CHANGES IN TEACHER PERCEPTION AND PRACTICE WHICH OCCUR WITH THE IMPLEMENTATION OF PERSONALIZED LEARNING USING TECHNOLOGY

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ABSTRACT

CHANGES IN TEACHER PERCEPTION AND PRACTICE WHICH OCCUR WITH THE IMPLEMENTATION OF PERSONALIZED LEARNING USING TECHNOLOGY

SHERI DUGGAN

In recent years, the influence of technology and educational legislation have generated a desire for a transformation in education. As schools strive to move from the traditional factory-like model of instruction in which students learn the same things at the same time and in the same way, personalized learning (PL) has emerged as a model of instruction to meet student needs. Students will move into life needing to make choices on how to set goals and objectives and solve problems successfully by finding and using the resources that are available. To prepare students for the future, classroom instruction and student learning should better match how it will be in the real world.

In the real world, jobs and activities are individualized and personalized. If the ultimate goal is to prepare students for the future, students need to know how to set goals, make choices, self-regulate, and persevere while creating an understanding and connection about the content that makes sense to the student in the world around them. Teachers need to be informed and prepared with the right tools and resources to meet student needs and be able to personalize instruction and learning to make it relevant and meaningful for students. For many teachers, they have had little to no exposure to directing instruction while personalizing learning, so the task is not a natural or easy one. While legislation and research are suggesting that PL is a model that will work in education, the shift in perspective can seem insurmountable when the traditional model has been the collective way of teaching and learning for decades.

This qualitative study was designed to explore the changes in teacher perspective and practice which occur with the implementation of PL while using technology as a platform to hold curriculum with students in a general education classroom. The researcher explored the knowledge and skills that are necessary to implement PL in the general education setting, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of PL while using technology as a tool.

The participants in this study were teachers from three different elementary schools in a large suburban school district. All of the teachers were in the first year of implementing a PL program in their classroom as a part of a grade level wide implementation at their school. The teachers participated in focus groups and then one-on-one interviews to express perceptions and share their own personal stories of implementing PL in the general education setting. The focus groups and interviews were recorded and transcribed before being analyzed. The findings were presented in table and narrative form.

The findings of the study identified the knowledge and skills the teachers perceive as necessary to implement PL, such as the teacher mindset, collaboration, content/standard knowledge, technology skills, training, student/teacher relationships, and management. The teachers shared stories to describe the changes that have occurred along with the perceived successes and challenges as teachers move to a PL model. The findings could be used to help other educators prepare for implementation of PL in their schools.

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TABLE OF CONTENTS

CHAPTER PAGE

CHAPTER PAGE

CHAPTER PAGE

CHAPTER PAGE

PAGE

Appendices

LIST OF TABLES

TABLE PAGE

LIST OF FIGURES

FIGURE PAGE

DEDICATION

First and foremost, I dedicate this work to my children, Dylan and Kayla. Dylan and Kayla, you light up my life and I am so very proud of you. When I started this process, you were just finishing 8th and 5th grades. Next year, you will both be in high school together, a freshman and a senior. I hope that I have taught you to remember who you are, follow and fulfill all of your dreams, and make your mark on this world. I will be forever grateful that you allowed me to follow my dreams of earning this degree. I dedicate this work and everything I do in education to you because every student deserves the very best education, just as the two of you do.

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Chapter 1

Introduction

It's time to stop just talking about education reform and start actually doing it. It's time to make education America's national mission. – President Barack Obama, November 4, 2009.

Background of the Study

"In recent years, there has been an increase in the popularity of personalized learning (PL) and educational technology in American K-12 schools" (Bingham, 2017, p.521). The influence of technology and educational legislation have generated a desire for a transformation in education. Personalized learning (PL) has emerged as a way to meet student needs and leverage technology to transform learning. "The concept of personalized learning has been around for some time, but the adoption of personalized learning approaches has increased significantly" (Pane, Steiner, Baird, & Hamilton. 2015, p. 4).

