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Middle School Students' Experiences in an Online Problem-Based Learning Environment

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
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2018

Abstract

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by

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MS, Walden University, 2009

BA, Clayton State University, 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The purpose of implementing educational reform is to improve the academic achievement and social skills of graduating students, but evaluating the benefits of a particular instructional method or curriculum design can be complicated. In an online and problem-based learning environment that allows students to choose content and assessment projects and self-pace, the motivation of students to learn and their engagement in the learning process significantly influences the success of the program. This generic qualitative study focused on the experiences of middle school students participating in an online and problem-based educational setting. The study included interview data and self-evaluation questionnaires about students' levels of motivation and engagement. Vygotsky's zone of proximal development (ZPD), Bandura's theory of self-efficacy, Dewey's experiential learning theory and other motivational theories provided the conceptual framework for this qualitative study of personalizing learning in constructivist environments. The data were analyzed through inductive thematic analysis with constant comparison. The findings highlighted the student perspective and identified factors that influenced students' buy-in to this type of personalized education. The results from this study may be used to help teachers plan and design curriculum and instructional strategies that encourage student motivation to learn and engagement in the learning process. Students who are motivated to learn and engaged in the learning process are more likely to graduate from school with the knowledge and skills required to enter the workforce and become productive knowledge workers in a knowledge economy.

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Dedication

This study is dedicated to my students: past, present, and future. You teach me every day and make me want to be the best teacher that I can be. You show me what courage, perseverance, and hard work can accomplish. I pray that I live up to my calling and teach you well.

Acknowledgments

I would like to take a minute to thank the many people who challenged, encouraged, and supported me throughout this process. First, I want to thank my fantastic co-workers who shared ideas and challenged me to think about things in a different way. I would not have finished this study without you. Second, I want to thank my friends who encouraged me to be my students' voice and to tell their stories. You will never know how important you are to me. Finally, I want to thank my amazing family. Caleb and Drew, you inspire me; you make me so proud to be your Mom. I know you have sacrificed a lot while I pursued my degree. Thank you. I have no words adequate to thank my ex-husband. Scott, for all you did to support me over the 26 years of our marriage, thank you. You were my other half and without you, I would not be me.

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Chapter 1: Introduction to the Study

Introduction

The integration of computers has dramatically influenced society and has transformed educational environments. According to Pew Research Center (2017), 88% of adults in the United States had Internet access. Furthermore, public schools in the United States provide computer access to 1 in 5 students (Herold, 2016) schools have purchased over 23 million mobile devices including laptop computers, netbooks, or digital tablets (Herold). However, integrating these technologies into constructivist learning environments has many difficulties (Anderson, 2016).

According to Gunn and Hollingsworth (2013), teachers use new technologies to differentiate instruction and assessment, thereby personalizing students' learning and encouraging students to build 21st century skills. Ravitz and Blazevski (2014) suggested that using a flipped classroom model, where students view lessons online at home or in lab time and spend class time focused on problem solving or project-based learning, may increase student understanding and encourage creativity. These flipped classrooms are blended classrooms, which is a pedagogy that blends online learning with more traditional learning in the classroom (Rahman, Zaid, Abdullah, Mohamed, & Aris, 2015). Additionally, the integration of new pedagogies into these blended, project-based learning environments, such as project-based learning which focuses on student-directed development of projects (Rahman et al.), can differentiate instruction and encourage the development of advanced 21st century skills.

The purpose of this study was to investigate the experiences of middle school students as they participated in personalized learning that blends face-to-face instruction with technology lessons and problem-based project development. The results of this study of the students' response to this type of blended, problem-based learning environment provides educators with information that can be used to transform public school policy and practices.

Background

New methods of teaching impact students' experiences, but research often focuses on the effectiveness of the curriculum, instructional methods, or programs to increase academic achievement without taking into consideration the emotional aspect of teaching and learning. In this study, I examined the experiences of students who were participating in a blended, problem-based learning program to gain a better understanding of their level of engagement and motivation. In the blended classroom focused on in this study, both face-to-face and online interactions takes place in a problem-based program that requires students to engage in developing collaborative projects. This nontraditional instructional model was implemented at the middle school study site to increase students' motivation, levels of engagement, and learning in the classroom.

The framework for this study was based on the concepts of (a) constructivist learning principles, including Vygotsky's (1978) zone of proximal development (ZPD) and Dewey's (1938) experiential instructional model; (b) motivational theories; and (c) the project-based learning model. Vygotsky's ZPD and Dewey's experiential learning theory provided a basis for understanding the learning principles in the blended

educational program under study. Additionally, the motivational theories of Schunk, Meece, and Pintrich (2014) and Keller (2010) outlined a need for educational programs to encourage student engagement and motivation to learn and provided a lens for understanding students' perception of their own motivation and engagement. Similarly, Marzano, Pickering, and Pollock (2001) encouraged specific differentiated instructional models, such as project-based learning, to support increased levels of engagement and motivation among students. Through this study, I developed a new understanding of the students' experiences in a blended, problem-based learning program.

Problem Statement

According to File and Ryan (2014), in 2013, 83.3% of households in the United States had at least one computer, and 74.4% had Internet access. Schoolchildren are using technology in the form of tablets, notebooks, and computers provided by the school system to complete assignments and to communicate with teachers and peers (Herold, 2016).

However, along with the positive opportunities that online programs offer, there are many challenges. Bennett-Bealer (2014) found that one challenge educators face is that technology is changing so quickly that it is difficult to determine what technology to use in the classroom and how to stay informed or skilled with ever-changing online platforms. Schunk et al., (2014) cautioned that technology use may not increase motivation, and they suggested monitoring motivation through the use of student questionnaires. The integration of blended, problem-based learning environments to encourage engagement and learning is part of the movement to reform classrooms across

America. In this study, I researched student experiences as they participated in an innovative, problem-based, instructional model that integrates varied multimedia websites incorporated into Google Classroom.

Purpose of the Study

The purpose of this study was to investigate the experiences of middle school students as they participated in personalized learning that blends face-to-face instruction with technology lessons and problem-based project development. Problem-based learning is a learning environment that focuses on student-directed development of projects in response to civic, social, or physical problems (Rahman et al., 2015). Google Classroom is a program that stores students' work, allows students to communicate with the teacher and collaborate with peers, includes a to-do list and a class calendar to help students meet deadlines, and provides an avenue for feedback on assignments (Ventayen, Estira, De Guzman, Cabaluna, & Espinosa, 2018). The incorporation of a personalized student home page is designed to support the development of student motivation and engagement and encourage advanced learning (Ventayen et al., 2018).

The vision for Grassy Meadows Middle School (a pseudonym) is to create a learning environment that responds to the needs of each student and provides multiple pathways for students to advance in their learning. Students move through the content at their own pace using a rigorous curriculum that leverages their strengths and connects with their college and career interests**.** This generic qualitative study of the students' response to the integration of the online learning management system, Google classroom,

in their problem-based learning environment provides educators with useful information to transform public school policy and practices.

Research Questions

The research question for this study were:

1. What are the experiences of middle school students interacting in a blended online and problem-based learning environment?
2. How do middle school students describe their motivation in response to a blended online and problem-based learning environment?
3. How do middle school students understand their level of engagement in a blended online and problem-based learning environment?

Conceptual Framework

The framework for this study was based on the concepts of constructivist learning principles, including (a) Vygotsky's ZPD, (b) Kolb's experiential instructional model, and (c) motivational theories. Vygotsky's (1978) ZPD and Kolb's (2012) experiential learning theory provided me with a basis for understanding the learning principles in this blended educational program. Additionally, motivational theories found in the work of Schunk et al. (2014) and Keller (2010) helped me identify the nature of motivation in student-centered, project-based learning environments designed to encourage student engagement. In this study, I examined the experiences of students who were participating in a blended, project-based learning program to gain a better understanding of their experiences and perceptions.

Nature of the Study

In a generic, qualitative inquiry the researcher reviews and examines the subjective reflections of individuals who are participating in a particular program (Percy, Kostere, & Kostere, 2015). This type of research is appropriate when the researcher has prior knowledge or understanding of the program and wants to learn more from the participants' perspective (Percy, Kostere, & Kostere, 2015). In a personalized education setting, the teacher or facilitator tailors the curriculum content, the method of instruction, and the demonstration of mastery to each individual student (Basham, Hall, Carter, & Stahl, 2016). The research site, Grassy Meadows Middle School, was a school that had implemented a personalized learning format and was in the process of building career pathways. Students in the site school work through a pathway or choice board to complete activities building their knowledge from basic understanding to application in context and finally to application in an inquiry into an interdisciplinary, real-world problem. I was a teacher in the school who wanted to learn the students' perspective of the program and their self-evaluation of their levels of motivation and engagement in the learning process.

I chose a generic qualitative approach for this study because I had extensive prior knowledge of the program and wanted to examine the student perspective (see Percy et al., 2015). Using the students' experiences as a construct provided me with the ability to define the experiences of the learners in a blended, problem-based learning environment. The data collected included the results from semi structured interviews of 10 students enrolled in the blended online and problem-based learning environment and

questionnaires with their perceptions of their motivation and engagement. I used inductive analysis of their responses to code the data.

Definitions

I used the following terms operationally in describing aspects of the study:

Blended learning: The combination of technology lessons with face-to-face instruction (Vaughan, 2016). This is accomplished in the case school through a mix of supervised lab time during which students' complete units of study, online tests and quizzes, and research for projects with short content classes each day.

Personalized instruction: "Personalized learning is loosely conceptualized in the literature" (Waldrip et al., 2014, p. 357), but for the purposes of this study was defined as an effort to include voice and choice in what content is studied, the format of the content, the pace of progress, and the final demonstration of learning. In the case school, teachers offer choice boards with many options, but they also encourage students to propose additional options if none offered are interesting or relevant to the future goals of the student.

Problem-based learning: A subset of project-based learning that usually begins with a social problem or need. According to Gao (2012), in problem-based learning environments students develop a plan and share in the decisions about content and products.

Project-based learning: This type of learning allows students to progress through the phases of a project, learning necessary content to be able to complete tasks or answer questions as they arise, authentically and with increased relevance, as opposed to learning

facts or formulas without understanding the purpose (Mosier, Bradley-Levine, & Perkins, 2016).

Self-efficacy: According to Keller (2010), self-efficacy refers to a person's belief that he or she can succeed at a given task, while feelings of efficacy refer to the satisfying feelings of mastery or insight as an individual interacts with the environments

Assumptions

According to McMillian and Schumacher (2006), "Qualitative research is based on a constructivist philosophy that assumes that reality is a multilayer, interactive, shared social experience that is interpreted by individuals…perceptions are what they consider real and thus what directs their actions, thoughts and feelings" (p. 135). In this study, I assumed that the participants would answer the questions honestly to reflect their true actions, thoughts, and feelings. Methodologically, by using the generic, qualitative design in this study and combining survey results and interview data to understand the students' perspective about online problem-based learning instruction, I assumed that students in this setting may have had factors outside of the setting that influenced their perceptions and responses.

Scope and Delimitations

The population for this study was comprised of middle school students from the site school who participated in the blended online and problem-based learning environment in a suburban area in the southeastern United States. Students who I had taught were excluded from the participant pool. Because I was concerned with the students' feeling of well-being and efficacy, I did not evaluate academic achievement

beyond what was offered by the students in interviews. Additionally, I did not focus on the achievement of diverse learners in the blended online and problem-based program from the perspective of self-regulated learning (see Bandura, 1985).

Limitations

Transferability is the ability to generalize the research findings to other settings (Shenton, 2004). Shenton identified several topics that should be taken into consideration prior to any attempt at transference, including the types of data methods employed, the period when data were collected, restrictions to the types of participants that contributed data, variability of organizations that participated, and the number of participants involved. In this study, I established a set of inclusive criteria to enable others to understand the eligibility criteria for participation. I also addressed this issue by acknowledging the limitations of the study based on these factors.

Dependability is the ability of the study to be repeated (Shenton, 2004). According to Shenton, to achieve this concept sections of the study should be devoted to three aspects: (a) the research design and its implementation, (b) the operational detail of data gathering, and (c) reflective appraisal of the project. For the research design of this study and its implementation, which is description of what was planned, I prepared a step-by-step process of the research plan as a guideline to follow as well as for anyone else interested in repeating the study. To address the concept of the operational detail of data gathering, or what was done in the field, I used field notes and the transcripts of the interviews. For reflective appraisal of the project, I maintained open lines of communication with my mentor and other committee members.

It should be noted that I was a teacher in the case school. Interview subjects did not include any present or past students, but some students who responded to the survey were familiar with me. Additionally, I believe that problem-based learning and online learning can be beneficial when properly implemented. To avoid bias, the interview questions were open-ended and student responses were recorded. As often as possible, during analysis and in the publication of the study, I used the words of the respondents verbatim to maintain the authenticity of the data.

Significance

Although many studies have evaluated the academic advantages of implementing problem-based learning in secondary and postsecondary education settings (e.g., Bottge, Gassaway, Toland, Butler, & Cho, 2014; Jacobs, 2014; O'Brien, Lawrence, & Green, 2014), little research has been conducted to understand how middle school students experience combining online learning with face-to-face instruction in a problem-based learning environment designed to increase student motivation and engagement in learning. With this study, I addressed the gap in prior research. The significance of this study lies in the ability to understand student responses in a blended online and problem-based learning environment. Understanding the perspective of the learners may help teachers to design and implement new pedagogical strategies to support 21st century learners.

Summary

The integration of online problem-based learning environments is part of the movement to reform classrooms (Herlo, 2016). Yuen (2011) investigated teacher and

students' experiences using blended learning in university courses, and Delialioglu and Yildirim (2007) studied students' perceptions of interactive learning in college computer and communications courses. Gao (2012) studied the teachers' experiences when implementing problem-based learning at the middle school level but did not investigate the students' perspective.

In this study, I addressed the gap in prior research because I focused on student experiences as they participated in an innovative instructional model that combined (a) the use of available open educational resources such as Khan Academy, LearnZillion, or CK12 with (b) blended instructional methods and (c) a problem-based learning model that uses holistic rubrics to assess learning. Innovative tools integrated into this blended problem-based program included (a) the use of online research tools to create student projects, (b) multimedia software for presentation design, and (c) development of social media outlets such as wikis to share projects and receive peer feedback. In Chapter 2, I will provide a review of the conceptual framework underlining the study and a thorough analysis of the current literature related to the study.

Chapter 2: Literature Review

Introduction

The purpose of this study was to investigate the experiences of middle school students as they participated in personalized learning that blends face-to-face instruction with technology lessons and problem-based project development. The overarching research question for this study was: What are the experiences of middle school students interacting in a blended online and problem-based learning environment? Personalizing learning by blending instruction, using technology to deliver content, and face-to-face time to explain and support students' practice, thereby tailoring the content, the pace of instruction, and the method of assessment may significantly change public education practices.

One question that is rarely addressed by researchers is how students feel about the process. The reason I conducted this qualitative study was to deeply explore the experiences that students have in a blended learning environment. The previous research I cited in this chapter was focused on postsecondary programs or the test scores of students in nontraditional middle and high schools. Younger students have different learning challenges and varying levels of intrinsic motivation (Vygotsky, 1978). Although test scores have a purpose, they do not tell the whole story. By interviewing students and examining student questionnaires, I gained a better understanding of their social and emotional responses to personalized learning in addition to their motivation and engagement in learning through the program.

In Chapter 2, I will review the conceptual framework for this study including discussions of sociocultural learning theory, experiential learning, and social learning theory. I reviewed the critical research on the following topics relevant to my research: 21st century learning skills, the development of advanced cognitive processes, challenges for innovation in education, reform issues, constructivist learning principles, problem-based learning, blended learning, and personalized blended learning.

