such as non-educational apps and websites were also shown to have a negative impact on student success.

**Discussion**

In this study, the discussion centers on the impact the mBolden Model has on students that are in it. While there has been a great deal of research on the key components of the mBolden Model (blended learning, mastery-based learning, and project-based learning) there is no research data on programs like this one since it is a proprietary design. Findings in this chapter discuss relationships to the empirical and theoretical literature reviewed in Chapter Two.

**Empirical literature**

Due to the proprietary design of this program, previous research is unavailable; however, research of the individual components of the model was gathered and compared with the findings of this study.

**Student workload.** According to Al-busaidi and Al-shihi (2012) the framework of a self-paced program can provide a seamless transition from traditional methods. Findings in the current study suggest that students that have experience with a traditional format of school reminisce about it in a more favorable light than their new situation. Previous research by McGahie et al. (2014) stated the goal of mastery based learning was to see all learners on the same objectives at the same time with no discrepancy. In this study, findings show that this goal may be unattainable as each student has their own abilities and beliefs. It also suggests that Carroll’s (1989) idea that all students could learn just not at the same pace, is proven to be true. The amount of assignments, while manageable, seems to be a result of the teacher assigning too many assignments to fill the void left by the videos replacing the teacher’s part in the course,
which may contribute to teacher disconnect.

**Teacher disconnect.** The findings also corroborate Jokinen and Mikkonen (2013) and Dovros and Makrakis (2012), in that students will not work up to their potential without teacher presence and influence. The participants voiced their own opinions about the teacher merely connecting in an online presence and not teaching them. The students also voiced their displeasure with the Compass learning management system being used as a primary method of instruction that could have led to a decrease in motivation which is key to success in an online/blended delivery format (Tseng, Walsh, & Joseph, 2016). Also, this research did not confirm a study conducted by Palensky, Lacy, and Duffy (2001) that stated student attitude had no impact on student performance as most participants were struggling in the model and this negative attitude exposed that the students were disgruntled with the use of CAI. Due to the increased amount of CAI, the teachers are required to devote large amounts of time to entering data and grading assignments. This consumes time that could be used to help students experiencing difficulties.

**Content disengagement.** Prior knowledge, as stated in previous studies, (Casner-Lotto & Barrington, 2006; Hung et al., 2013; and Sockalingam & Schmidt, 2013) is vital for retention of new material. The current study shows that students are struggling to stay caught up and are often completing a large volume of work in a very small window of time, which is not conducive for retention of the material. The students say that the teachers only want them to complete the assignments and do not care if they retain information. These gaps in knowledge lead to frustration as the content continues to move while the student is unable to proceed. In previous surveys of the PCSD students (NextGen Learning, 2015), feelings of hopelessness and lack of engagement were prevalent in the mPower Piedmont Initiative and are still evident in the new
model. In the current study, students declared their frustration as they struggle to meet the deadlines because of the amount of work loaded into the folders within the standards.

**Theoretical literature.** Albert Bandura (1973), who developed the Social Cognitive Theory, and Jean Piaget (1955), who developed the Constructivist Theory, grounded this case study. Bandura (1973) explained student behavior development methods while Piaget was responsible for developing areas of developmental psychology and theory.

**Modeling.** Bandura proved that children will do what they see. Behavior, cognition, and external influences develop in children their attitudes and influence what they will become. Findings in the current study revealed that even though all of the parents desired that their child attend college, the student may be imitating the influences around them. The school district experiences a high level of poverty which could negatively impact student performance. As Badura (1989) suggested people, “Function as contributors to their own motivation, behavior, and development within a network of reciprocally interacting influences” (p. 169). Also, the current study suggests that student interaction may influence student success in a negative manner as students may ultimately be a distraction for some. Myra shared of times where she could not take a test because other students, on a different standard, were being a distraction because they were up out of their seats and were moving about the classroom. This caused her to be unable to focus on her test and this is detrimental to success.

**Self-efficacy.** Bandura (1989) believed that people with a high sense of efficacy were able to see themselves in successful situations that would guide them toward a successful outcome. The current study showed students that were motivated, either intrinsically or extrinsically, worked at a higher pace than their counterparts and had the desire to finish in such a manner that would allow for them to move up a grade level.
Self-guided learning. Piaget (1952) developed constructivism, the idea that people do not learn by being told information but rather by constructing their own knowledge. The current study shows students, when presented with distractions, may experience difficulty in obtaining the knowledge they need to complete the task. This is significant because the environment that has been created at PCMS is one that contains distractions and therefore may cause difficulties for students to stay on task. In the interviews, Myra and Marcus both admitted that they were unable to work at times due to other students talking openly in class and applications that cause distractions such as YouTube and Netflix.