> Generally, conceptualized as tailoring learning experiences to meet individual students' needs and interest, personalized learning moves beyond the industrial one-size-fits-all schooling to a model that recognizes that all students have different strengths and challenges. Personalized learning as a concept is not new. Many of the elements of personalization have been discussed for decades and even centuries. The ideas of personalization can be found in the writings of 18th century philosopher Rousseau as well as in those of early 20th century educational leaders such as Dewey and Montessori. Personalization has also been the fundamental requirement of the Individuals with Disabilities Act (IDEA) for nearly 40 years. But personalizing at scale (for all students) has until recently remained an elusive goal, largely due to the time intensiveness required to provide individual instruction to all students. (Culatta, 2015)

Classrooms and the educational system have been very traditional for the general education student. Every student has had to learn the same thing at the same time in the same way in school, but then when they go out into the world, that is not how it is at all.

> For centuries the industrial education model has limited our ability to tailor educational experiences to the needs of each individual learner. A teacher in a classroom of 20-30 students has little choice but to teach everyone the same way at the same time. With few exceptions all students work on the same topic at the same time and do the same activities as the other students in the class. Students' progress to the next learning activity based on the schedule rather than on demonstrated mastery of the concept. At the end of a unit students who are still struggling will have to move onto the next unit even if they aren't ready. At the same time, students who already understand the concept will have to sit through the learning activity even though they are ready to move onto the next concept. In a sense, the traditional model keeps the schedule constant at the cost of allowing the learning to vary. (Culatta, 2015, p. 1)

Grant and Basye (2014) described a very different model of instruction as compared to the traditional model. PL is a model in which students become empowered to take control of their learning. The model moves beyond differentiation. In PL students work at their own pace and become aware of their own learning needs and interests. They become "dynamic communities of connected learners" (p. 3). Teachers become the facilitators and coaches of learning rather than the sole holders of the content and knowledge (p. 4). Students learn how to use the resources that are available to find answers and make meaning of their learning. This process is more aligned with what students will face when they move on from school. The workforce is requiring more of learners; creativity is valued more than uniformity and innovation

must be fostered for the future. A "customizable" learning model is necessary (Wolf, 2010, p. 6). This customizable learning model can be referred to as a PL model.

Changes in legislation have created a pathway to PL. National influences such as the *American Recovery and Reinvestment Act,* Race to the Top (RTTT), Common Core State Standards Initiative, *Elementary and Secondary Education Act* (ESEA) and the *Every Student Succeeds Act* (ESSA) have guided and shaped the educational direction of the country. Each influence has built upon another in moving toward the goals of the 2017 National Education Technology Plan (NETP) which ultimately give us the goals for PL.

The *American Recovery and Reinvestment Act* (ARRA) of 2009 laid the foundation for school improvement and innovation. This legislation was designed to stimulate the economy by increasing productivity and effectiveness of different sectors after the economic downturn. With a focus on long term sustainable action plans in areas such as education, outcomes would increase and stimulate growth in the area and the overall economy.

As a result of the ARRA, the State Incentive Grant Fund, also more publicly known as the Race to the Top Fund was born (GPO, 2009, p. 37804). Through this initiative the United States Department of Education (USDoE) called for reform in four areas:

- Adopting standards and assessments that prepare students to succeed in college and the workplace and to compete in the global economy;
- Building data systems that measure student growth and success, and inform teachers and principals about how they can improve instruction;
- Recruiting, developing, rewarding, and retaining effective teachers and principals, especially where they are needed most; and

- Turning around lowest-achieving schools. (USDoE, 2009, p. 2)

States were rewarded through grants for creating plans to implement these goals.