Literature Search Strategy

To begin my organization of data for the literature review, I scheduled a meeting with a Walden librarian. This meeting was held over the phone with computer screen sharing on January 23, 2017. We explored several databases and tried different combinations of keywords to find the most applicable studies for me to use in the literature review. After our meeting, I developed a Microsoft Excel spreadsheet to organize my data and to keep track of what search engine, key words, and limiters were used in each search. The databases I used for this study were Science Direct, Google Scholar, Education Source, Learn Tech Library, Teacher Reference Center, and ERIC. The key search terms I employed were *efficacy or self-advocating, blended learning, interactivity and motivation or engagement in learning*, *online,* and *personality profile or learning profile*.

In Education Source, I searched for articles written by or about the theories of Kolb or Pohlman. I found 24 articles related to Kolb with the limiters of scholarly, peer reviewed and experiential learning published since 2014, including articles concerning the role of the educator, interaction online, learning styles, and collaborative learning. I

also found 26 articles related to Pohlman with the limiter of scholarly, peer reviewed and written in English. The article I referenced in this study pertains to self-perceptions of students. In ERIC, I searched for articles related to *experiential learning, motivation,* and *engagement*. The articles referenced discuss maximizing experiential learning for student success, fostering student success and engagement, and online and blended learning opportunities.

In Science Direct, I searched for several different topics. First, I used the search terms *blended learning* and *middle grades or middle school*. I found 20 articles and chose those that reviewed the literature related to blended learning, examined self-efficacy related to digital competence, and observed the students' online communication in blended learning environments. Then I searched using the terms of *theory and interactivity* and *motivation or engagement*. I found 15 articles about these topics and chose two articles related to interpersonal interaction and online, student-centered learning. Next, I searched using the terms *theory and experiential learning* and *project-based learning*. I found 11 articles and chose one about teacher engagement and student satisfaction in a playful learning environment and one about at-risk students' interactions online. Finally, I searched using the key terms *online* and *personality profile or learning profile.* I found 12 articles and chose two related to online networking, interactive learning environments, and learning management systems.

In Teacher Reference Center, I searched using the key terms *project-based learning* and *experiential learning* with the limiter of 2014 and newer. I found 7 articles and chose one case study of experiential learning. In Learn Tech Library, I used the key

search phrase of *secondary students' self-efficacy in blended learning* with the limiters of journal articles published since 2015. I found 68 articles and chose one that examined self-pacing for students in a math program. In Sage Journal, I searched using key term of *zone of proximal development* and limiters of 2015 and newer and journal articles. There were 34 results and I chose one article about cooperative learning. Then I searched again with the key terms of *zone of proximal development* and *interactivity* using the same limiters of 2015 and newer and journal articles. There were 17 results, and I chose one article about classroom roles and social constructivism in the classroom.

Conceptual Framework

The framework for this study was based on the concepts of constructivist learning principles, including (a) Vygotsky's ZPD, (b) Kolb's experiential instructional model, and (c) motivational theories. Vygotsky's (1978) ZPD, and Kolb's (2012) experiential learning theory provided me with a basis for understanding the learning principles in this blended educational program. The motivational theories of Keller (2010) and Schunk, Meece, and Pintrich (2014) helped to frame the students' perspective of their motivation to learn and engagement in the learning process.

Vygotsky's Zone of Proximal Development

Vygotsky was a Russian writer who lived during the social revolution of 1917(Jones, 2013). His philosophies about childhood development and learning became popular in the United States around 1980, many years after his death (Karpov, 2017). One of Vygotsky's most recognized theories is the ZPD. The ZPD refers to the space between a student's ability to learn a concept or complete a task without support and the

most complex or difficult content or task that the same student can master with the help of an informed facilitator or while collaborating with peers who are developmentally advanced (Clapper, 2015). ZPD is a method of scaffolding content to encourage learning to continue past the learner's individual ability. When employing ZPD in the classroom, the teacher becomes a coach or facilitator who, as a content expert, is available to support students as they learn (Clapper, 2015). The teacher and students develop a relationship based on mutual respect (Clapper, 2015).

The theory of sociocultural learning defines learning in the ZPD (Vygotsky, 1979) is applicable to blended and problem-based learning environments where student engage actively in authentic learning (Kolb, 2014). In the personalized learning classroom, teachers pose problems and work with students to plan projects to demonstrate possible solutions. These problems stretch students beyond what they can do independently but encourage interaction and collaboration. Students develop possible solutions to the problems and present these solutions to peers and often to adult representatives from the community. The purpose of this type of classroom is to encourage learning by allowing students to work within their ZPD with a knowledgeable other as a guide and with scaffolding.

Bandura's Concept of Self-Efficacy

Bandura's (1977) concept of self-efficacy is defined as the belief that an individual has in their ability to complete a goal. This concept was an integral part of understanding motivation to learn. Bandura stated,

> Cognitive events are induced and altered most readily by experiences of mastery arising from successful performance…An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes…The strength of people's convictions in their own effectiveness determines whether they will even try to cope with difficult situations. (p. 79)

Furthermore, Keller (2010) described the relationship between self-efficacy, goal choice, and student achievement and encouraged educators to design lessons that peak students' curiosity and link content relevance for students to encourage engagement in learning.

Experiential Learning

Dewey delivered a series of lectures regarding school reform beginning in April of 1899 (Gaber, 2010). According to Gaber (2010), Dewey's philosophy of education was in direct conflict with the status quo of lecture style teaching and students learning through rote memorization or repetitive drills. Dewey (2010) stated,

> It [school] has a chance to affiliate itself with life, to become the child's habitat, where he learns through directed living; instead of being only a place to learn lessons having an abstract and remote reference to some possible living to be done in the future. It gets a chance to be a miniature community, an embryonic society. (p. 10)

This type of experiential learning encourages engagement in lessons and provides a connection between the content to be learned and the students. Kolb (1984) stated that learning is "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming

experience" (p. 41). Kolb and Kolb (2005) stated, "Experiential education is a complex relational process that involves balancing attention to the learner and to the subject matter while also balancing reflection on the deep meaning of ideas with the skill of applying them" (p. 229).

Christensen (2003) studied two courses to compare academic outcomes based on the balance of face-to-face instruction and online instruction used in the course. The researcher found that one challenge in implementing blended learning is finding the balance that increases student success and encourages self-efficacy while addressing the need for efficiency for both the students and the teacher. Additionally, Russell (2015) found that problem-based learning classrooms integrating advanced technologies required advanced design processes for successful implementation, including inquiry-based learning and project-based learning.

Lin, Eylon, Rafferty, and Vitale (2015) studied the need for individuals to investigate and research solutions. They found that education should teach these skills to encourage both curiosity and the ability to tackle difficult problems. They also found that feedback that encouraged students to reflect on or consider their thought processes had more effect than feedback that was focused on the correct answer. Similarly, in a meta-analysis of inquiry-based learning models, Vaughan (2015) found that effective classrooms integrated online technologies in a blended classroom format that included specific design strategies incorporating authentic learning experiences. Vaughan's research identified that the use of blogs and online surveys for peer and self-reflection were effective at engaging the students. My research identified the perspectives of

learners who engaged in the use of blogs, online surveys, and self-reflection processes in their blended, project-based learning classrooms.

The integration of online problem-based learning environments is part of the movement to reform classrooms (Herlo, 2016). Dewey (1938) was a learning theorist who encouraged experiential learning and recommended authentic tasks and relevant material. Experiential learning theories are applicable to blended and project-based learning environments. Students who are in PBL environments are connecting with content in an authentic way while solving complex problems and developing presentations (Monteiro & Sharma, 2012). These experiences solving problems help students to develop perseverance and academic courage (Berger, 2013).

Literature Review Related to Key Concepts

Introduction

The purpose of this study was to investigate the experiences of middle school students as they participated in personalized learning that blends face-to-face instruction with technology lessons and problem-based project development where content was embedded in problem-based learning and the pace was flexible. The research context was a middle school in a suburban area of the southeastern United States.

21st Century Learning

Twenty-first century learning is the term used to describe the collaborative, cooperative nature of the workplace (Doolan & Guiza, 2015). Employers are looking for individuals who are able to work with peers to critically analyze situations and solve problems with little supervision or direction. Teaching these skills requires allowing

students time to practice in a controlled environment with minimal risks. Lin et al. (2015) studied the need for individuals to investigate and research solutions. They found that education should teach these skills to encourage both curiosity and the ability to tackle difficult problems. They also found that feedback that encouraged students to reflect or consider their thought processes had more effect than feedback that was focused on the correct answer. Edge, Reynolds, and O'Toole (2015) conducted a qualitative study analyzing the data from semi-structured interviews with 7 teachers regarding the changes in professional development programs. Researchers used Strauss and Corbin's grounded theory to code their data, and they found that developing a shared vision and sense of purpose along with providing coherent, effectively coordinated, and focused professional development greatly increased the likelihood of professional development practices being transferred to classroom practices.

In 2012, the George Lucas Foundation published A Parent's Guide to 21st Century Learning to help to explain the purpose of teaching 21st century skills, the process used in classroom, and the resources available to parents and students outside of the classroom. Lucas stated that academic success alone is not enough for students to be ready for college and careers; students need to be creative thinkers who are able to collaborate and communicate to solve complex problems. When students work in project-based learning environments, they are encouraged to collaborate and communicate in an authentic way (George Lucas Educational Foundation, 2012). Students must think creatively while still critically analyzing their designs and products. The results from these studies indicate the need for schools to develop a common vision for 21st century

learning, to communicate the vision with the stakeholders, to train educators to use instructional methods that help students to develop skills, and to encourage students to use critical thinking in problem solving.

Development of Advanced Cognitive Processes

Critical thinking skills are developed through experiences (Dewey, 1938). Project based learning programs attempt to provide these experiences in a controlled environment with minimal risks to encourage students to analyze problems, collaboratively strategize to find possible solutions and critically assess the possible outcomes (Lee & Breitenberg, 2010). Mehta and Fine (2015) described the infrastructure and purposes of two schools from a long-term ethnographic study of 30 high performing schools varying in size, format, style of pedagogy practiced, and socio-economic populations. They investigated data from observation of classes, in-depth interviews with teachers and other stakeholders, and focus group discussions. They concluded that some characteristics of successful schools are ensuring all stakeholders have a clear understanding of the direction of instruction, developing curriculum collaboratively among teachers and administrators, publicly displaying project or test score successes, maintaining symmetry in practices, cultivating a collective identity, and formulating consistent design elements. Mehta and Fine further recommend focusing on designing structures that improve teaching practices to produce students who are ready for postsecondary education or to go into the workforce. They also stated that successful schools had narrowed the gap between their mission statement and its implementation or instructional practice.

Farley-Ripple (2016) studied the relationship between the math courses taken by students and their standardized test scores. The sample included 785 students from a school district in urban/suburban setting in a mid-Atlantic state. Participation in advanced courses in 8th grade was most associated with either staying ahead or falling behind (not staying on the trajectory) but free and reduced lunch status was highly associated with downward mobility in math course participation and success. Farley-Ripple suggests that educational reform should look at the characteristics of schooling processes that promote or prevent students from success and that test scores may not be the best indicator of learning. In relationship to content acquisition and critical thinking skills, Russell (2015) states

> As online technologies provide more open access to an increasing and changing base of information, the knowledge workers of the future must be able to use information to solve problems, addresses issues, and create responses to authentic issues. The ability to do this is by learning how to infer, hypothesize, synthesize, relate, generalize, value, and evaluate information in a purposeful manner, not memorization for testing recall on a standardized test. (p. 254)

In a document analysis study, Dastanpour, Karamalian, and Sarmadi (2017) examined the educational goals for the learner, the content of the curriculum, and the teaching strategies used in the e-learning system. They stated that the primary purpose of learning is "to develop problem-solving skills, argument skills, critical thinking skills and self-paced learning…to enhance the [students'] ability to think independently" (p. 6). To achieve these goals, content needed to be personalized, problem based, and learner

centered while the instructional methods altered the role of the teacher from presenter of knowledge to facilitator and e-mediator. Testing strategies also shifted from standardized high stakes tests to formative assessments that were often in the form of self or peer evaluation. Providing educational opportunities for students to build critical thinking skills requires the flexibility to adapt the curriculum content taught, the instructional methods implemented, and the type of assessment used to evaluate learning. These studies indicate that schools that had a clear mission or vision statement that was properly implemented and that provided support for students negatively impacted by poverty had the best rate of student success.

Challenges for Innovation in Education

Change is often met with resistance, and many challenges arise when implementing reform in education. Principals and administrators, teachers, parents, and students all have ideas about how schools should be operated. Introducing new pedagogies, new technology programs, and new formats can cause opposition even when the current methods are not producing student success. Beers (2006) stated, “The biggest problem in changing instructional practice is that certain routines are too entrenched” (p. 7). Pollock, Murakami, and Swapp (2015) conducted a dialogic inquiry exploring the roles of administrators in Canada and the United States. The sample was comprised of 14 school administrators who attended an international conference held in Boston in June 2011. The comparison of the interviews led to common themes including changing financial structures, increasing student diversity, increasing accountability that led to changing expectations for student success, changes in the power of the principal to make

decisions, and changing expectations for school administrators. With so many responsibilities already, many administrators hesitate to embrace major reform initiatives due to a lack of time and resources.

Similarly, Lašáková, Bajzíková, and Dedze (2017) conducted a case study to identify barriers and drivers of innovation in higher education institutes. Findings indicated that there are many factors that limit innovation efforts. The researchers classified the barriers into three categories; external, internal, and individual. In the external category they listed inflexibility of administration due to funding concerns and mistrust between higher education institutes and businesses. In the internal category they listed problems with management of departments and strict human resource guidelines that limited innovation due to accountability measures. Additionally, at the individual level, untrained teachers and students who were indifferent or disinterested made innovation efforts unsuccessful. These studies indicate that some of the challenges to innovation in education include overscheduling administrators with tasks, micromanaging or restricting their ability to adjust or modify policies, and using funding to control what administrators are able to do. Changes in the design and politics of educational policy are needed to allow administrators and teachers the flexibility to develop innovative education designs.

Teacher Attitudes and Beliefs

Gaining the buy-in of teachers and other stakeholders is crucial to the success of any new program. Boone (2015) presented a literature review for use as a decision-making tool. She states that some of the challenges educators currently face include

limited funds, poor student engagement, and a need for increased focus on communication skills. Her recommendations include preparing for change, transformational change, and leading the change. Boone states that an administrator must develop the support and cooperation from many stakeholders by providing a shared understanding of the purpose and benefits of the change in order for the shift from a traditional format to a blended format to be successful. Boone further recommends that administrators seek out consultants or specialists to assist with transformational change.

Kangas, Siklander, Randolph, and Ruokamo (2017) conducted a mixed methods study comparing the teachers' enthusiasm and adaptability to the Playful Learning Environment, a new program implemented in a few test classrooms. The researchers collected student satisfaction surveys, teacher interviews and teacher blog diaries. The findings from this study indicated that the teacher who was willing to fully commit to the new design and who trusted her students to participate had students who felt very satisfied in their learning. Furthermore, Kangas et al. state that for change in schools to stick, teachers' engagement, both pedagogically and emotionally, is crucial.

Woulfin, (2015) conducted a 13-month qualitative case study aligned to framing theory and comprised of observations, interviews and documents from three coaches and 12 teachers from a district in a medium sized urban school district in California. Woulfin kept detailed logs from observation and used semi-structured interviews to further explain coaches' techniques and teachers' understanding of the programs. Woulfin found that when coaches invoked experts and when they accepted incremental change teachers

could choose what pedagogical practices matched their own teaching styles increasing their buy in.