Scaffolding. Scaffolding is the process by which a teacher builds up the student with knowledge and guidance until the student is strong or stable enough to have the ‘scaffold’ removed. “The teachers’ task is to facilitate the child’s learning and act as a guide. Decentering the teacher authority is shared so that students may engage and critique the education they are undertaking” (Ultanur, 2012, p. 209). The novel contribution of this study is an attempt to provide clarity and focus as to how the mBolden Model impacts, negatively or positively, student success which could help the program or others like it. Findings revealed students within the model are happy with it because of the freedom it allows but also complain about the way the teachers do not teach them. Therefore, allowing the teacher to assume a more interactive role with the students would be helpful to the students. Findings also suggest that steps to remove distractions would also benefit students as well.

Implications

The findings in this study carry important implications pertaining to any institution examining the option of following the model set forth by the mBolden design. Mike gave a synopsis of the method students use in this model when he said, “I’m one of those people who
slack off, then close to deadline work really hard to get my stuff turned in, then get a good grade.” This is not the traditional form of ‘slacking off’ where you keep your grades close and make good on the final exam. He is referring to not doing any work until the deadline and then completing a large amount of work in a short time period. This could lead to the student not retaining any knowledge. Students at Piedmont City Middle School are able to watch videos; talk in class; message each other; interact on Facebook and other social media, on both their phones and MacBooks; and even watch movies on Netflix anytime with no fear of reprisal. The results of this study show that middle school students cannot handle the responsibility of having free reign over a MacBook and the use of unlimited internet. It is suggested that schools that venture into this type of program do so with the student’s education in mind and configure their devices so that only approved sites are allowed with no customization of the MacBook allowed by the student.

**Theoretical Implications**

The theoretical implications of this study suggest that teachers become more engaged in the classes they are responsible for. One of the male participants in the Focus Group said, “The lack of teacher involvement is a problem because most people don’t know what to do when they get lost.” It is suggested that the teacher model the desired behaviors in the classroom, such as the proper way to use the applications and programs and demonstrating proper device use in the classroom. Computer-Aided Instruction can have an effective place in the educational process, but when it replaces the teacher, there can be issues. Students share answers by taking screenshots, texting the answers, sharing passwords so that students can use previously completed assignments to get answers, sharing passwords to do someone else’s work for them, the list could go on. Students are learning ways to cheat the system, not how to learn in it.
Student integrity is almost impossible to regulate in the current model, but could be managed by implementing a stricter cell phone policy and installing management software on the student devices to allow the teacher to monitor the student computers.

**Practical Implications**

The practical implications of this study suggest that CAI be scaled back and teacher units be focused on math and foreign language. These areas would benefit most from increased teacher involvement because of the personal interaction that would occur between the teacher and the student, which is one thing the students were craving. Because of this, student-teacher interaction creates trust and buy-in for both parties. Furthermore, to decrease the use of CAI, online courses should be kept to a minimum and only used in the case of credit recovery and alternative placement. Course work should be scaled back to allow for the increased teacher involvement and to make effective use of the teacher’s abilities. Scaling back on the number of online courses will create an environment that fosters personal interaction between the student and teacher and would eliminate the need for Team Time and My Time. Lastly, with the growth of the mBolden Academic Model, professional development for the teachers in each of the three schools needs to be focused on the facilitation of learning. Teachers need to understand what it means to be a facilitator. This is not a situation to turn the students loose but rather an opportunity to guide the students to a situation of learning that will lead to success.

**Delimitations and Limitations**

This qualitative case study was conducted to examine the impact that the mBolden Model had on student success. It was designed with delimitations in place due to the short time the mBolden Piedmont Academic Model had been active. Another delimitation was the choice of the 8th grade class because they were the first class to be placed completely in the program, i.e.
all classes taught within the mBolden Model. Finally, mastery scores were also a delimitation. Along with the delimitations, this study also had limitations. First, because of the proprietary design of the program, there is no research available on it. Secondly, because of the nature of the program and the size of the sample, generalizability would be difficult to obtain. In order for this to occur, more programs like mBolden would have to be implemented and then a larger sample could be chosen. Thirdly, the study was confined to rural Alabama, which did not include all ethnicities. Should this study be replicated, it should be done in urban areas and areas of high socio-economic levels and could produce dissimilar results.