As the goal of raising the standards was set, state leaders joined forces in 2009 and collaborated with teams of teachers to create the Common Core Standards (Common Core State Standards Initiative [CCSSI], n.d.). These standards were modeled off of the most effective state standards and divided into two different sets of standards: the College and Career Readiness Standards and K-12 Standards. Teachers and school leaders looked at teaching and learning through a different lens. Engagement was perceived at a whole new level. Instructional shifts, such as different ways of questioning and the teacher acting as the facilitator of learning with balanced student/teacher talk, were expected to become the norm. Again, the standards were raised.

Along with the reauthorization of the ESEA and the creation of the ESSA, the emphasis on what students needed was expanding rapidly (USDoE, 2017). The 50-year-old ESEA is "the nation's national education law and longstanding commitment to equal opportunity for all students" (USDoE, 2015, p. 1). This reauthorization, which became known as the Every Student Succeeds Act (ESSA) allowed for more local control and therefore more support and growth for innovation.

In January of 2017, the USDoE and the Office of Educational Technology again raised the bar for education and published the annual National Education Technology Plan (NETP) update as a follow up to the 2016 NETP (USDoE, 2016). The NEPT is "the flagship educational technology policy document for the United States" (USDoE, 2017, p.1). This 2017 update, titled *Reimagining the Role of Technology in Education,* was the first of what has

become a yearly update for anyone with a vested interest in education. The previous five-year update cycle was not enough, given the rate of changes in schools, districts and states.

The 2017 NETP included five overarching goals to set a vision for education in the United States (USDoE, 2017). The first goal for learning: "All learners will have engaging and empowering learning experiences in both formal and informal settings that prepare them to be active, creative, knowledgeable, and ethical participants in our globally connected society" (p. 9). The second goal for teaching: "Educators will be supported by technology that connects them to people, data, content, resources, expertise, and learning experiences that can empower and inspire them to provide more effective teaching for all learners" (p. 28). The third goal for leadership: "Embed an understanding of technology-enabled education within the roles and responsibilities of education leaders at all levels and set state, regional, and local visions for technology in learning" (p. 42). The fourth goal for assessment: "At all levels, our education system will leverage the power of technology to measure what matters and use assessment data to improve learning" (p. 55). And lastly, the fifth goal for infrastructure: "All students and educators will have access to a robust and comprehensive infrastructure when and where they need it for learning" (p. 69). With these goals, the call to action was clear and personalizing learning was a way to meet the goals that were created.

With the NETP (USDoE, 2017), the stage was set and action was necessary. Although created as a technology plan, the goals were broad educational goals and align to the goals of PL using technology as a tool for implementation. Now the challenge was how to shift the culture and the mindset from a traditional way of teaching and learning to a personalized way of learning for all students. "For these systemic changes in learning and teaching to occur" (p. 6) there needed to be a way to move "the vision into action" (p. 6).

While the focus of this study is PL, it is important to address the background and rise of technology and its influence on it. Technology has allowed teacher preparation to be more tech driven. As technology has become more accessible, so has the access to curriculum and resources for instruction. A digital platform can now hold and organize pieces of PL plans that seemed so far out of reach for a teacher with 25 or more students in a classroom. The changes and growth in technology have allowed it to be a tool to support a PL environment.

Statement of the Problem

PL is emerging as a way for teachers and students to meet student needs (Jacobs & Alcock, 2017, Foreword, para. 4). As schools move from a factory like model to a student need based model in which creativity and innovation are fostered, educators must rethink and redesign the instructional environment. Students are individual learners who learn in different ways and need instruction that allows for a variety of approaches to learning. Teaching and learning should prepare students in purposeful and productive ways to be successful and contributing members of society (Jenkins, Williams, Moyer, George, & Foster, 2016, p. 6). Students will move into life needing to make choices on how to set goals and objectives and solve problems successfully by finding and using the resources that are available. Jacobs and Alcock (2017) wrote of the traditional model, "holding on to past and antiquated structures inhibits the efforts of teachers just entering the field; but even more important, it is undoubtedly holding back our learners" (location 2197 in digital text). To better prepare students for the future, classroom instruction and student learning should better match how it will be in the real world.