Emo (2015) conducted an explanatory case study completing and transcribing interviews from 30 teachers and identifying whether remarks fit into an explanation from the literature review, or from another teacher, or if they were unique and required a new category. Findings indicate that teachers value autonomy and when they can exercise professional decision-making – when to implement change, what professional development to attend, and whose example or advice to follow - they experience job satisfaction and self-efficacy. Similarly, Biase (2015), in a case study of a small island community's experience in implementing learner centered pedagogy, found that although teachers were hesitant to make major changes, when they could see the changes modeled and ask questions clarifying purpose and process, they moved from the role of passive observers to that of active participants. Biase noted that the changes were gradual and evolved based on the teacher's readiness to accept additional responsibilities in planning pedagogical interventions. The findings in these studies indicate that when teachers are well informed about the purpose and process of reform, and when their input is valued, they are willing to try new instructional methods. Providing administrative direction, continuing to communicate expectations, and giving training and support encourages teachers to persist with new strategies.

Integration of Technology

Integrating new technology programs can be challenging and requires preparation and training. Carlson and Patterson (2015) conducted a qualitative case study using open-

ended electronic surveys and left-and-right-hand column case methods to examine the implementation of a one-to-one laptop program at a Catholic school. Many of the department chairs and administrators in the school believed the program was contrary to the purpose or mission of the school or funds should have been spent elsewhere. However, most of the teachers who participated in the classes with the laptops felt that they were necessary tools to prepare students for college and for the workplace. Similarly, Emo (2015) found that teachers who independently implemented innovations involving technology without directive to do so noted a correlation to student engagement.

Robinson and Sebba (2010) conducted a case study to examine the use of technology in personalized learning. They state

> the degree of access to digital technologies and the support provided in schools to encourage the use of technologies impacted greatly on the extent to which learners were given opportunities to use such technologies to lead and influence their learning. (774)

In a study of a personalized learning school that had recently implemented blended learning and a one-to-one laptop program, Headden (2013) stated that students were able to use technology to learn new content and to self-assess their learning. Headden indicated that the academic achievement results are mixed, but that students liked the ability to use the computers in class. Additionally, the teachers used the data collected to adapt the program design to fit the students' preferences and to employ the high-quality content delivery needed to improve test scores. According to Headden,

"Constant innovation virtually guarantees mistakes…Some also say that students have to be particularly motivated to succeed with blended learning" (p. 20). Francis (2017) stated

> Until the current status of technology integration and perception of its usefulness has been changed, the disconnect between student and teacher can only grow larger. A paradigm shift regarding appropriate implementation of technology in education is necessary to ensure a successful 21st century classroom and to set up students for success in their future careers.

These studies indicate that the use of technology in the classroom encourages student engagement and efficacy and that the technology experience benefits students in the workplace after graduation. Integrating technology in a blended learning school requires training, practice, adaptation and evaluation of progress. Teachers and students need to communicate about the programs used and evaluate their effectiveness and administration needs to provide training and support for teachers during the roll out and throughout the process.

Reform Issues

Implementing a reform program like a personalized learning program designed to allow each student to choose the content he or she wants to study, the method of learning that content, and the product or presentation to demonstrate that learning is a daunting task. The reasons for educational reform are as varied as the recommended innovations including improving school climate and responding to bullying improving student achievement on standardized tests while teaching the skills students will need for the workplace of tomorrow, meeting new expectations for educators, and providing excellent

education on a budget (Chou, Kwee, Lees, Firth, Florence, Harms, & ... Wilson, 2015; Pollock, Murakami, & Swapp, 2015).

Carson and Patterson (2015) investigated the implementation of a one-to-one laptop initiative in a qualitative case study in an urban Catholic high school. They collected data from surveys, focus groups, emails, and other documents and coded and analyzed the data. They found that teachers' beliefs about pedagogy and best practices influenced their implementation of any new instructional practice. For educational change to truly happen, teachers must see the purpose of and find value in the changes to improve student learning or classroom environment. On the other hand, Chou et al. (2015) conducted a Youth Participatory Action Research in which they examined the students' perspective related to the characteristics of alternative and mainstream programs that encouraged or prevented them from dropping out of school. A graduate student, acting as the lead researcher, and a group of at-risk students who became researchers through training conducted this study in a rural community in Canada. The students recruited and interviewed their peers and worked with the lead researcher to analyze and disseminate the data. Researchers were careful to address both rigor and credibility and determined that the study meets the validity checks proposed by Butterfield et al. (2005, 2009).

The students found that to prevent drop-outs school administrators needed to build a caring staff compiled of teachers who were aware of and helped to prevent or stop bullying, who were flexible in relationship to learning pace, who provided choice of content based on learning style, and who encouraged and supported students both

academically and socially while disciplining consistently but fairly. Personalized learning attempts to address these concerns.

Simmons, Graham and Thomas (2015) conducted a mixed methods study that included the focus group data from over 600 students and teachers and on-line surveys with almost 10,000 students in Catholic schools in Australia. The team of researchers wanted to understand student wellbeing as related to educational policy and practices in the schools. They found that the students had valuable insight into the workings of the schools and had suggestions for improving them. Simmons et al. identified four themes; improving pedagogy, changing the school environment, deepening relationships, and providing students opportunity to voice their concerns. Tyack and Cuban (1995) state that the purpose of reform is to increase the opportunity for teachers and students to have meaningful interactions related to building both content knowledge and character development, but that legislators and policymakers have little success when teachers are not included in designing the reform process.

Similarly, Martin (2015) states,

> The issue becomes whether we do in fact want public schools to be reformed by allowing innovation, experimentation, and a forum for multiple educational visions…or whether, instead, reform comes from the central imposition of a single educational vision, with its own benchmarks and measurement systems (p. 11).

Many of the challenges for reform in public school settings can be addresses with open communication and shared vision. This literature suggests that teacher buy-in and

attitude are important as is valuing the opinions and ideas of the students themselves. When all stakeholders understand the purpose for changes and believe that the reform will result in increasing student success, their resistance diminishes.

Constructivist Learning Principles

According to Topolovčan and Matijević, "Constructivist learning can be defined as a self-regulated, non-linear, and interpretive process of building knowledge, supported by interaction with one's surroundings" (2017, p. 52). Furthermore, there are certain learning strategies that can address all of the aspects of learning among them, inquiry learning, project or problem-based learning, cooperative learning, and learning by doing. Similarly, Topolovčan and Matijević state that the use of technology in the classroom allows students to work both individually and cooperatively to solve real world problems by conducting research and applying their findings to relevant situations.

Stroet, Opdenakker, and Minnaert (2016) conducted a longitudinal study to examine the motivational levels of students from three different types of schools. Students completed questionnaires on five different occasions throughout one school year. Results show that students who attended traditional schools showed the highest levels of motivation followed by students who attended prototypical constructivist schools. Students who attended schools that attempted to combine traditional philosophies with constructivist philosophies showed the lowest levels of motivation. These results seem to indicate that schools need to have a definite mission and philosophy of education to motivate and engage students. Furthermore, when class time is spent actively engaged with content student achievement is improved.

Engagement

Engagement is the focused attention and participation in a task or activity. According to Schunk et al. (2014) "students are more likely to be engaged in tasks that take advantage of their backgrounds, interests, and experiences" (p. 344). One way to increase student engagement is by personalizing their education using online and project basked learning.

Curtis and Werth (2015) investigated parents' perspective of an online high school where students from every county in the state attended with most enrolled full time. They used semi structured phone interviews with willing participants who responded to an electronic notice to begin the process, then scheduled two semi-structured face-to-face or online interviews. Their findings show that distance learning can be successful when there is open communication and explanation of the tools and methods of instruction while providing flexibility or individualization in content and pace. The parents also mentioned that much of the responsibility for learning is placed on the students requiring them to self-regulate pace and engagement, but that the parent also needs to be supportive and provide encouragement. One possible bias was that this study was only from the perspective of the parents and lacks any input from the students.

In a study of flipped classroom use in a secondary mathematics classroom, Clark (2015) found that students were more engaged, more involved in the flipped model of instruction when compared to the traditional delivery approach. Students in the flipped classroom experienced quality instruction that was student-centered and student-

focused. This literature suggests that technology-based programs that personalize learning based on prior experience, level of mastery, and personal interest may increase engagement in the learning process.

Collaboration

Clapper (2015) explains that although competition is common in society, educational environments benefit from being cooperative rather than competitive. The author describes a natural inclination to collaborate and compare experiences or understandings to help make sense of new material or complex situations. Allowing these conversations can encourage students to push past their individual ability to tackle more difficult concepts and experience success with assistance from peers or from the teacher acting as a facilitator. Wass and Golding (2014) used conceptual analysis to sharpen the ZPD.

Wass and Golding (2014) found that the most significant learning gains occurred when teachers assigned the most difficult tasks, tasks that students could not do alone but could do with some support from the teacher. Similarly, Walker and Shore (2015) describe Vygotsky's theory related to language development and their ability to acquire conceptual knowledge. They state, "Children therefore need to be challenged with learning material that they would most likely be unable to complete on their own, but, with help, could learn successfully" (p. 2). Park et al. (2015) found that the role of the teacher has shifted some in online discussions. The teacher acted more as a cheerleader infusing the discussion with enthusiasm for the content. In these graduate classes, students took on the responsibilities of some of the usual teacher roles when he/she was

not present in the discussion group. Additionally, Wang (2013) found that "coaching in learning was a complex process in which teachers and students moved along different modes of coaching relationships. Noticeable increases in students' independence, learning relationships, confidence, and learning agency were documented" (p. 35). Wang did note that the results indicated that students learning power dimensions were not influenced in the same way.

Boluk and Carnicelli (2015) conducted a reflexive exploration of two educational groups to examine their effectiveness in fostering community activism. They used current social issues to provide authentic context in which students worked together developing problem solving strategies while improving the skills of empathy, leadership, and responsibility. Boluk and Carnicelli stated that the experiences that students had improved their connection to the university and to the community. Problem based learning allows student to participate in experiential learning in a controlled environment with minimal risk.

Henrie, Bodily, Manwaring, and Graham (2015) research found that precise instructions and relevant activities mattered more to students than the mode of delivery and noted that data regarding the use of the technology tools seemed beneficial in predicting student success. Lin et al. (2015) studied the need for individuals to investigate and research solutions. They found that education should teach these skills to encourage both curiosity and the ability to tackle difficult problems. They also found that feedback that encouraged students to reflect or consider their thought processes had more effect than feedback that was focused on the correct answer. Cooperative and collaborative

learning environments provide students with an opportunity to gain understanding and perspective about the topic of study while making connections with peers and instructors. Feedback from peers and teachers can help students to develop metacognition and self-evaluation skills.

Inquiry Learning

According to Cattaneo (2017), inquiry-based learning encourages curiosity and is learner centered. Cattaneo further compares inquiry learning to problem-based learning and constructivism stating that inquiry learning is focused on the process of investigation and usually closely follows the scientific method. Encouraging students to pose questions of their own and to then research to find answers helps to develop critical thinking and creativity.

Walker and Shore (2015) investigated role diversification in inquiry learning programs. They found that both students and teachers undertake multiple roles simultaneously in inquiry and that the idea of role reversal is too simplified, but that the interactions become fluid with teachers and students shifting from one role to another frequently. Walker and Shore suggest a new framework, based on many role theories, that combines exploration engagement, stabilization, and diversification to support inquiry learning. Similarly, Leu, Templeton, and Yoon (2016) describe the use of inquiry with very young students. In a preschool classroom, the teacher recognized a students' fear of the monster in a movie and decided to challenge the traditional role that antagonists play in films. She facilitated "the children's assent into exploring and co-constructing new narratives" (Leu et al., 2016, p. 55). In this case the inquiry was co

constructed and was a collaborative effort. Students learned that different and even ugly by traditional standards does not equal evil. Vaughan's (2015) meta-analysis of inquiry-based learning models found that effective classrooms were ones that integrate online technologies in a blended classroom that included specific design strategies that incorporated authentic learning experiences. His research identified the use of blogs and online surveys for peer and self-reflection were effective at engaging the students. Inquiry learning begins with curiosity and develops to a question that can be researched through literature investigation or experimentation. Students are able to choose not only the topic of investigation, but the method of research and the final product or presentation.

Project-Based Learning

According to Cattaneo (2017), "Project-based learning is an active learning style focused primarily on a specific student output: a project" (p. 147). Students develop a product as a result of researching to solve a specific problem that is intrinsically motivating due to relevance to their community. Russell (2015) found that problem-based learning classrooms integrating advanced technologies required advanced design processes for successful implementation including inquiry-based learning and problem-based learning.

Kokotsaki, Menzies, and Wiggins (2016) in a review of current literature related to project-based learning found 6 themes; time management, getting started, establishing a culture that stresses student self-management, managing student groups, working with others outside the classroom, getting the most out of technological resources.

Furthermore, Mosier, Bradley-Levine, and Perkins (2016) used convenience sampling to recruit students to complete on-line surveys related to their experience with the implementation of project-based learning and New Tech School. Students' responses indicate that the trust and respect that they felt helped them to be engaged and to increase their ownership of their education. They believed that the PBL approach helped them to learn 21st century skills and that communicating and collaborating with community members helped them to feel that their voice was valued.

PBL offers opportunities for student driven investigation which often increases motivation and engagement in the learning process. Students usually work collaboratively encouraging them to develop communication and cooperation skills. Creativity and critical thinking skills are required to complete the projects and students reflect on their thought processes and actions promoting metacognition.

Blended Learning Classrooms

According to Harris (2015) new technologies and increased need for students to collaborate with peers digitally in educational settings suggests that blended and specifically flipped learning is not only appropriate but could transform pedagogy and change the way that students engage in the learning process. In a review of the current literature related to K12 blended and online learning, Greene and Hale (2017) found that there is still not a clear understanding of the characteristics of successful programs or the opportunities afforded by adopting blended practices. They noted a need for research to help to guide implementation of blended and online learning. Additionally, they called for professional development focused on the pedagogy required to facilitate online and

blended learning. Similarly, Brown (2016) reviewed empirical literature and found instructors needed training, time, and reliable technology to implement blended learning. Brown also noted that positive feedback from students increased the likelihood that instructors would continue to make the effort to blend instruction.

Barnett (2016) conducted a study of at-risk adolescents to examine their perception of care provided by their instructors. After conducting in-depth interviews with seven students, Barnett found that students appreciate the support and encouragement provided by teachers in both face to face settings and in online classes. Barnett also states that educational reform follows the whims of the administration and policy makers without listening to the students and that students have valuable insight and worthwhile suggestions.

Kintu, Zhu, and Kagambe (2017) conducted a quantitative study to evaluate the student characteristics and program design features to determine what predicts student success and satisfaction in a blended learning environment. Researchers used online student surveys to identify learning characteristics and end of semester scores to determine academic success and found that students with high self-regulation skills had high motivation and were very satisfied with the blended learning program. Kintu et al. did note that students in the program were skilled at computer use and were accustomed to juggling school responsibilities with family life and jobs.

Lai, Lam, and Lim (2016) conducted a collective case study to compare three cases of BL implementation at a University in Hong Kong. Researchers completed interviews and coded results to identify themes. Student interviews and course outlines

also provided comparison points. Lai et al. found that each of the two different styles of implementing BL had potential for student growth. Consolidation, providing practice to allow students to solidify their understanding, and extension, to provide flexibility in the method of learning and in the pace of completion can be used in the same course or may be implemented separately.

Waldrip et al. (2014) described the development and validation of a questionnaire used to analyze students' self-evaluations, their assessment of the learning environment, and their success in the program. After field-testing the survey, the twelve researchers in this study found the tool was valid and showed satisfactory reliability. Boone (2015) examined blended learning strategies. Boone found that blended learning could address some of the challenges educators currently face including limited funds, poor student engagement, and a need for increased focus on communication skills. Boone further recommended that administrators allow all stakeholders to participate in a debriefing to reflect and discuss their experiences during the transition from a traditional model to a blended learning model.