**Recommendations for Future Research**

With technology constantly evolving, school districts have to remain in a constant state of improvement to meet the demands of standardized testing and increased accountability. Based on the findings of this study, it is recommended that future research should focus on quantitative data, such as standardized test scores in relation to mastery scores, to see if there is a correlation between the two. The use of standardized test scores is a foundational piece in the mechanism of accountability and for that reason, if there is a positive relationship present, administrators and educators could use this data to drive their instruction. This data could also be used as an early indicator of the need for additional services that may be needed for the student.

Because there are so many components present in the mBolden Model, further research could examine each component with another school that is exclusive to that component, i.e. blended learning, mastery based learning, PBL, etc. For instance, School A is an organization that is exclusive to a blended learning philosophy. School B is a school is an organization that is based on the mBolden Model. Future research could assess the two cases to determine the
differences or similarities between scores from each school. For this study, students that had been in the program from the beginning were chosen. As other schools model their programs after the mBolden Model, similar studies could be completed using each grade as a group.

Together with the previous recommendations, additional research could focus on the student home environment. Since the PCSD has a high level of families considered low income, future research should focus on whether or not student performance is affected by socioeconomic status for students within the mBolden Model. Future research could use schools that are larger than Piedmont but have similar percentage of students on the free and reduced lunch program and are using programs similar to mBolden Piedmont. Particularly, more attention should be paid to the question of whether the mBolden Academic Model is able to counteract the negative effects of low socioeconomic influences by giving the students opportunities to succeed?

Along with socioeconomic factors, time spent in the mBolden environment could influence student success. Students in this study had been in the mBolden Model for two years; a fairly short amount of time. As the students continue to participate in the model and it becomes the new normal. Could this influence student success? Research could examine if there is a significant relationship between the length of time a student has participated in the mBolden Model and student success.

Finally, this study revealed that middle school students do not have the ability to govern themselves in regards to limiting internet distractions. Several participants self-reported that they were not completely engaged with the content. Further research could examine internet usage at school in a limited use versus unlimited use with a case study approach. The composition of this model, along with the technology used in it, provide numerous opportunities
for exploration that will provide keys to improve the success of the model and those who are supposed to benefit from it.

**Summary**

This study was conducted to investigate the factors that affect student success in the mBolden model, more specifically, the reasons why some students are having success in the mBolden model and why some are experiencing difficulty. Students reported that they struggle with the amount of work, building relationships with teachers, and difficulties with the content. A few of the participants have a favorable view of the model and have taken advantage of different opportunities it offers; however, the majority expressed thoughts and feelings that were contrary to that and long for change. These students have given weight to the theoretical framework of this study. The literature review focused on the theoretical framework inspired by Bandura (1973, 1989) and Piaget (1952), which provided the theoretical underpinning for this study. Bandura believed that a person’s belief in their own abilities affects their response to stressful situations. The response to stress can be developed by watching another person’s response and replicating it through modeling, as Bandura believed that was the sole influence over a person and not inner forces or environment. The literature review also included Piaget, who was instrumental in the development of the constructivist theory. Constructivism promotes scaffolding, a process by which students are constructed by teachers in a way that allows for student guided inquiry while being assisted by the teacher.

The results of this study were discussed from the theoretical and empirical perspectives. Both theoretical and practical implications were discussed. Limitations were acknowledged along with the recommendations for future research. The main take-away is that middle school students are old enough to deserve a small amount of freedom in their educational journey but
not more than they can handle. The participants in this study needed additional barriers to help
guide them to their goals. The focus of this study is to insert awareness into the conversation
when it pertains to programs based on or similar to the mBolden Piedmont Academic Model and
afford the teachers the opportunity to use their talents to positively impact the lives of their
students.
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APPENDICES

Appendix A: Parent/Guardian Consent Form

PARENT/GUARDIAN CONSENT FORM

New Horizons in a Next Generation School: A Case Study of Rural Alabama Middle School Students in a Transformational Initiative
Jack Harley Lamey, Sr.
Liberty University
School of Education

Your student is invited to be in a research study of the mBolden Piedmont academic model. He or she was selected as a possible participant because of his or her performance in the program. Please read this form and ask any questions you may have before agreeing to allow him or her to be in the study.

Jack Harley Lamey, Sr., a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to determine how the mBolden Academic Model influences student success at Piedmont City Middle School.

Procedures: If you agree to allow your child/student to be in this study, I would ask him or her to do the following things:

1. Participate in an interview. This will generally take less than thirty minutes. The audio from this interview will be recorded and analyzed as a part of the study.
2. Participate in a focus group. This will generally take less than an hour and will be with other students participating in the study. The audio from this interview will be recorded and analyzed as a part of the study.