In the real world, people do not do the same thing at the same time and in the same way. Jobs and activities are individualized and personalized. Teachers need to have the knowledge, support, and resources to properly integrate personalization of learning to ensure that students are

best prepared as learners of today and the future (Jenkins et al, 2016, p. 13). If the ultimate goal is to prepare students for the future, students need to know how to set goals, make choices, self-regulate, and persevere while creating an understanding and connection about the content that makes sense to the student. "Students deserve learning experiences tailored to their needs and that make the most of teachers' time with students" (Bill & Melinda Gates Foundation, 2017). Teachers need to be informed and prepared with the right tools and resources to meet student needs and be able to personalize instruction and learning to make it relevant and meaningful for students. They need to model and guide a different type of learning environment. "We need to do things differently, not just better" (Bill & Melinda Gates Foundation, 2017, p. 1).

For many teachers, they have had little to no exposure to directing instruction while personalizing learning, so the task is not a natural or easy one. This concept of PL is very different from how they learned in school and how they learned to teach students (Jenkins et al, 2016, p. 13). While legislation and research is suggesting that PL is a model that will work in education, the shift in perspective can seem insurmountable when the traditional model has been the collective way of teaching and learning for decades.

Purpose of the Study

The purpose of this phenomenological study is to explore the changes in teacher perspective and practice which occur with the implementation of PL while using technology as a tool. Through focus groups and interviews of teachers currently implementing PL in the classroom, the researcher will explore the pieces of instruction and practice that personalize learning in the general education setting, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of PL while using technology as a tool. The results of

the study will help other educators better understand PL from the teacher perspective and see if it is an attainable model for all students including those in a general education classroom.

Research Questions

1. What knowledge and skills do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?
2. What changes have teachers experienced as they have moved from a more traditional model to a personalized learning model?
3. What are the perceived successes regarding the implementation of personalized learning with technology?
4. What are the perceived challenges regarding the implementation of personalized learning with technology?

Elements of the Study

This study is a qualitative study in which the researcher will use a qualitative phenomenological analysis. The research will be captured through focus groups and interviews with teachers that have experienced the phenomenon of PL in their own classrooms. The target population of teachers includes fifth and/or sixth grade teachers at three different elementary schools, all a part of the same school district in the Phoenix Metropolitan area. The specific schools were chosen because all three are implementing a PL model in the school with fifth and/or sixth grade students. All three of the schools are using an instructional model from the Summit Learning program and are in the first year of implementation of the model. The program provides a learning platform that holds curriculum and professional development for staff at no cost to the school or district (Summit Learning, 2017, p. 17).

All 21 teachers who are participating in the PL implementation in the specific district were invited to be a part of the study. Of the 21 teachers invited to participate, 21 agreed to participate in the focus groups. As a follow up to the focus groups, eight teachers participated in self-structured in-depth interviews. The teachers were chosen as a purposive and convenience sampling; purposive because of the common experience with the phenomenon of PL and convenience because of opportunities made available through the researcher's professional network. The sample is also a homogenous sample because the teachers all share the characteristics of implementing PL, the key criteria needed for this study.

Both focus groups and interviews will be conducted from February to March. The focus groups will be facilitated first and then interviews will be scheduled as a follow-up to the focus groups. The interviews will include elements that naturally surface during the focus group discussions.

Definition of Terms

Accessibility. Accessibility refers to supports that are in place to allow for learning for all students. This includes support and enabled access for learning needs regardless of ability to include students with disabilities and English language learners and those from disadvantaged backgrounds. Technology can support content and educational activities environments to allow for differentiation and accommodations (USDoE, 2017, p. 5).

Differentiation. Instructional approaches may vary according to student needs and learning preferences, but the learning goals are all the same regardless of the approach (USDoE, 2010, p. 12).

Direct instruction. Direct instruction is teacher lead and teacher chosen instruction that is purposefully chosen for students. This model of instruction often includes more teacher talk than student talk (Zhang et al., 2016, p. 202).