Blended learning can address many of the current challenges in education including classroom space, financial cuts, and the need to help students to develop 21st century skills. The most successful programs have trained teachers, use reliable technology platforms, and include open communication between the students and the teacher. Students need to become self-regulating and intrinsically motivated as blended learning does put the responsibility to learn on the students. Although blended learning

has been used at the university level for decades, use in secondary education and especially in middle grades is a fairly new idea.

Blended Learning and Efficacy

According to Schunk et al. (2014) "students who feel self-efficacious about learning and performing well seek challenges, expend effort to learn, and persist at difficult tasks" (p. 6). Blended learning provides opportunities for students to self-pace and to revisit material as frequently as necessary to build their confidence and promote their success. Rumney, Buttress, and Kuksa (2016) found that when working with young learners, using a variety of activities that engaged their attention and encouraged confidence which in turn had a positive influence on their literacy achievement. Henrie et al. (2015) found that precise instructions and relevant activities mattered more to students than the mode of delivery and noted that data regarding the extent of the students' use of the technology tools seemed beneficial in predicting student success.

Similarly, Jaggers (2016) investigated the use of online course design features in 23 college courses. He found that the design of the platform did not have as much impact on the student success academically as the quality of interpersonal interactions. Boone (2015) examined blended learning strategies. Boone found that blended learning could address some of the challenges educators currently face including limited funds, poor student engagement, and a need for increased focus on communication skills. Boone further recommended that administrators allow all stakeholders to participate in a debriefing to reflect and discuss their experiences during the transition from a traditional model to a blended learning model. Waldrip et al. (2014) described the development and

validation of a questionnaire used to analyze students' self-evaluations, their assessment of the learning environment, and their success in the program. After field-testing the survey, the 12 researchers in this study found the tool was valid and showed satisfactory reliability.

Interactivity and online interfaces encourage communication and collaboration. Students build knowledge by sharing ideas and offering feedback to each other. This collaboration increases student engagement and helps to build self-confidence. Students develop self-efficacy when they experience small successes. These successes lead to increased confidence encouraging students to take on new challenges and take measured risks. Motivation theories and integration of technology platforms that allow student interaction with peers and with facilitators are applicable to blended and project-based learning environments. Students who are in PBL environments are communicating and collaborating while solving complex problems and developing presentations.

Blended Learning Principles

Blended learning combines online lessons with time in a classroom to provide a combination of lecture and application activities. There are different methods of blending learning. One method is flipped instruction, where students watch video lessons prior to class and do what as homework in class with the teacher. This format allows students to ask questions and work on deeper connections with the content during class time. Auster (2016) conducted an exploratory study using a combination of surveys administered by the college to all students and surveys the author created to ask more specific questions related to the use of screen casts in a particular course.

Although this study did not evaluate the impact of the screencasts on the students' academic performance, it did ask for student perception of the program and how they felt about the blended course presentation. Auster (2016) reported that almost 90% of the students questioned viewed the screen casts and that 84% used at least some of the screencasts to study before the exams. Having the content available to review outside of class time encouraged students to review the material until they understood. In addition to positive responses to effectiveness and impact on satisfaction, 98% of the students surveyed encouraged the teacher continue to use screencasts the next time the course was taught.

Araujo, Otten, and Birisci (2017) conducted a case study evaluating two teachers' experiences with flipped instruction, a type of blended learning, in mathematics classes. Each teacher completed both open ended and Likert-type surveys prior to their interviews. Both teachers stated that they started flipping their instruction after hearing about the benefits from a colleague. Teachers identified several benefits including an increase in student to student communication and collaboration, an opportunity to develop deeper understanding of the content, and an increase in student engagement and motivation. The teachers stated that a significant amount of time was necessary to develop the video lessons and at home content and that the tasks in class needed to be collaborative in nature to encourage interaction and discussion but that sometimes the class work did not meet these criteria due to lack of planning for the in-class time.

Whiteside, Dikkers and Lewis (2016) conducted a single-case study examining a blended learning program in a secondary school in the Midwestern United States.

Researchers used a combination of survey, interview, focus group responses and observation to identify themes. One of the interesting components of this program was the use of flex time, a time built in to the schedule for students to complete course work on their own, to schedule tutoring time with teachers, or to complete projects or group assignments. Stakeholders state that this time encouraged students to become self-regulating and autonomous. Additionally, stakeholders report that blended learning encouraged students to build relationships with teachers and peers and prepared for the responsibilities and independence of college.

Students surveyed about blended learning like the availability of content and the opportunity to revisit lessons as needed. They also appreciated the flexibility of the platform and the support of the teacher in providing feedback and assistance with the online content. Teachers state that using flipped classrooms in blended learning required a lot of time to prepare both the online portion and the classroom activities. They further stated that the classroom activities needed to be active learning that encouraged collaboration and discussion. When blended learning uses the online platforms to introduce new content through video lessons or research guides, the class time is available for application of content and lessons that promote deeper understanding.

Face-to-Face Learning

One of the benefits to blended learning is that the class time can be used for hands on activities and collaborative projects. During the face-to-face time, the teacher acts as a facilitator or adviser while students guide their own learning. Futch, deNoyelles, Thompson, and Howard (2016) conducted a case study to explore challenges and

solutions to improve student success in blended learning college courses. Researchers used grounded theory and analyzed interview data to identify themes.

One theme that stood out was the concept of comfort, promoted by the concern of the teacher and the process of facilitation as she desired that every student succeed. The other themes, organization, communication, and support were all secondary to the primary concern for the wellbeing of the student throughout the learning process. In a study of blended learning at the university level, Baepler, Walker, and Driessen (2014) found that changing the focus of the classroom time from lecture to active participatory activities improved student perception of their learning environment and that student achievement was equal or superior to traditional teaching methods when evaluated using standardized tests.

The results of these studies suggest that the teacher was still an important factor in blended learning and that his or her support was essential to the success of the student. Furthermore, the teacher's attention to planning engaging participatory activities helps to encourage students' self-efficacy and satisfaction with the learning environment. Although the academic results did not show significant gains, they did not show losses either and the students' satisfaction was improved.

Personalized Blended Learning

Personalized learning refers to the idea of allowing students to choose content studied, to self-pace, and to demonstrate mastery of content in an authentic way. Beers (2006) describes differentiated instruction as "adjusting the process, content, or product to meet the needs of each student" (p. 59). Personalized learning begins with the student's

interests in mind and then uses differentiated instruction to frame the curriculum, instruction and assessment.

Albano, Miranda, and Pierri (2015) conducted a program evaluation of the integration of intelligent web teacher, a specific plug-in; open ended tasks were used to complete and validate the module. Researchers found that although many students participated in the online discussion at the beginning, several dropped out as the discussion went deeper. They also noted that students presented the facts as though they were carrying on a face-to-face conversation and some meaning was lost in the process. Some students also got caught up in explaining their calculations and missed the point of the question entirely.

Balentyne (2016) conducted a quantitative study investigating the relationship between self-paced blended learning and achievement growth in mathematics. The study included survey and test data from 26 gifted middle school students. Findings indicate that students' attitudes toward math improved in the self-paced program, but that their achievement was not significantly different than when in a traditional class although the range was broader indicating that self-paced learning may be better for some students than for others.

The achievement results of personalized learning are still mixed based on the implementation, the students' buy-in, the teachers' training, and many other factors. However, the effort to allow students more agency in their learning has been linked to increased student satisfaction with their learning. West-Burnham and Coates (2005) state,

> At no other time in a person's life is the individual subordinated to the generic as is the norm in schools; in fact choice, diversity, and personal freedom are seen as the fundamental criteria for a civilized and meaningful life (p. 9).

Summary and Conclusions

The major themes explored in this literature review include 21st century learning, advanced cognitive processes, the challenges for innovation in education, reform issues, constructivist learning principles, inquiry and problem-based learning, blended learning, and personalized learning. Stakeholders agree that preparing students for success in the workplace requires teaching students how to communicate, collaborate, think critically, and demonstrate creativity. Findings of the studies show that students need clear expectations and a defined vision to be successful. Some of these studies examined motivation or engagement related to academic performance and some asked teachers or parents about new programs, but few asked students to self-evaluate their motivation and engagement in a personalized learning environment. The studies that involved student participation found that students had valuable ideas and could provide useful input to improve their learning environments.

My study extends the knowledge of personalized learning by addressing the gap of knowledge about students' perspectives of the program related to their motivation and engagement in the learning process. Using a combination of open-ended questionnaire data and open ended semi-structured interviews to explore student experiences in a generic qualitative study provided valuable insight that may improve teachers' ability to personalize education. In Chapter 3, I will explain the research design, the rationale for

choosing qualitative research, and the role of the researcher. I will clarify the methodology of the study including participant selection and data collection tools. I will also describe how the design of the study addresses possible areas of trustworthiness.

Chapter 3: Research Methodology

Introduction

This study was a generic qualitative study to understand the experiences of middle school learners in response to a blended problem-based learning environment (see Percy et al., 2015). In this chapter, I will explain the processes used to recruit participants including all permissions required by the county school board and by IRB. I will describe the plan to collect data, and analyze the data as well as the attention paid to potential ethical concerns.

Research Design and Rationale

In this study, I used the generic qualitative design to answer questions about the experiences of students enrolled in the online, project-based school. The interviews I held with students were semi structured with open ended questions. The questionnaires I gave them were made up of open-ended, multiple choice, and scaled questions; the students completed them online through Qualtrics. I chose to use a generic qualitative study to allow the students to describe their experiences through the interview process. Including information from self-evaluative questionnaires related to the students' motivation and engagement in the learning process provided me with a lens through which to frame the experiences. According to Percy et al. (2015), a generic qualitative study is appropriate when the researcher has knowledge or understanding about a topic and wants to examine the participants' perspective. I had extensive knowledge of the working model currently in place and the mission and vision of the administration of the school, making a generic qualitative study appropriate.

Role of the Researcher

At the time of the study, I was a seventh grade teacher in the personalized learning school where the study was conducted; however, the recruitment process ensured that participants did not include any current or former students of mine. All student names were replaced with pseudonyms and the school and district name were changed to protect the privacy of all participants. I conducted semi structured interviews with 8 students and analyzed the survey and questionnaire responses to identify themes. Some of the participants were aware of my role as a teacher in the school. Students placed recruitment forms including student assent forms and parent consent forms in an envelope and submitted them to the office or directly to me.

Although I was a teacher at the school where the study was conducted, there was no conflict of interest because in the study I was examining the students' experiences and perspectives of the instructional methods and not evaluating the success of the teaching or the curriculum. I gained no financial profit or personal advantage from this study. To reduce researcher bias, I conducted reflexive journaling and kept memos throughout the interview process.

Methodology

The methodology section will include information about participant selection, the interview protocol and questionnaire instruments to be used, and the process used to validate the instruments. I will explain how students were selected to participate in the study and the documentation of consents. I will justify the instruments used by describing

how the interview protocol and questionnaire were developed. Additionally, I will explain the plan for data collection and analysis.

Participant Selection Logic

The population of interest for this study was middle school students who were enrolled at the problem-based, online learning site school. I used nonprobability convenience sampling strategy to secure a sample for the study. This sampling strategy was most appropriate for the study because convenience sampling removes the need to have a list of all students enrolled in the school, and asking for volunteers ensures that students were comfortable in sharing their experiences. Additionally, I had significant knowledge about and a presence in the site school, and participants needed to be chosen from students who had not had me as a teacher or advisor to avoid bias.

I determined the sample by volunteers who responded to a written invitation to participate. Student participants were required to be enrolled at the personalized learning school. A signed consent form (by the parent) and assent form (by the student) were required to be returned to me. Enrollment records verified students' eligibility to participate in the study. Participant interest forms, including an informational letter and an informed consent form, were distributed to students in the homeroom classes of one sixth grade teacher and one eighth grade teacher. Responses were placed in an envelope and turned in to the office or directly to me. I chose participants from the responses who did not previously and at the time of the study did not have me as a teacher or advisor. I conducted 8 interviews to include students from different grades and classes and to allow for students from diverse backgrounds to share their experiences.

In this generic qualitative study, data saturation was reached when I identified no new data, themes, or coding in data analysis. There were multiple forms of data collected in this study providing a rich (i.e., quality) and thick (i.e., quantity) of data to ensure saturation (see Guest, Bunce, & Johnson, 2006).

Instrumentation

The data collection instruments included an interview protocol delineating 10 open-ended questions and follow-up prompts to clarify, if necessary as well as a questionnaire with 10 open-ended questions related to students' perception of their motivation to learn and their engagement in the learning process. I developed the questionnaire and it provided me with a lens through which to frame the student experiences. I also developed the interview protocol and kept audio recordings of the interviews. Digital copies of the motivation and engagement questionnaire were downloaded to a password-protected personal computer. The basis for the development of the interview and questionnaire questions was the conceptual framework including Vygotsky's ZPD, Bandura's self-efficacy theory, and Dewey's experiential learning.

Interview Protocol

To write the questions for the interview, I went through Chapter 2 and identified the different topics related to student experiences in personalized learning. I color coded the statements using gray for technology-related ideas, green for problem solving, aqua for student reflections, yellow for personalized learning, blue for motivation and engagement, red for teacher implementation, and purple for interactions or relationships. Then I used those color codes to develop statements that summed up the big ideas from

each category. I looked at the conceptual framework and formulated my questions making sure that I included the big ideas found in the literature review. The interview questions were related to personal beliefs, classroom interactions, the instructional model, and the personalization of education:

1. How do you feel about the learning pathways?
2. What do you think about the Career Pathway houses (PBL)?
3. What do you like best about working online?
4. How do you feel about your interactions with the teacher?
5. How would you describe your educational interactions with your peers?
6. How do you use Google Classroom?
7. How does the collaboration in Google Classroom work?
8. How would you describe your motivation to learn?
9. How would you describe your experiences interacting in online problem-based learning?
10. What else you would like me to know?

Questionnaire

I developed the questionnaire and used it to measure student motivation and engagement in the learning processes. In the 10 open-ended and selected response questions, I asked students to self-evaluate. Some of the questions were related to their engagement in each of the settings within the learning environment, the classroom, and the Makerspace lab, while others addressed student motivation to learn. Other questions were focused on the students' preparation for class and how their tasks related to future goals.

The questions were developed based on my prior observations and experiences in the site school and addressed student motivation to learn and engagement in the learning process:

1. How often do you take notes or journal during class time? (engagement)
2. What type of lessons interest you in class? (motivation)
3. Describe how you use technology on your Chromebook. (engagement)
4. What computer programs do you like the best? Why? (motivation)
5. When you are in makerspace, how would you describe your attention to the tasks? (engagement)
6. How do the tasks in makerspace relate to your career pathways? (motivation)
7. How do the tasks in makerspace relate to future college or career goals? (motivation)
8. What makes you want to learn (i.e., what motivates you)? (motivation)
9. How often do you find yourself off task? (engagement)
10. Would you say you are a good student? Why or why not? (motivation and engagement)
11. What are some of the ways you prepare for class? For lab?

Content Validity

I established the validity of the instruments by requesting a preview of the questions by the project manager who oversees the personalized program at Grassy Meadows and the approval of the dissertation committee including the content specialist and the methodologist. The committee reviewed the interview protocol and the survey to ensure that the questions aligned with the research question, that they were written in

clear language, and that the questions were likely to provide relevant data. Had the committee determined that the questions needed revision, I would have made the needed changes prior to conducting interviews or opening surveys. The purpose of the study was to examine student experiences related to personalized learning taking into consideration their perception of their motivation to learn and engagement in the learning process; therefore, the interview questions that asked students to explain their experiences and the questionnaire questions that asked students to self-evaluate their motivation and engagement provided sufficient data to answer the research questions.