Risks and Benefits of being in the Study: The risks involved in this study are minimal, which means they are equal to the risks your child/student would encounter in everyday life.

Participants should not expect to receive a direct benefit from taking part in this study.

Compensation: Your child/student will not be compensated for participating in this study.

Confidentiality: The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records. I will conduct the interviews in a location where others will not easily overhear the conversation. Recordings and transcripts will be stored on a password-protected computer. Since the study will be using focus groups, I cannot assure participants that other members of the group will not share what was discussed with persons outside of the group.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to allow your child/student to participate will not affect his or her current or future relations with Liberty University or Piedmont Middle School. If you decide to allow your child/student to participate, he or she is free to not answer any question or withdraw at any time without affecting those relationships.
How to Withdraw from the Study: If your child/student chooses to withdraw from the study, you or your child/student should contact the researcher at the email address/phone number included in the next paragraph. Should your child/student choose to withdraw, data collected from him or her, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but his or her contributions to the focus group will not be included in the study if he or she chooses to withdraw.

Contacts and Questions: The researcher conducting this study is Jack Harley Lamey, Sr. You may ask any questions you have now. If you have questions later, you are encouraged to contact him at 901-493-6609 or jialamy@liberty.edu. You may also contact the researcher’s faculty advisor, Dr. Sarah Pannone, at sjpannone@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Green Hall 1887, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. I consent to allow my child/student to participate in the study.

(NOTE: DO NOT AGREE TO ALLOW YOUR STUDENT TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

☐ The researcher has my permission to audio-record my child/student as part of his or her participation in this study.

Signature of Parent ____________________________ Date ____________

Signature of Minor ____________________________ Date ____________

Signature of Investigator ____________________________ Date ____________
Appendix B: Superintendent Permission Letter

February 2, 2017

Dear Liberty University IRB:

The purpose of this letter is to inform you that I give Jack Harley Lamey, Sr. permission to conduct the research titled New Horizons in a Next Generation School: A Case Study of Rural Alabama Middle School Students in a Transformational Initiative at Piedmont City Middle School. This also serves as assurance that this school complies with requirements of the Family Educational Rights and Privacy Act (FERPA) and the Protection of Pupil Rights Amendment (PPRA) and will ensure that these requirements are followed in the conduct of this research.

Dr. Matt Akin
Superintendent
Appendix C: IRB Approval Letter

February 15, 2017

Jack Harley Lamey, Sr. Ed.S
IRB Approval 2772.021517: New Horizons in a Next Generation School: A Case Study of Rural Alabama Middle School Students in a Transformational Initiative

Dear Jack Harley Lamey, Sr. Ed.S,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
The Graduate School
Appendix D: Semi-structured Interview Questions for PCMS Students in mBolden Model

*Semi-structured Interview Questions for PCMS Students in mBolden Model.*

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student/Interviewer Connection</td>
<td>- Please introduce yourself to me as if we just met each other.</td>
</tr>
<tr>
<td></td>
<td>- Please describe your upbringing (place of birth, where you attended Elementary school).</td>
</tr>
<tr>
<td></td>
<td>- Tell me about a day in your life at Piedmont City Middle School.</td>
</tr>
<tr>
<td></td>
<td>- How do your parents or guardians feel about education? Did they attend college or technical school? Do they want you to go to college?</td>
</tr>
<tr>
<td>Student Responsibility</td>
<td>- The mBolden Piedmont Academic Model is set up to allow for students to work at their own pace. Naturally, this involves a certain level of responsibility. Do you usually finish your assignments on time?</td>
</tr>
<tr>
<td></td>
<td>- How would you describe your ability to stay caught up on your assignments?</td>
</tr>
<tr>
<td>Learning Environment Effectiveness</td>
<td>- Personalized learning is a key component of the mBolden model.</td>
</tr>
<tr>
<td></td>
<td>- How does the mBolden model allow you to work at your own pace?</td>
</tr>
<tr>
<td></td>
<td>- Tell me about some of the struggles you have experienced with courses in the mBolden Piedmont Model.</td>
</tr>
<tr>
<td>Student Role Playing</td>
<td>- Imagine yourself in front of the incoming 6th graders next year, what would you tell them about the mBolden Model that would help them as they come into the middle school?</td>
</tr>
<tr>
<td></td>
<td>- Since the mBolden Model focuses on personalization, let’s pretend you were given the opportunity to create or personalize your own version of mBolden Piedmont, what would it look like?</td>
</tr>
</tbody>
</table>
### Appendix E: Questions for Focus Groups of PCMS Students in mBolden Model.