Equity. Equity is increasing access for all students' educational learning opportunities. Equity refers to closing the achievement gap and barriers that students face because of "race, ethnicity, or national origin; sex; sexual orientation or gender identity or expression; disability; English language ability; religion; socioeconomic status; or geographical location" (USDoE, 2017, p. 5)

Fidelity of implementation. Fidelity of implementation is how well the program or element being studied is implemented as measured against the original program design (Gresham, MacMillan, Beebe-Frankenberger, & Bocian, 2000).

Individualization. Students may move through the content and learning goals at a different pace. When individualizing instruction, students may spend more time on areas of need and spend less time on content that has already been mastered (USDoE, 2010, p. 12).

Perception. "The processes that organize information in the sensory image and interpret it as having been produced by properties of objects or events in the external, three-dimensional world" (Gerrig, Philip, & Zimbardo, 2002, p. 1).

Personalized learning (PL). PL includes differentiation and adjustment of instruction, based on learning needs and preferences. The pace and the content may vary according to what the students need. Personalization includes both differentiation and individualization (USDoE, 2010, p. 12).

Small group instruction. Small group is when a group of students meet with a teacher or instructor for instruction specific to that group of students (Gast & Doyle, 1991).

Acronyms Used

ARRA: *American Recovery and Reinvestment Act* of 2009

ESEA: *Elementary and Secondary Education Act*

ESSA: *Every Student Succeeds Act*

IPA: Interpretive Phenomenological Analysis

NETP: National Education Technology Plan

PBL: Project Based Learning

PD: Professional Development

PL: Personal Learning or Personalized Learning

PLP: Personal Learning Plan

USDoE: United States Department of Education

Limitations

Limitations are out of the researcher's control but may impact the results of the study.

1. Teachers have different backgrounds and experience teaching, and therefore, different skill sets. These differences could cause threats to validity of the study findings.
2. The study included interviews of teachers implementing PL in their classrooms. When teachers know they are being studied, a "Hawthorne effect" can occur. When the teachers know they are part of a study, they may alter their behavior and respond differently than they would otherwise.
3. Teachers have different amounts of support and training. While the scope was limited, the perceptions could vary from school to school and classroom to classroom.
4. Teachers have a different ability to implement PL.

5. Actual behaviors will not be measured, but only perceptions of these behaviors, from the teacher perspective.

Delimitations

Delimitations are the "characteristics that limit the scope and boundaries" of the study (Simon & Goes, 2011, p. 2). These are in the researcher's control and result from the researcher's choices.

1. The study focused on a convenience and purposive sampling of teachers implementing PL in their classrooms. The level of support and professional development (PD) given to teachers with regard to PL varies, and therefore the fidelity of implementation could vary from classroom to classroom. This could limit the generalizability to other classrooms.
2. The size of the sample is relatively small and the findings derived from the sample data may not generalize to other settings.
3. The time frame of this study is limited and therefore the findings may not generalize, causing a time period delimitation.
4. The location of the study is in classrooms in a major metropolitan area of Phoenix, Arizona. Due to the limited population, the study findings may not generalize to other classroom locations.
5. The study will include teachers at schools that are implementing PL in the classrooms. It will not include administrator, parent, or student perspectives.
6. The study will only include teacher perspectives and not student outcomes. The results may not generalize to student outcomes.

7. Those teachers participating in focus groups and interviews were in year one or two of PL implementation as a part of a school initiative for the grade level in which they taught. The results may or may not generalize to other teachers' implementation practices.

Assumptions

1. Although chosen from schools that are implementing PL, the teachers who participated in this study have attended multiple days of structured professional development through Summit Learning and are implementing PL in their classrooms.
2. Those teachers interviewed answered questions to reflect their professional opinions.
3. Those teachers interviewed answered questions openly and honestly.
4. Teachers will be able to accurately convey the perceptions of changes to instruction with the implementation of PL.
5. Students will find success in a PL classroom.