Procedures for Recruitment, Participation, and Data Collection

In the following subsections, I will describe the recruitment of participants, including the permissions required to conduct research in schools. I will explain the processes of collecting and analyzing data. I will also outline the precautions taken to address issues of trustworthiness and ethical concerns.

Context

The context for this study was a public middle school, Grassy Meadows Middle School (a pseudonym), located in a suburban-to-rural area in the southeastern United States. At the time of the study, the school was implementing a personalized learning approach that combined problem-based learning with career pathways that were flexible in curriculum content and pace of completion. The school was awarded a grant from the Bill Gates Foundation and had been working with the Buck Institute to develop problem-based learning tasks.

Although there had been significant professional development and training, each teacher and their team decided how they implemented the program. Students still took pretests and posttests for each unit to prepare for standardized tests, but class work and homework activities were tailored to the students' depth of prior knowledge. Teachers used a combination of technology-based lessons, hands-on learning activities, and traditional instruction to provide students with content information. Students often worked with a partner or in a small group to encourage collaboration and discussion. The goal was to have each student master content and be able to apply their understanding to complex interdisciplinary problems. The school's vision was to personalize students' learning, supporting them through flexible pacing while offering choices that aligned to student strengths and related to future career goals and interests.

Recruitment

I took the following steps to recruit participants for this study:

1. The first step in the recruitment process was to receive permission from Institutional Review Board (IRB) and from the district and school principal to implement research.
2. Two teachers handed out an informational packet to all students in their classrooms. The packet included:
    a. A recruitment flyer,
    b. A parent consent form, and
    c. A student assent form.

3. Students took the packet home and talked about it with their parent or guardian.
4. Students brought signed consent and assent forms to the school office or directly to me.
5. The office kept the packets for me to pick up.
6. After all forms were collected, I de-identified participant information using a master list.
7. Then, I was be ready to conduct interviews and postquestionnaires on Qualtrics.

If initial recruitment had not yielded 8-10 students, another homeroom class would have been given interest packets and the process would be repeated.

Site Permissions

I followed all required procedures for gaining access to student participants enrolled at Grassy Meadows Middle School. I submitted the proposal, the recruitment information, the copies of the parent consent and student assent forms, and all data collection instruments to IRB for approval. Following IRB approval, I requested permission from the county school board and the school principal. I then recruited two teachers to send home an information packet with a flyer about the study, a parent consent form and a student assent form. After parent consent was signed, I scheduled the interview with the student.

Data Collection

The data collected answered the following research questions:

RQ1: What are the experiences of middle school students interacting a blended online and problem-based learning environment?

RQ2: How do middle school students describe their motivation in response to blended online and problem-based learning environment?

RQ3: How do middle school students understand their level of engagement in a blended online and problem-based learning environment?

Interview Protocol

Students who volunteered to be interviewed and whose parents returned signed consent forms scheduled a time for the interview with me. If any conflicts arose, students could e-mail me to schedule an alternate date or time. Interviews were conducted before school in the school media center or in my classroom.

I conducted 8 interviews with students from two classes from different grade levels. Interviews were conducted in the media center or in an adjoining conference room. The interview was scheduled to take approximately 45 minutes. The student responses to interview questions provided data related to student experiences. After the interview audio files have been transcribed by a hired transcriptionist, the students had an opportunity to read the transcript to check for accuracy and to explain any ambiguous answers.

In addition to the face-to-face interviews, students completed an online questionnaire taken in Qualtrics. Online questionnaires took approximately 10 minutes to complete and followed the interview. The questionnaire responses provided data related to students' perception of their motivation and engagement.

The interview began with introductions and clarification of the purpose of the study. I explained that the student should answer all questions honestly and that names were not shared with anyone and were not included in the final report. I also stated that if at any time the student felt uncomfortable answering questions, the interview would end immediately without any ill will or negative consequences. I reminded the student that the interview was taped and that he or she would have an opportunity to review the transcript if desired. I then began the 10-question interview. Prompts were used as needed to encourage students to expound on their answers. At the end of the interview, I asked students if there was anything else that they would like to share with me as question 10. When the student had finished answering all of the questions, the interview ended. Additionally, the recordings from the interviews were transcribed by a paid transcriptionist to ensure accuracy and I wrote memos after each interview was finished throughout the interviewing process.

Questionnaire

At the end of the interview, I provided the student with the login information to complete the questionnaire at his or her convenience within the next 2 days. If needed, I provided the student a pass to class. I used the Qualtrics survey platform to analyze questionnaire data but conducted a comparison analysis using codes from interviews and additional codes as needed to validate the platform results.

Data Analysis Plan

The purpose of this study was to investigate the experiences of middle school students as they participate in personalized learning that blends face to face instruction

with technology lessons and problem based project development. I used thematic inductive analysis as the method of data analysis based on Braun and Clarke (2006). I reviewed the data multiple times to identify codes, patterns and themes using constant comparison. Memoing and reflexive journaling were used to reduce bias during analysis. I analyzed the data from each participant individually looking for recurring codes. I then analyzed the codes for patterns and then synthesize the patterns into themes to interpret the experiences of middle school students participating in an online and project-based learning environment.

The following steps were used to code, analyze, and synthesize the data to answer the research questions.

1. Listen to the audio recording of the interviews and take notes/memo.
2. De-identify by removing any names from the audio file.
3. Provide audio recordings to a hired transcriptionist.
4. Upload the interview transcripts to Dedoose.
5. Highlight and code.
6. Cluster or organize (parent child).
7. Compare and contrast each new participant's codes to the previous codes/add as needed. This process of review and analysis of each interview transcript provided a constant comparison.
8. While conducting the comparison, I identified direct quotes that help to clarify patterns in the data.

9. I looked to see what patterns can be linked together to show the overarching themes.
10. When all of the interviews had been analyzed and coded and all patterns had been clustered, themes became evident.
11. I then wrote a detailed analysis of each theme.
12. Patterns were explained using evidence from the transcript quotes.
13. The synthesized data was then used to answer the research questions about students' experiences, motivation to learn, and engagement in the learning process (see Percy et al., 2015).
14. The process was be repeated with the survey data.

Summary of Data Collection and Analysis

I combined the data from the interviews with the results of the online questionnaire and conducted thematic analysis. As a result of this process I was be able to define student experiences related to their motivation and engagement in learning and their interactions with peers and teachers. This data may be useful to teachers and administrators as they develop personalized learning supports for students working online and through problem-based learning tasks.

Issues of Trustworthiness

Trustworthiness is a term that describes the accuracy, believability, and confidence that a reader has that the study presented is sound. There are many factors that contribute to this judgement from the design of the study to the interpretation of the results. Graneheim, Lindgren, and Lundman (2017) describe this as the red thread that

runs throughout the study allowing readers to follow the decision-making processes and to differentiate the voice of the researcher from the participants' voices. For a study to be considered trustworthy it must address credibility, dependability, transferability, and confirmability.

Credibility

Credibility is a term used to describe the likelihood of the findings being true. Attention to the selection of qualified participants, the number of interviews conducted, and the richness of the data obtained from those participant is crucial in developing credibility. Graneheim et al. (2017) state that participants must have the experience and the ability to describe their experiences to achieve credibility. In this study, participants must be students currently enrolled at the site of the study at and must be willing to fill out a questionnaire and be interviewed. Shenton (2004) suggests iterative questioning and debriefing sessions to ensure trustworthiness. In this study, I included iterative questioning by using prompts to clarify or expound upon general question answers.

Shenton (2004) also communicated a concern that the researcher be qualified. For this study, I completed coursework and read extensively about the methods for qualitative research including developing interview protocols and conducting research in educational settings. I engaged in reflexive journaling throughout data collection and analysis to define and reduce my biases. I also wrote memos throughout the research study.

Transferability

Transferability is the ability of the research findings to be generalized to other settings. Graneheim et al. (2017) state that the specific criteria for selection of

participants and the rich description of the context of the study is needed for transferability of the findings. Similarly, Shenton (2004) identified several aspects of the study that should be taken into consideration prior to any attempt for transference, such as the types of data methods employed, period when data was collected, restrictions to the types of participants that contributed data, variability of organizations that participated, and the number of participants involved. In the current study, I established a set of inclusive criteria to enable others to understand eligibility criteria for participation. I also addressed this issue by acknowledging the limitations of the study based on the factors.

Dependability

Dependability is the ability of the study to be repeated. According to Shenton (2004), to achieve dependability attention must be given to the (a) research design and its implementation (b) operational detail of data gathering, and (c) reflective appraisal of the project. In the current study, for the research design and its implementation, a description of what was planned, I prepared a step-by-step process, or audit trail, in the research plan as a guideline to follow as well as for anyone else interested in repeating the study. To address the concept of operational detail of data gathering, what was done in field, I used field notes, and the transcripts of the interviews. For reflective appraisal of the project, researcher maintained open lines of communication with her mentor and other committee members.

Confirmability

Confirmability is the qualitative counterpart to objectivity. One way to establish confirmability is to include the measures taken to reduce researcher bias and to present

the voice of the participants (Shenton, 2004). In this study, I maintained a reflexive journal and wrote memos throughout the data collection and analysis process. I hired a transcriptionist to type the transcript of the interviews and included direct quotes to elucidate the categories and themes in the data.

Ethical Procedures

Collection of qualitative data requires the researcher to minimize the potential for credibility issues while protecting the participant's privacy. In this study, I recorded interviews and hired a transcriptionist to transcribe the de-identified audio files. The students were given the opportunity to read the transcript to check for accuracy and to clarify any answers. In writing up the findings, I included direct quotes to elucidate codes and develop themes.

I followed all required procedures for gaining access to student participants enrolled at Grassy Meadows Middle School. I requested permission from the county school board and the school principal following IRB approval. Teacher recruitment was conducted in casual conversation and without pressure or coercion. Parent permission was documented on parent informed consent forms placed in an envelope in the student's homeroom class. Student assent forms were also returned to the researcher in the packet sent home. All signed forms were treated as confidential information and were protected by storage in a secure, locked file cabinet in my home. In preparing to conduct research with students, I completed the online courses provided by the Collaborative Institutional Training Initiative found at http://www.citiprogram.org. I followed all ethical procedures pertaining to minor children throughout the collection and analysis of data.

Plans to address ethical concerns related to data collection include preparing a third homeroom teacher to send home an invitation letter to parents should the response to the first round not produce enough participants. Additionally, I maintained communication with her mentor and discussed any adverse events with her mentor and committee immediately.

All data collected were secured using the procedures listed below:

1. Online Questionnaires were on the Qualtrics login protected servers.
2. Qualtrics uses Transport Layer Security (TLS) encryption (also known as HTTPS) for all transmitted data. All surveys are protected with passwords and HTTP referrer checking. Servers are hosted in U.S.A data centers that are independently audited using the industry standard SSAE-16 method.
3. The completed questionnaires were be downloaded to my login protected, personal computer.
4. After downloading the questionnaires, I cancelled y Qualtrics account.
5. Digital audiotapes of interviews containing only pseudonyms were stored on the researcher's login protected personal computer, after the dissertation was confirmed, files were downloaded to a USB file and will be kept in a locked file cabinet in my home for 5 years.
6. Confidential paper consent and assent forms were stored in a locked file cabinet in my home and will be kept for 5 years.

Data will be protected by storing in a secure locked file cabinet in the researcher's home for 5years as required by IRB. Only de-identified data were shared with the

committee and was included in the final write up of the study. Only the researcher had access to confidential forms. After 5 years: Paper documents will be shredded, digital data (USB file) will be physically destroyed by dismantling the drive and burning the memory chip, and any remaining computer-based files will be erased.

Summary

In this chapter, I discussed the purpose for the generic qualitative design of the study, the role of the researcher, the methodology for collecting and analyzing data, the steps taken to ensure the trustworthiness of the findings, and the attention to ethical concerns related to the study. Using generic qualitative research, I was able to apply my extensive knowledge of the program used in the study site and focus on the students' experiences. My role was to conduct interviews, collect questionnaire data, and analyze the data to find categories and themes. Highlighting the perspective of the students and using their self-evaluation of their motivation and engagement as a lens to frame the results helped to identify factors that influence students' buy-in to this type of personalized education. Inductive thematic analysis with constant comparison, researcher memoing, and reflexive journals increased the validity of the results of the study. Finally, I followed all ethical guidelines to protect the students' rights and to properly store and delete or destroy data at the appropriate times. This chapter outlines the study methodology and leads into the collection and analysis of the data in Chapter 4.

Chapter 4: Presentation of Findings

Introduction

The purpose of this study was to explore the experiences of middle school students who were enrolled in an online, problem-based learning environment. The results of this study of the students' responses to this type of blended, problem-based learning environment provides educators with information that can be used to transform public school policy and practices. In this chapter, I will describe the setting of the study, the demographics represented in the population, the collection of the data, the analysis of the data, the evidence of trustworthiness, the results, and the summary of the study.

Setting

I conducted this study in a middle school during the last 2 weeks of a school year. The sample was comprised of students who volunteered to participate and who were available to be interviewed during the last days of school. Some of the participants were student ambassadors, meaning that during the school year they conducted tours for teachers visiting the school to learn about personalized, online, and project-based learning. These student ambassadors were coached and learned a script to answer some questions about the program. During the interviews, some of that coaching was evident, but I used prompts to try to gain insight into the student's individual experiences. Some of the participants were children of teachers and have listened to their parent voice their opinion of the program. I also used prompts with these students to try to help them carefully consider their own experiences as well.

Demographics

Participants in this study included students who were in sixth through eighth grades who did not have and had not had me as a teacher or adviser. There was an even ratio of 4 boys to 4 girls, and several ethnic backgrounds were present in the sample. I interviewed two White male students, one female student of Jewish decent, one female student from the Middle East (country unknown), a male student from Africa, an African American female student, and one male and one female Hispanic student (a brother and sister).

Table 1

Demographics

Pseudonym	Gender	Grade	Ethnicity
1-29	Female	Eighth	Jewish
1-1	Male	Eighth	Caucasian not Hispanic
1-16	Female	Eighth	Middle Eastern
1-15	Male	Eighth	African
2-23	Female	Sixth	African American
2-32	Male	Sixth	Caucasian not Hispanic
1-34	Female	Seventh	Hispanic
1-35	Male	Seventh	Hispanic

Data Collection

After IRB and site approval, I recruited two homeroom teachers, one in sixth grade and one in eighth grade, to read an explanation letter and pass out packets for students to take home. When it appeared that I would not have enough participants before the end of the school year, I recruited one additional teacher and sent packets home with students in one seventh grade homeroom. Students brought packets back to the office or directly to me. I looked through the packets to verify that parent consent and student assent forms were completed and signed. Then I contacted the student to schedule the interview time.

I interviewed 8 participants for this study. All of the interviews were face-to-face. Six of the interviews took place at the school and, due to time constraints, the last two were conducted in the students' home after the last day of school. The students completed the online questionnaire at their leisure outside of the school day.

The interviews took an average of 10 minutes, and the questionnaire took about the same amount of time. I conducted interviews in my classroom with students' permission, due to other activities in the media center in the mornings during the last week of school. Three of the interviews took place after the conclusion of the school year, one at the school and two at the students' home at the request of the parent.

Because it was the last week of school, homeroom times for eighth grade shifted to later during the day, but the time aligned with my planning time and with the students' permission, three of the interviews took place at the adjusted time. I digitally recorded the

interviews, and they were transcribed by a paid transcriber. Questionnaires were accessed using a quick response code known as a QR code to simplify the login as the URL was long and complicated.

Data Analysis

After the interviews were complete, I listened to the digital audio recordings and wrote memos about each interview. I verified that no names were included in the recordings and uploaded the audio to Dedoose, then mailed the recorder to a paid transcriber who typed all of the interviews into Microsoft Word documents. When the transcriber sent the transcripts back, I uploaded the word documents into Dedoose, a data management software program that allows researchers to code data for analysis. All digital data and all transcribed Word documents were imported into Dedoose. I compared all questionnaire data from the online survey program, Qualtrics, using the program analysis and then analyzed each question using inductive analysis. Coding and analysis required reading the transcripts multiple times and journaling during the analysis.