*Questions for Focus Groups of PCMS Students in mBolden Model.*

<table>
<thead>
<tr>
<th>QUESTION TYPE</th>
<th>QUESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening</td>
<td>- How do you like going to school at Piedmont City Middle School?</td>
</tr>
<tr>
<td></td>
<td>- What do you know about the mBolden Piedmont Academic Model?</td>
</tr>
<tr>
<td></td>
<td>- What do you think of the mBolden Piedmont Academic Model?</td>
</tr>
<tr>
<td>Introductory</td>
<td>- What are some things you like best about the mBolden Model?</td>
</tr>
<tr>
<td></td>
<td>- What are some things you dislike about the mBolden Model?</td>
</tr>
<tr>
<td>Transition</td>
<td>- On a scale of 1-10 (1 being the worst and 10 being the best), how do you rate your educational experience at Piedmont City Middle School? Why?</td>
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<td>- What does the term mastery mean?</td>
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<td></td>
<td>- Describe a typical session in My Time? Goal Time?</td>
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<td>- Think back to what school was like school before you started mBolden. What are some differences between school before the change? Is it better now or worse?</td>
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<td>Key</td>
<td>- Suppose that you had one minute to talk to the Superintendent on the mBolden Model, what would you say?</td>
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<td>Ending (Exit)</td>
<td>- How do you like going to school at Piedmont City Middle School?</td>
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<td></td>
<td>- What do you know about the mBolden Piedmont Academic Model?</td>
</tr>
<tr>
<td></td>
<td>- What do you think of the mBolden Piedmont Academic Model?</td>
</tr>
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</tr>
</tbody>
</table>
Table 1

*Semi-structured Interview Questions for PCMS Students in mBolden Model.*

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student/Interviewer Connection</td>
<td>- Please introduce yourself to me as if we just met each other.</td>
</tr>
<tr>
<td></td>
<td>- Please describe your upbringing (place of birth, where you attended</td>
</tr>
<tr>
<td></td>
<td>Elementary school).</td>
</tr>
<tr>
<td></td>
<td>- Tell me about a day in your life at Piedmont City Middle School.</td>
</tr>
<tr>
<td></td>
<td>- How do your parents or guardians feel about education? Did they attend</td>
</tr>
<tr>
<td></td>
<td>college or technical school? Do they want you to go to college?</td>
</tr>
<tr>
<td>Student Responsibility</td>
<td>- The mBolden Piedmont Academic Model is set up to allow for students</td>
</tr>
<tr>
<td></td>
<td>to work at their own pace. Naturally, this involves a certain level of</td>
</tr>
<tr>
<td></td>
<td>responsibility. Do you usually finish your assignments on time?</td>
</tr>
<tr>
<td></td>
<td>- How would you describe your ability to stay caught up on your assignments?</td>
</tr>
<tr>
<td>Learning Environment Effectiveness</td>
<td>- Personalized learning is a key component of the mBolden model.</td>
</tr>
<tr>
<td></td>
<td>- How does the mBolden model allow you to work at your own pace?</td>
</tr>
<tr>
<td></td>
<td>- Tell me about some of the struggles you have experienced with courses</td>
</tr>
<tr>
<td></td>
<td>in the mBolden Piedmont Model.</td>
</tr>
<tr>
<td>Student Role Playing</td>
<td>- Imagine yourself in front of the incoming 6th graders next year, what</td>
</tr>
<tr>
<td></td>
<td>would you tell them about the mBolden Model that would help them as</td>
</tr>
<tr>
<td></td>
<td>they come into the middle school?</td>
</tr>
<tr>
<td></td>
<td>- Since the mBolden Model focuses on personalization, let’s pretend you</td>
</tr>
<tr>
<td></td>
<td>were given the opportunity to create or personalize your own version of</td>
</tr>
<tr>
<td></td>
<td>mBolden Piedmont, what would it look like?</td>
</tr>
</tbody>
</table>
Table 2

*Questions for Focus Groups of PCMS Students in mBolden Model.*

<table>
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<tr>
<th>QUESTION TYPE</th>
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</tr>
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<tr>
<td>Opening</td>
<td>- How do you like going to school at Piedmont City Middle School?</td>
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<tr>
<td></td>
<td>- What do you think of the mBolden Piedmont Academic Model?</td>
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<tr>
<td>Introductory</td>
<td>- What are some things you like best about the mBolden Model?</td>
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<tr>
<td></td>
<td>- What are some things you dislike about the mBolden Model?</td>
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<td>Transition</td>
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