When all digital recordings and Word documents were uploaded to Dedoose, I listened to the audio and read the transcripts in their entirety. Then I started to code individual interviews for general ideas. After the first time coding, I had eight codes: collaboration with peers, communication with teachers, engagement in the learning process, motivation to learn, personalized learning, project-based learning, technology for learning, and technology for communication. At that point, I struggled with determining how to identify details in the data that would describe the students' experiences. After attending a PhD residency, I decided to go back to my framework and look at my

questions to align the questions to the conceptual framework. I found that many questions were worded in a way that addressed more than one concept.

The first question that I asked referred to learning pathways, or the outline of the curriculum activities available for students to show mastery of content. These pathways are intended to allow students to choose the activities that interest them and align with their learning styles. After completing a pretest, students are able to determine which standards they have mastered already, which standards may need more practice, and which standards they still need to learn. The pathway then provides options for the students to work through the unit at their own pace.

Question 2 referred to the makerspace, the lab where students are able to work on problem based learning projects and house projects. This question related to the students' engagement in the learning process and their participation in experiential learning. Question 3 referred to the use of technology in the online and problem-based learning environment. This question related to the students' experiences in the blended program.

With Question 4, I asked students about their interactions with their teacher. Prompts were used to encourage students to think about communication both inside and outside of the classroom setting. This question related to the students' self-efficacy and ability to self-advocate as well as their engagement in the learning process. In addition, the ZPD requires an informed other, either a peer or a facilitator, to guide students to complete work beyond their individual abilities (Clapper, 2015). Answering this question, students described their experiences communicating with the teacher while working in PBL and working online. With Question 5, I asked students about their

collaboration with peers. This question also related to students' engagement in the learning process and their participation in experiential learning.

Questions 6 and 7 were related to the use of Google Classroom for learning and communicating. This personalized program includes online content and PBL in a one-to-one, technology-rich environment. Each student was issued a Chromebook at the beginning of the year, and they are able to take the computers home every night. Google Classroom was one of the platforms that allow students to collaborate with peers, communicate with peers and teachers, and organize assignments and projects. Every teacher has a Google Classroom, although some use it more than others. These questions related to students' engagement in the learning process and their experience in online learning but also addressed pacing and choice of personalized learning.

Question 8 referred to students' motivation to learn. Students were asked what made them want to learn. In Questions 9 and 10, I asked students to describe their overall experience in online, problem-based learning and to give suggestions to improve the program. I then looked at the students' completed questionnaires. In the questionnaire, students answered 11 questions related to their motivation to learn and engagement in the learning process.

After aligning the questions to the frameworks, I went back and coded again using constant comparison and looking for different ideas. I identified and highlighted important statements to clarify patterns in the data. During this process, I developed child codes for each of the eight original codes. Once the child codes were identified, I had a moment of discovery and the coding became almost effortless. The data seemed to speak

to me. I worked methodically through each student interview transcript one-by-one. The students described their experiences in this blended learning environment related to their feelings, their interactions with others, their use of technology, and their completion of projects in the academic setting.

After looking back at the frameworks and reading the transcripts again, I added child codes under each parent code. Under collaboration with peers, I added ZPD-capable peer and teambuilding and working together child codes. Under communication with teacher, I added a ZPD teacher guidance code. Under engagement in the learning process, I added hands-on activities and staying on track child codes. Under motivation to learn, I added relevant to interest and future goals child codes.

Under personalized learning, I added choice of activities, pace, and pathways child codes. Under project-based learning, I added makerspace, related to content classes, and related to future goals child codes. Under technology for communication, I added e-mail or blog and peer editing child codes. Under technology for learning, I added content acquisition (i.e., video tutorial), practice or drill, and research child codes. Under technology for organization, I added assignments and calendar or schedule child codes. Codes were weighted from 1 to 10 with 1 being a negative experience, 5 being a neutral response, and 10 being a positive experience

Students accessed the questionnaire using a QR code to simplify the log in, but only five of the students completed the questionnaire. After analyzing the data in the Qualtrics format by reviewing charts and patterns, I uploaded the data into an Excel spreadsheet to be able to print the code frequency chart on one page. Using the Excel

spreadsheet, I looked for patterns in the data. I then identified the links from the patterns in the questionnaire to the patterns identified in my coding of the interviews.

Variations in Data Collection

During the recruitment process, the limited number of days before the end of the school year necessitated adding an additional homeroom to the process as I described in the recruitment plan. I approached a seventh grade teacher and asked if he would pass out packets. He agreed, signed the confidentiality paper, and two students who participated in the interviews were from his seventh grade homeroom. None of the students who participated in the study had me as a teacher or advisor.

Because there were activities in the media center preparing for the summer vacation, and with the consent of the students, most of the interviews took place in my classroom. Two of the interviews took place in the students' home at the parent's request. Interviews were much shorter than I anticipated with the average length of time being approximately eight minutes.

Summary of Interviews

Participant 1

The first interview was with a female student in the eighth grade. She appeared to be nervous but had strong feelings negative about the program and shared them openly. Codes for this interview included a one for personalized learning related to choice, project based learning in makerspace, collaboration with peers especially teambuilding, and communication with teacher specifically ZPD teacher guidance. The student stated that technology was used mainly to store assignments. She also stated that her motivation

to learn was that she liked learning, but that "sometimes we just have to go on Odysseyware and it's not really as easy to learn from that as it is [from] a teacher." She further stated, "It [online problem-based learning] doesn't really work because we are being told that it's personalized, but it's not because everyone in class has to do the same thing."

Participant 2

The second interview was with an eighth grade male student. He was eager to participate and was articulate in his responses to questions. He had very postivie opinions about the program but also shared a few suggestions for change. Codes for his interview included eights for personalized learning using pathways and collaboration with peers, fives for technology for organization use of the calendar, personalized learning related to pace, motivation related to future goals, technology for learning mainly content acquisition, technology for communication using email or bogging, and communication with the teacher. The area that this student identified as a weakness was in personalized learning choice. In response to the question, what suggestions do you have to improve the blended learning interactions with your teachers? The student stated,

> I would say like, to be more open to students giving ideas for like a project. Like teachers will say here's what you can do, and you can do it in your own way. But I think they need to tell the students more and give them more opportunities to come up with their own projects.

Participant 3

The third interview was with an eighth grade female student. She was confident and articulate and took her time to think about her answers to the questions. She really liked the opportunities to work at her own pace, but felt that there could be better alignment or connection between the different aspects of the program. Codes for this interview included eight coded for personalized learning including pace and communication with the teacher and ZPD-related teacher guidance. PBL including makerspace, technology for organization, using the calendar, technology for learning, creating assignments and research, technology for communication, email or blog and peer editing, collaboration with peers, ZPD capable peer, and motivation, relevant to her interests coded as 5 with neutral opionins about the program implementation.

The area that this student identified as having room for improvement was relating the PBL projects to the content courses. She stated,

> Like I think that they could pertain like, more toward a subject. Like at the beginning of the year it could be like math and science projects in that certain makerspace. If like, say I'm in the house of design so like at the beginning of the year we could do like math projects, like numbers and stuff. Then at the end of the year we could do like language arts, like writing essays about what we learned earlier in the year. Like, things like that.

Participant 4

The fourth interview was with an eighth grade male student. He appeared to be shy at first but was thoughtful and articulate in his answers. This student really liked

working collaboratively and on projects, and he appreciated the teachers' efforts to help him succeed. Codes for this interview included nine coded for project based learning including makerspace and communication with the teacher and ZPD teacher guidance. In reference to the teachers, the student stated, "And they work really hard to like get me to do this work because some of the work they give us might be difficult or challenging, but they still try their best to get me through it." The personalized learning pace was scored an eight with the student commenting, "The pathway is very good and it helps a lot of people. Especially the ones who are like behind." In addition, there were scores of five for technology for learning such as content acquisition, technology for organization including assignments and calendar or schedule, personalized learning, staying on track, and motivation to learn, relevant to interest. The areas that this student identified as needing improvement were technology for communication and personalized learning , studentchoice.

Participant 5

The fifth interview was with a sixth grade female student. She seemed outgoing and asked for clarification when she did not understand a question. This student also commented on how helpful the teachers were but stated that pacing was not personalized. Codes for this interview included an eight for communication with teacher specifically ZPD teacher guidance, a seven for engagement in the learning process in the category of staying on track, and personalized learning related to choice of activities. Neutral codes of five were recorded for project based learning in makerspace, motivation to learn related to future goals, technology for organization, collaboration with peers or ZPD

capable peer, and technology for communication predominately in the area of peer editing. Areas of weakness were technology for communication in e-mail or blogging and personalized learning particularly in the area of pace.

Participant 6

The sixth interview was with a male sixth grade student. This student was very polite and had a great sense of humor. He was thoughtful and thorough in his answers. This student enjoys the collaboration of the progeam, but felt that technology was used for basic purposes and that there was room for improvement in connecting with the world outside of the classroom. Codes for this interview included sevens for motivation to learn related to future goals, and communication with peers especially related to teambuilding was mentioned in response to two different questions. Neutral codes of five were recorded for personalized learning use of pathways, pace, and choice, technology for communication in peer editing, technology for organization or assignments and calendar, technology for learning in the area of research, and technology for learning especially content acquisition was mentioned twice. The area of weakness identified by the student was technology for communication using e-mail or blogging.

Participant 7

The seventh interview was with a female seventh grade gifted student. This student expressed strong negative feelings about personalized learning. Codes included fives for motivation to learn relevant to interest, project based learning in makerspace, technology for learning used to conduct research, technology for organization related to assignments, and communication with the teacher specifically ZPD teacher guidance. The

code for project based learning was a two and personalized learning using pathways, technology for communication especially peer editing, collaboration with peers or ZPD capable other and technology for learning related to content acquisition all scored ones. In reference to content acquisition online the student stated, “It’s easier when a teacher explains it to you.”

Participant 8

The eighth interview was with a seventh grade male student. He was nervous and asked for clarification on several questions. This student was very unsure about the program. He wanted to be successful in school, but felt like he needed mor help. He also expressed a desire for there to be more choice and more communication about the expectations. Codes for this interview included fives for communication with the teacher, collaboration with peers especially teambuilding, technology for learning or practice of skills, and technology for organization specifically assignments. There was one code for engagement in the learning process related to hands on activities. In response to the question how teachers can make you want to learn, the student stated, “more hands on.” Codes for technology for communication using e-mail or blogging and peer editing, personalized learning related to choice, and project-based learning in makerspace and choice were ones.

Questionnaire

After coding all interviews, I uploaded the Qualtrics Motivation and Engagement Questionnaire data to Dedoose. Because the interviews were accessed using a QR code and no individual information was collected, I coded the data from each question rather

than coding by survey. I used the same codes found in the interviews, and I found additional child codes and added them: Under technology for learning, I added programming, under project-based learning, I added self-assessment, under engagement, I added maintaining focus on task, skill or talent, and preparedness, under motivation to learn I added getting good grades and pleasing parents.

In question 1, I asked students what type of lessons interested them in class. Student responses included the content areas of math, science and social studies, but also mentioned music, electronics, engineering and interactive lessons. This question was coded as relevant to interest with child codes for hands on activities and skill or talent.

In question 2, I asked students what computer programs they liked best and why. Student responses included Vex robotics, Google Classroom and Google Docs, and USA Test Prep. Two students stated that they did not like any of the computer programs stating that "I don't learn [that way]" and "it's hard to understand." This question was coded as content learning with child codes of content acquisition, practice or drill, and programming.

In question 3, I asked students to self-evaluate their attention to tasks or their engagement in the learning process, in makerspace. Forty percent of the students claimed to understand their assignment and spend most of their time working, coded as an eight for maintaining focus, while 60% chose 'I have no idea what I am supposed to be doing so I just talk to my friends' coded as a two for maintaining focus. In question 4, I asked students how the tasks in makerspace related to career pathways. One student chose 'I need to complete my tasks to get good grades on my pathway' coded as an eight for

related to content, while four students chose ‘I don’t think makerspace is related to the career pathway’ coded as a two for related to content.

In question 5, I asked students how the tasks in makerspace related to future college or career goals. One student stated that the projects were related to interest and allowed students to learn more about something, while another stated that the projects were specific to the house choice which was based on your interest in a career. These responses were coded as relevant to future goals and relevant to interest. Three students stated that they really did not do anything in makerspace but talk to friends and that they did not see any relationship between tasks and future goals. These responses were coded with scores of one in related to future goals.

In question 6, I asked students to describe their use of their Chromebooks. Responses included Google Classroom and docs, worksheets, research, e-mail, content delivery, and games. These responses were coded as practice or drill, content acquisition, research, assignments, calendar or schedule, and games.

In question 7, I asked students what motivates them to learn. Choices included getting good grades, pleasing m parents, it makes me feel good, I have long term goals that require content knowledge, I want to play sports and need to be eligible, and I’m naturally curious and want to know stuff. 25% of the students chose good grades, 20% chose eligibility for sports, 15% chose pleasing parents, it makes me feel good about myself, and I’m naturally curious, while 10% chose long term goals. These were coded using child codes under motivation.

In question 8, I asked students to self-evaluate how often they were off task each day. Eighty percent of the students chose 0-3 times per day, while 20% chose 4-7 times a day. These were coded using the child code maintaining focus on task under engagement in the learning process.

In question 9, I asked students to self-evaluate why they are or are not a good student. One students stated, "I don't really judge myself and I don't know how to judge myself or what level to judge myself on" while the others stated that good behavior and good grades were an indicator that they were good students. These responses were coded using the self-assessment child code under project-based learning.

In question 10, I asked students how they prepare for class or for lab. Student responses were related to organization, having supplies, and charging their computers. These responses were coded as preparedness under engagement in the learning process.

Two students had negative comments about every aspect of the program. Both were female students who have tested into the gifted education program and both stated that they prefer traditional direct instruction. Codes for these students were kept in the data but were flagged to identify possible bias.

Description of Initial Codes

The initial codes I found were collaboration with peers, communication with teachers, and engagement in the learning process, motivation to learn, personalized learning, project based learning, technology for learning, and technology for communication.

Figure 1identifies all the initial codes.

Description of Patterns

To move from codes to patterns I looked for topics that were related and clustered the codes together. Codes that talked about the 21st century skills of collaboration and communication became one pattern, codes related to motivation and engagement became another pattern. Personalized learning and project based learning also became patterns, and all of the codes related to technology were clustered together under that pattern heading. Table 2 links the initial codes with the combined patterns in the data.

Table 2

Initial Codes

Initial codes	Patterns	Themes
collaboration with peers	Collaboration and communication	Social issues – related to students description of their interactions with peers and teachers in class and in lab
ZPD capable peer		
teambuilding and working together		
communication with teachers		
ZPD teacher guidance		
engagement in the learning process	Motivation and engagement	Personal issues – related to students thoughts and feelings about the program and their motivation and engagement while participating in the program
hands on activities		
maintaining focus on task		
preparedness		
skill or talent		
motivation to learn		
Relevant to interest		
future goals		
getting good grades		
please parents		
personalized learning	Personalized learning	
choice of activities		
pace		
pathways		
project based experiential learning	Project based learning	
makerspace		
staying on track		
related to content classes		
related to future goals		
self-assessment		
technology for communication	Technology use	Contextual issues – related to the implementation of the program and the technology aspect of online and problem based learning
email or blog		
peer editing		
technology for learning		
content acquisition (video tutorial)		
games		
practice or drill		
programming		
research		
technology for organization		
assignments		
calendar or schedule		

Evidence of Trustworthiness

Credibility

Participants in the study were students enrolled in the site school who were willing to be interviewed and fill out a questionnaire. During the interview process, I used prompts to clarify and expound on the general answers to the questions. I used the experiences from course work training and engaged in reflexive journaling throughout the data collection process. I also kept memos during the research study.

Transferability

In order for replication of the study, I established a set of inclusive criteria to enable others to understand eligibility criteria for participation. In this study the participants were required to be actively enrolled at the site school. I also acknowledged the limitations of the study based on the factors.

Dependability

I followed the step-by-step process that was outlined in the methodology section of Chapter 3. I also kept field notes and transcripts of the interviews. Throughout the process, I communicated with her mentor and with site administrators.

Confirmability

I took several steps to present the data without bias. I maintained a reflexive journal and kept memos throughout the data collection and analysis process. I hired a transcriber to type the transcript of the interviews and included direct quotes to elucidate the categories and themes in the data.

Results

After reviewing all the initial codes I looked for the most frequent codes to develop patterns in the participants' responses. The most frequent parent codes identified were for communication with teachers, personalized learning, project-based and experiential learning, technology for communication, learning, and organization. I will expound on each of these topics including the words of the students to establish credibility.

Personalized Learning

The educational program that is the context for this research is a personalized learning environment called Learning Pathways. There were two interview questions related to this context aspect of this study, how do you feel about the learning pathways? And how would you describe your experiences interacting in online problem-based learning? Personalized learning was mentioned 17 times with 10 times related to the topic of student choice, and seven times related to topic of pace. Of those responses, five students recommended more choice, and two said that the pathways included a variety of activities, but that students were required to complete all of the activities so there really was no choice involved. Overall the students identified two issues related to the personalized learning environment, the lack of individualized choice in the pacing of the project development and the projects themselves.

Project-Based Learning

The instructional model for this educational program was a model of students constructing projects called Career Pathways houses. There were two interview questions

related to understanding student response to this aspect of the context; what do you think about the Career Pathway houses? And how would you describe your experiences interacting in online problem-based learning? Project-based learning was mentioned 13 times with eight of those references to makerspace. One student described a plan to write a play, but then stated that it "never happened." Another student, in response to a question about projects stated,

> Like, I think that they could pertain, like, more toward a subject. Like at the beginning of the year it could be like math and science projects in that certain makerspace. If like, say I'm in the house of design so like at the beginning of the year we could do like math projects, like numbers and stuff. Then at the end of the year we could do like language arts, like writing essays about what we learned earlier in the year. Like, things like that.

Another student stated

> Makerspace worked here very well. It was not what I was, it was more than I expected really because we worked on different projects. Like, I remember when it was eclipse day we worked on solar eclipse projects. And for our house projects a lot of people did a lot of different things. Like house of design they built a water tower, which was pretty cool. My house, we like did a garden thing. Which is also cool. And so, it worked really well cuz different houses worked on different things.

Four of the students stated that the makerspace time was both unstructured and confusing, or wasted time without direction. Three students stated that they worked on

projects and liked the time to try something related to their future goals. Overall the students were engaged in the development of the projects in makerspace. However, several noted that the projects did not include timely feedback from the instructor and this lessened their engagement.

Technology

This educational program incorporated multiple technologies in a personalized, project-based learning environment. There were three interview questions to understand these participants' responses to the technologies: What do you like best about working online? How do you use Google classroom? And how does the collaboration in Google Classroom work? Technology for learning was mentioned 12 times with eight of those times related to content acquisition or video tutorials. Students mentioned using NearPod and Odysseyware as well as using the Chromebooks for research for projects. Two students expressed a dislike for online learning, while three stated that being able to go back and watch the video again and working at their own pace was beneficial to them.

Technology for organization was mentioned 11 times with 10 of those times related to completing or storing assignments. Students expressed the ease of use for finding, completing, and storing homework and that things were less likely to be lost. Most of the students stated that their teachers posted assignments in Google Classroom and that it helped them to be organized by having everything contained in the program.

Technology for communication was mentioned 11 times with six times related to email or blog and six times related to peer editing. One student stated that the technology was not used for either activity. One student stated that Google classroom was used for

peer editing stating, “In my social studies class I did that a lot because we had a lot of group based online. Like we had a lot of group based online exercises.” Another student mentioned being able to communicate with the teacher, “even your teachers if they aren’t at school that day you can email them and still ask them a question,” but most students stated that they did not use their technology for communication purposes. One student stated, “Well, I don’t really talk to my teachers online. It’s more like face to face.” Overall these students multiple benefits from access to these technologies primarily their ability to access and store their work online. Their responses were less positive when describing using technologies for inquiry and communication in the differentiated project-based learning environment.

Collaboration and Communication

This study sought to identify the social interactions in the classroom developed in the learning environment. This topic was linked to three interview questions including how would you describe your educational interactions with your peers? How does the collaboration in Google Classroom work? And how do you feel about your interactions with the teacher?

Communication with teachers was mentioned 11 times. Under communication with the teacher, teacher guidance was mentioned six times. Students stated that they were able to ask questions and get help, but that sometimes they had to wait quite a while because so many students needed help. One student stated, “I think that they teach us, but sometimes we just have to go on Odysseyware and it’s not really as easy to learn from that as it is a teacher.” Another said, “They work really hard to like get me to do this

work because some of the work they give us might be difficult or challenging, but they still try their best to get me through it." Less frequently identified in the initial parent codes were collaboration with peers, motivation to learn, and engagement in the learning process.

Collaboration with peers for building understanding by consulting with a capable peer was mentioned in three interviews. One student said,

> I often need help a lot because… It's not that… I'm not like a fast learner it's just I need help. Cuz if I don't understand something I can't just sit there and try to do it. So, I often ask the teacher or like my friend if they're sitting next to me or something, I ask them if they had trouble with it or if they can help me, so.

Team building and working together on projects or assignments was mentioned in two interviews. One student stated

> I feel like even though it can be like a rough time or somebody's like no you have to do this or no you have to do that. I feel if it boiled down to it, if you do that and if you overcome those challenges you can become great, um, team members.

Two students stated that they did not have the opportunity to work with peers or that their partners did not do their work so they ended up completing the projects by themselves. Overall the students felt that the teachers' interactions were productive in this innovative program but collaboration and group work were not implemented effectively.

Motivation and Engagement

To understand personal perceptions there one interview question, how would you describe your motivation to learn? Additionally, all of the questions on the questionnaire

related to student motivation to learn and engagement in the learning process. The data from the questionnaires were coded along with the interview data to provide a rich understanding for students' perception of their own motivation and engagement.

Students had a variety of answers about what motivates them to learn, but most mentioned something about the content being interesting to them. Three students mentioned some kind of future or careers goals, one said "I feel like what makes me want to learn is how much you can do with that knowledge when you grow up. That's why I feel like learning is a big part of somebody's life." One student mentioned competition with a sibling and another student mentioned making parents happy. In the questionnaire, students chose getting good grades (5/5), being eligible to play sports (4/5), pleasing parents (3/5), it makes me feel good about myself (3/5), I am naturally curious and want to know stuff (3/5), and I have long term goals that require knowledge of content (2/5).

On the questionnaire, four of the five students stated that they were off task zero to three times a day, while one student said four to seven times a day however, when asked about taking notes in class three students stated that they only take notes one to two times a week while one student said three to four times a week. In makerspace lab two of the five who responded to the questionnaire said that they knew what to do and spent most of their time working, but three students said they had no idea what to do so they just talked to friends.

In the interviews most of the students stated that Pathways helped them to stay on track and know what to do next although one student stated that they were confusing and another student said that the pathways were a guideline but then the teacher would say to

do something else instead of what was on the pathway. Students also stated that it was easier to stay engaged when the content was interesting. One student stated, "If it's something interesting like learning about how stuff works in the community and stuff then I'm more interested in it than just sitting down and looking at a board learning."

Overall the overarching pattern in this topic were the interest that the students had in the content and their learning responses related to understanding that content area. Additionally, if the technology was difficult to understand the students identified a loss of motive and engagement. Finally the design of the learning environment required the learner to be engaged as proactive learners. Several of the students identified that they were not able to self-monitor well enough to stay engaged.

Themes

I next looked at these patterns to see what patterns could be linked together to show the overarching themes. When all of the interviews had been analyzed and coded and all patterns had been clustered, themes became evident. The themes that I recognized in the clusters were related to (a) the personal characteristics of the learners including motivation and engagement (b) the dynamics of the interactions of the classroom, and (c) the characteristics of the educational program. The personal characteristics theme is related to aspects of the intrinsic motivation to learn vs. the external challenges and the students' self-efficacy related to projects or tasks. The classroom interactions social theme identified how students' collaboration with peers and interactions with teachers related to the concept of Vygotsky's ZPD. The characteristics of the educational program contextual, the learning context, theme included the students' response to the instructional

strategies in implementing an innovative online and problem-based learning including the use of technology.

Personal Characteristics of the Learners

In relationship to personal learning, students' responses about the feelings that they experienced while trying to work through the online and problem-based learning program indicated some challenges in maintaining motivation and engagement due to the lack of choice and the fragmentation between the content, instructional methods, and testing formats. Most students demonstrated high extrinsic motivation and low to moderate intrinsic motivation with only one student stating, "I just like to learn." Students did indicate that it was easier to be motivated and stay engaged in learning when the content was interesting, relevant, and allowed the student some choice. When asked about tasks, students stated that they wanted more choice about what to do, and two students wanted to develop their own projects. Students also stated that they did not know why they were assigned some of the tasks because they did not connect to the test; although students felt confident in their ability to complete the assigned tasks, they found some of the tasks to be irrelevant to them personally and disconnected from their content classes.

Students wanted to have choices about content and work at their own pace on projects but wanted the work to be meaningful and related to the standards that are tested. When asked for suggestions, Student 1-15 stated,

> I would say, like, give us like a little bit more freedom or choices. Or maybe do something that will help interact better with the students because I know sometimes they like to, you know, let us read or like go online and look at these

> websites and stuff. It might not be as interesting as other students might think. So, I think it would be like, if we can give them like, let students decide. I know that might not be the best decision, but at least it will get them like interacting with each other. And if they do do that, then it can be best for students because now we can finally do something that we want to do and also still learn about it.

Interactions in the Classroom

In the social theme, students discussed their collaboration with peers and their interactions with teachers related to the ZPD. When students were asked about collaboration with their peers, some students stated that they completed group projects but some students either did not do any group projects or were not happy with their peers' level of participation. Students mentioned asking peers to explain content or directions for assignments when they did not understand the teacher's instruction. Students expressed a desire to be able to talk to their classmates both for understanding directions and for socialization.

In relationship to their interactions with the teachers, students stated that teachers were available to answer questions, but that sometimes students felt like they had to do a lot of independent study where a short direct instruction class may have saved time and confusion. Student 1-29 stated that she wanted, "less online learning and more teaching." Students in this study wanted to collaborate and communicate with their peers and teachers. Some students felt satisfied with the opportunities to talk and work together while others felt that the teachers could allow more time for conversations. Student 2-23 stated,

> I often need help a lot because… It's not that… I'm not like a fast learner it's just I need help. Cuz if I don't understand something I can't just sit there and try to do it. So, I often ask the teacher or like my friend if they're sitting next to me or something, I ask them if they had trouble with it or if they can help me, so.

Characteristics of the Educational Program

When discussing the instructional strategies in the online and problem-based learning environment, students had many comments about the use of technology and some suggestions for changing the design of the pathways and tasks. Most students described the use of technology as focused on utility or storage rather than on exploration or investigation. Only one student described communicating with the teacher online and several stated that they did not peer edit or collaborate using the available technology in google classroom. All of the students mentioned a need for more choice and two students mentioned a need for students to be able to design their own projects. Several students mentioned the length and complexity of the pathways and stated that there needed to be better explanation of the requirements.

Student explanation of their use of Chromebooks demonstrated a very limited range of activities. Students did conduct some research online, but most of the assignments were independent practice uploaded to google classroom. Students did mention NearPod and Odysseyware as programs used to learn content and they mentioned using the technology to stay on schedule and organized. Students did not mention using technology to interact with individuals outside of the classroom. Student 1-15 stated, "For

my class or every class, we use google classroom a lot because they give us a lot of assignments." Similarly Student 1-34 stated,

> Um, my teachers put assignments on google classroom and we would, or like a NearPod that we would go through. And in social studies she put like the notes on google classroom that we could go through and do. In science we would like watch videos in google classroom.

Summary

I used the synthesized data to answer the overarching research question about students' experiences, and the sub questions about their motivation to learn, and engagement in the learning process (see Percy et al., 2015). Students stated that they participated in a variety of activities and completed various assignments and tasks, some personalized based on pretest scores or preference and some standardized to address content standards. In the classrooms, many students completed online courses in Odysseyware or completed Nearpod activities. Some students still had paper worksheets, but several stated that all assignments were in Google Classroom. A few students participated in group activities or group projects in makerspace.

Although most students identified a motivation to learn, either intrinsic for the love of knowledge and interest in the material or extrinsic to receive good grades and please parents, several students stated that they were not engaged in the learning process in one or more aspect of the program, the classroom, the lab, or the online component. In relationship to motivation to learn, one of the students stated, "I just like to learn" but when asked about personalized learning the same student stated, "Um, it doesn't really

work because we're being told that it's personalized, but it's not because everyone in class has to do the same thing…I don't think that anyone likes personalized learning." Another student stated, "I feel like what makes me want to learn is how much you can do with that knowledge when you grow up. That's why I feel like learning is a big part of somebody's life" and his suggestion for teachers was,

> I feel like some projects we could, I feel like we could do more of like the standard learning on technology and like more of the hands [on] stuff, more of the building projects I feel like we could do that more on the outside of technology because I feel as if people who use technology to build things, I feel like they feel like you could just press a button and anything happens, no, but when you build things, you have to overcome challenges and stuff with your team mates. That's why I feel like we could use more computers but less computers at the same time.

Another student stated that learning is usually interesting, but that she doesn't learn well online she preferred direct instruction and clear directions.

The overarching research question for this study was what are the experiences of middle school students interacting in a blended online and problem-based learning environment? Students' experiences included classroom time used mostly for teacher facilitated content practice, lab time focused on problem-based learning projects, and independent content learning online. Some students really like the choice and pace of online and problem based learning, but some students found the program to be frustrating and disconnected. Students were not able to relate the makerspace activities and projects

to the content standards tested and felt like the online courses were unrelated to the projects.

In the following chapter, I will include a discussion of the findings of this study in relationship to previous literature. I will define the limitations of the study and recommendations for further study. I will also describe the implications from this study for the field of education.

Chapter 5: Conclusions

Introduction

The purpose of this study was to investigate the experiences of middle school students as they participated in personalized learning that blends face-to-face instruction with technology lessons and problem-based project development. The results of this study of the students' responses to this type of blended, problem-based learning environment may provide educators with information to be used to transform public school policy and practices. The findings of this study showed that students appreciate the opportunity to learn at their own pace and make decisions about their tasks but would like more choices and clearer expectations. This chapter will include a discussion of the findings of this study in relationship to previous literature, the limitations of the study, recommendations for further study, and implications for the field of education.

Interpretation of the Findings

The results of this study present the students' perspective of personalized online and project-based learning in the middle school setting. Previous literature related to this type of program was limited, so I reviewed literature related to specific aspects of personalized learning. In the following subsections, I will provide an analysis of the findings of this study related to the conceptual framework, including (a) Vygotsky's ZPD, (b) Kolb's experiential instructional model, and (c) motivational theories. Vygotsky's (1978) ZPD and Kolb's (2012) experiential learning theory provided me with a basis for understanding the learning principles in this blended educational program. Additionally, motivational theories found in Schunk et al. (2014) and Keller (2010)

helped me identify the nature of motivation in student-centered, project-based learning environments designed to encourage student engagement. In this study, I examined the experiences of students who were participating in a blended, project-based learning program to gain a better understanding of their experiences and perceptions.

The personal theme included the intrinsic motivation to learn versus the external challenges and the students' self-efficacy related to projects or tasks. The social theme included students' collaboration with peers and interactions with teachers related to the ZPD. The contextual theme included the instructional strategies in implementing online and problem-based learning, including the use of technology. Student responses in the interviews and on the questionnaire will be described in each of these themes.

Social Theme Related to Previous Findings

Using the conceptual framework from Chapter 1 and the literature reviewed in Chapter 2, I looked at the data and related the findings to previous studies to further explain the themes. The social issues theme included teacher guidance and peer collaboration and was related to Vygotsky's ZPD. Chou et al. (2015) stated that students were more successful when they had teachers who were flexible in content pacing, provided them with choice in content, encouraged them both academically and socially, and disciplined consistently and fairly. Similarly, Wass and Goulding (2014) stated that students showed the most academic gains when the curriculum presented was just beyond their individual ability and the teacher facilitated their learning. Student responses to the interview questions and the questionnaires indicated that students valued flexible pacing

and choice in content, but some students stated that their current program did not meet their expectations in one or both of these goals.

Similarly, Simmons et al. (2015) found that successful programs focused on changing the school environment, deepening relationships between students and teachers, and providing students with the opportunity to voice their concerns. The students in this study stated that they had good working relationships with their teachers and that the teachers were available to answer questions, but some of the students felt that their concerns about the instructional practices were not addressed and that their voices were not heard. Barnett (2016) reported that students had valuable insight and worthwhile suggestions.

Personal Theme Related to Previous Findings

The personal issues theme encompassed the students' understanding of their motivation to learn and their engagement in the learning process and was related to Bandura's self-efficacy theory. Students in this study mentioned a variety of motivating factors including making their parents proud, preparing for future responsibilities, and learning because content was interesting. Students also stated that they were more engaged in hands-on and relevant activities than when the teacher was lecturing or the content had little significance to their life goals. Whiteside et al. (2016) found that secondary education (i.e., high school) students' ability to participate in flex time to meet with teachers to discuss grades or assignments increased their connection and encouraged self-regulation. Students in the current study had flex time, but most days were required

to go to a specific class because of the number of students on teams and the need for supervision to prevent discipline issues.

Similarly, Schunk et al. (2014) stated that when students believe in their ability to successfully complete tasks they are more open to taking risks and are more likely to demonstrate grit. Students in this study described themselves as being good students and discussed their successes in projects or tasks, but when asked about their engagement in the learning process, they were often confused about the expectations and stated that sometimes they just talked to friends instead of trying to figure out what to do. Some students described being frequently off task or bored in class. Some of their confusion may have been due to the combination of constructivist theories and traditional learning. Stroet et al. (2016) found that students who participated in programs that combined traditional philosophies with constructivist philosophies showed the lowest levels of motivation. Furthermore, Henrie et al. (2015) stated that students' valued precise instructions and relevant activities and that the delivery mode was less important to their self-efficacy. Similarly, Mehta and Fine (2015) found that when programs are effective, all stake holders have a clear understanding of the direction of the instruction. Some of the students in this study seemed to lack this understanding, and others understood the intent of the program but felt that the practice did not always match the plan.

Contextual Theme Related to Previous Findings

The contextual theme covered the student response to the implementation of personalized and project-based learning and was related to Dewey's experiential learning theory. According to Balentyne (2016), students' attitudes toward math improved when

they participated in a personalized, blended learning program. Several of the students interviewed in this study stated that working through the pathways and completing projects helped them to understand content in a different way. Students also liked working with friends on projects; although, they stated that sometimes it was better to work with students they were not as familiar with to build team-building skills and focus on the project rather than socializing.

One of the challenges that educators and students face in the classroom is the rigidity of the rules or policies and procedures. Wes-Burnham and Coates (2005) stated

> At no other time in a person's life is the individual subordinated to the generic as is the norm in schools; in fact choice, diversity, and personal freedom are seen as the fundamental criteria for a civilized and meaningful life (p. 9).

Online and project-based learning attempt to resolve this challenge; however, as long as students are required to take standardized tests, there is little room for flexibility in content or assessment method. One student stated that the pathways were full of opportunity for choice but that the teacher would frequently tell students to do something other than what was on the pathway to prepare for a test. Another student stated that the projects were not related to the content classes. One of the problems I observed in this program was the fragmentation. Content classes, projects, and online learning are disjointed in such a way that students did not see any connection. Russell (2015) opined that problem-based learning requires advanced design. It seems that in an effort to encourage creativity and choice, administration has placed the responsibility to develop the curriculum, instruction, and assessment plan on the shoulders of the teachers.

Limitations of the Study

The students who participated in the interviews and completed the questionnaires volunteered to participate in this study. Some of the participants were student ambassadors who had been trained by administrators to lead tours of visitors to the building. This training included providing a detailed description of the purpose of the online and problem-based program and may have biased these students' responses. In addition to the student ambassadors, some of the participants were children of teachers in the building. These students have listened to their parent describe the difficulty of personalizing education for large numbers of students, and these conversations may have influenced their answers. There were also students who had only their own experiences to rely upon for their answers. The combination of the responses showed a variety of experiences but may be biased. Further study is needed to determine the credibility of the study.

Another limitation of the study was the small population size. Due to the time of the school year, with only 2 weeks to recruit and interview, there were only eight participants. Although the data were rich and the coding indicated saturation, a study with more participants may yield additional perspectives.

As I mentioned in Chapter 1, academic achievement beyond what was offered by the students in interviews was not the focus of this study, rather, I asked students for their perspective of their motivation to learn and engagement in the learning process while participating in the program. This study was also limited to one middle school, thereby limiting the age of the students included. Furthermore, the participants were volunteers

including students with strong opinions about the current program.

One of the problems that arose during the study was the need for significant prompting and the brevity of the interviews. Students were not as open and forthcoming as I anticipated. For some students, the need for an immediate answer was intimidating. After reviewing the data multiple times and rereading field notes and memos, I developed several recommendations for the application of the data to create educational policy and recommendations for further study.

Recommendations

Practice-Based Recommendations

Because it appeared that students had strong feelings about the way that online and project-based learning was presented and practiced, one of my recommendations would be to investigate programs where students opt-in to personalized learning through signing a learning contract. Some students felt that they were pushed into the program, and when they described their frustrations, little was done to support them. Other students really enjoyed the program and felt that they were able to work on projects they liked at a pace that was comfortable for them. If students chose to be in the online and project-based learning program, it might increase their determination to be successful in the program.

Additionally, providing students with a way to voice concerns or to brainstorm with peers to overcome some of the challenges of personalized learning may increase student grit. Previous studies indicated that teacher buy-in is significant in any type of reform (Biase, 2015; Boone, 2015; Kangas et al., 2017; Woulfin, 2015). In addition, Carson and Patterson (2015) found that most teachers believed that students needed the

opportunity to learn how to use technology to prepare for future careers. Incorporating ongoing teacher professional development will support the productive integration of an innovation educational program.

Research Recommendations

Another recommendation would be to conduct a multisite study comparing the experiences of middle school students to the experiences of high school students participating in the same type of program. Some of the difficulty that students described may be attributed to a lack of self-regulating habits that often develop with maturity. In relationship to the brevity of the interviews, it may help to provide students with some of the questions prior to the interview. This would allow the students to prepare for the interviews and might encourage more in-depth answers.

Although this study did include students from different demographics and subgroups, the data did not include academic achievement, were not evaluated, and the answers of various population subgroups (e.g., special education students, gifted students, at-risk or economically disadvantaged students, etc.) were not identified. In this study, I did not ask for any input from stakeholders other than the students. Surveying parents and guardians to determine their buy-in may provide insight about students' familial support. Additionally, teachers have a significant role in the implementation of personalized learning, so interviewing or surveying the teachers to determine their level of comfort and their confidence in the program may explain to what extent the program is applied in their classrooms.

Implications

The information gained by conducting interviews and presenting questionnaires to middle school students helped to provide some insight to their perspective of their own motivation to learn and engagement in the learning process while participating in online and problem-based learning. Information learned in this study may help teachers to design and implement flexibly paced content rich blended learning programs that increase student motivation and improve engagement.

Methodological implications from this study show that there is value in listening to students responses to educational reforms. Research studies that include student survey and interview data provide the student perspective. Students in this study stated that they liked the idea of self-paced problem-based learning, but that the need to perform on high stakes tests caused the program to be disjointed.

Theoretical implications from this study indicate that students prefer a program that is clearly defined with realistic expectations and opportunity for collaboration on meaningful and relevant tasks. This study was developed using a conceptual framework based on pedagogical learning theories, developmental science theories, and social learning theories. Students in this study stated that the pathways were often confusing and that frequently teachers changed which assignments were required.

Pedagogically students stated that the teacher was available for answering questions, but that sometimes direct instruction would have been better for content acquisition. Student 1-34 stated, “I don’t like it because some teachers, I guess they feel like they don’t have to teach when they do that.” When asked how to make the program

better, she said, “Well, I mean, teachers could like stand in front of the classroom and teach you.” Developmentally students appreciated the opportunity to choose tasks but felt that they could be trusted to design tasks of their own. Student 1-1 said,

> Being able to let students, kind of, come up with their own project and be able to [choose], they have to be able to tell the teacher, “This is where the standard comes in. This is how we [will] learn what we need to learn.”

Socially students stated that there was some opportunity to work with their peers, but that many times they were told to be quiet or to work independently on their Chromebooks. Student 1-29 stated, “We have to be quiet so the only time that we really have to talk is during lunch.”

Teachers desiring to transform their curriculum, instruction, and assessment measures by implementing problem based learning need to design the units holistically. Fragmentation between the content, the instructional methods, and the assessment models causes students to be confused, frustrated, and disengaged. To improve student buy-in, teachers should allow students to make suggestions or design projects of their own based on a set of criteria. Assessment should be authentic and should allow students to demonstrate knowledge through multiple means.

Conclusion

Although students liked the idea of having choices and working at their own pace, they experienced some frustration in the online and problem based learning environment due to the fragmented design and arbitrary implementation of the program. One of the problems I observed in this program is the fragmentation of the curriculum. Content

classes, projects, and online learning are disjointed in such a way that students did not see any connection. Students also asked how activities were related to what would be on the unit test or the state standardized test. When assessment models do not align with instructional methods, students question why they are doing what they are doing and often become frustrated or disengaged learners. If online problem based learning is to be successful, the focus on standardized tests must be addressed. It seems that in an effort to encourage creativity and choice, administration has placed the responsibility to develop the curriculum, instruction, and assessment plan on the shoulders of the teachers without providing enough time and support to plan and implement well designed units. Teachers must be given the tools needed and the time necessary to design content rich and meaningful activities that are interdisciplinary and that address current social problems.

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APPENDIX A

PARENT CONSENT FORM FOR RESEARCH

Your child is invited to take part in a research study of online project based learning. The researcher is inviting students from two classes at LGMS to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to allow your child to take part.

This study is being conducted by a researcher named Ms. Teri Bradley, who is a doctoral student at Walden University. You might already know the researcher as a teacher, but this study is separate from that role.

Background Information:
The purpose of this study is to understand students' experiences and ideas about personalized learning.

Procedures:
If you agree to allow your child to be in this study, your child will be asked to:

- complete an online self-analysis questionnaire about his or her engagement and motivation in completing the tasks that will take about 10 minutes
- Participate in an interview with Ms. Bradley that will take about 45 minutes

Here are some sample questions:

- What do you like best about working online?
- What do you like about project based learning
- How do you feel about your communication with teachers? And with your peers?
- What suggestions do you have to make personalized learning better?

Voluntary Nature of the Study:
This study is voluntary. You are free to accept or turn down the invitation and, of course, your child's decision is also an important factor. After obtaining parent consent, the researcher will explain the study and let each child decide if they wish to volunteer. No one at LGMS will treat you or your child differently if you or your child decides to not be in the study. If you decide to consent now, you or your child can still change your minds later. Your child can stop at any time. The researcher will follow up with all volunteers to let them know whether or not they were selected for the study.

Risks and Benefits of Being in the Study:
Being in this type of study involves some risk of the minor discomforts that your child might encounter in daily life, such as feeling awkward or becoming frustrated. If at any time students feel uncomfortable or want to stop an interview, the interview will end immediately. Being in this study would not pose risk to your child's safety or wellbeing

My goal is to learn from students how they feel about online and project based learning activities and suggestions they have to improve the program. I hope to be able to provide this feedback to administration at LGMS and at the Henry County district level. However, I cannot guarantee that you or your child will personally receive any benefits from this research.

Privacy:
Reports coming out of this study will not share the identities of individual participants or their families. Details that might identify participants, such as the location of the study, also will not be shared. The researcher will not use your child's personal information for any purpose outside of this research project. Data will be kept secure by assigning each student with a pseudonym (a different name to hide his or her identity). Digital audio recordings will be stored on a password protected personal computer and will be typed by an outside transcriptionist who will sign a confidentiality form. Any forms that contain identifiers will be kept in a locked file cabinet. Data will be kept for a period of at least 5 years, as required by the university. Documents will be destroyed after 5 years.

The only time the researcher would need to share your child's name or information would be if the researcher learns about possible harm to your child or someone else.

Contacts and Questions:
You may contact the researcher via phone at (404)518-8798 or email at Teri.Bradley@Waldenu.edu. You may ask any questions you have now or if you have questions later. If you want to talk privately about your child's rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210. Walden University's approval number for this study is **05-15-18-0079900** and it expires on **May 14th, 2019**.

The researcher will give you a copy of this form to keep.

Obtaining Your Consent
If you feel you understand the study well enough to make a decision about it, please indicate your consent by signing below.

Printed name of Parent _____

Printed name of Student _____

Date of Consent _____

Parent Signature _____

Researcher's Signature _____

APPENDIX B

STUDENT ASSENT FORM FOR RESEARCH

Hello, my name is Ms. Teri Bradley and I am doing a research project to learn about online project based learning. I am inviting you to join my project. I am inviting all students in your homeroom class and one other homeroom class at LGMS to be in the study. I am going to read this form with you. I want you to learn about the project before you decide if you want to be in it.

WHO I AM:
I am a student at Walden University. I am working on my doctoral degree. You might already know me as a teacher, but this study is separate from that role.

ABOUT THE PROJECT:
If you agree to be in this project, you will be asked to:

- complete an online self-analysis questionnaire about your engagement and motivation in completing the tasks that will take about 10 minutes
- Participate in an interview with Ms. Bradley that will take about 45 minutes

Here are some sample questions:

- What do you like best about working online?
- What do you like about project based learning
- How do you feel about your communication with teachers?
- What suggestions do you have to make personalized learning better?

If I get more volunteers than I need, I'll let you know if you were chosen to participate.

IT'S YOUR CHOICE:
You don't have to be in this project if you don't want to. If you decide now that you want to join the project, you can still change your mind later. If you want to stop, you can.

Being in this project might make you tired or stressed, just like student led conferences or presenting projects, but we are hoping this project might help others by sharing how you feel about online project based learning at LGMS. I want to share your suggestions and ideas.

There is no payment for being in the study.

PRIVACY:
Everything you tell me during this project will be kept private. That means that no one else will know your name or what answers you gave. The only time I have to tell someone is if I learn about something that could hurt you or someone else.

ASKING QUESTIONS:
You can ask me any questions you want now. If you think of a question later, you or your parents can reach me at Teri.Bradley@waldenu.edu. If you or your parents would like to ask my university a question, you can call 612-312-1210.

I will give you a copy of this form to keep.

If you want to join the project, please sign your name below.

Student Name (Print) _____

Student Signature _____

Date _____

Researcher Name __Ms. Teri Bradley_____

Researcher Signature _____

Date _____