Significance of the Study

The outcome of this phenomenological study will help educators understand the changes in teacher perspective and practice which occur with the implementation of PL while using technology as a tool. The researcher will explore the knowledge and skill that are necessary when implementing personalized learning in the general education setting, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of PL while using technology as a tool.

The results of the study will be used to help administrators and teachers facilitate new implementation of PL in schools and classrooms. While the challenge of moving toward a PL

model may seem overwhelming, the teacher perspective could help break down the barriers to implementation and provide a roadmap for successful implementation, providing factors to consider while planning and implementing PL and provide a roadmap to successful implementation. The results of the study will help other educators better understand PL from the teacher perspective and see it as an attainable model for all students including those in a general education classroom.

Summary

PL is a model of instruction that is different than the traditional model that has been used in classrooms. In this chapter, the background and history of PL were introduced along with the statement of the problem and the purpose of the study. The research questions and the elements of the study were detailed, as well as the terms and acronyms that will be used. The limitations, delimitations and assumptions were listed before the significance of the study was explained.

Chapter One set the stage for the rest of the chapters. Chapter Two contains a review of the existing literature, divided into 16 sections. Chapter Three describes the research design and methodology used in the study; details of the study sample and selection, instrumentation, data collection, and analysis procedures will be included. Chapter Four includes the findings and analysis of the results of the study. Chapter Five presents the summary, conclusion, recommendations for practical application of the findings and further study, and implications of the research.

Chapter 2

Review of the Literature

Introduction

The purpose of the study is to explore the changes in teacher perspective and practice which occur with the implementation of personalized learning while using technology as a tool. The goal of the research is to help educators understand how PL can be implemented in classrooms and the effect it has on instruction. In studying the teacher perspectives of PL, it is important to understand the concepts and research behind it while looking at the perspectives in practice.

In this chapter, the researcher explores the existing literature on PL. The chapter begins with background and research on what PL is and why it is emerging as a model for general education classrooms. The researcher explores literature that compares traditional models to personalized models and then the difference between personalization, differentiation, and individualization. Technology as a tool for personalization as well as details of commonalities in practice, elements of PL, and instructional strategies are highlighted. Finally, literature related to the importance of teacher buy-in and PD in the implementation of PL is addressed.

Background

There has been a global shift from industrialization to personalization that is impacting more than just education. According to Kallick and Zmuda (2017) the school environment has not been able to keep up with the shift. They write, "We remain in a culture that promotes one curriculum for all, one per age group and one grade at a time, and one set of tests to determine learning" (Chapter 1, para. 1). PL was once a tutor-like model for an individual struggling student, but is now considered a way to meet student needs on a larger scale.

The phrase "personalized learning" is woven into national educational plans. "As referenced in the Every Student Succeeds Act (ESSA) and the National Educational Technology Plan (NETP), personalized learning is the new focus in many K–12 learning environments" (Basham, Hall, Carter, & Stahl, 2016, p. 126). The NETP (USDoE, 2017) offered a description of PL,

> Personalized learning refers to instruction in which the pace of learning and the instructional approach are optimized for the needs of each learner. Learning objectives, instructional approaches, and instructional content (and its sequencing) may all vary based on learner needs. In addition, learning activities are meaningful and relevant to learners, driven by their interests, and often self-initiated. (p. 9)

Although the PL movement has gained momentum in recent years, it is not a new concept in education.

Keefe and Jenkins (2002) shared, "Personalized learning has been developing as an instructional model since the mid-1970s" (p. 450). PL began as a way of meeting the needs of students who were struggling, more like a tutoring model in which there was an instructor or teacher for every student. The current model and new direction for PL includes a wider range of students in classroom settings. With the new direction, students of many different ability levels could have learning personalized to meet their needs.

The recent movement toward PL "was introduced because of increased awareness among researchers about the diversity of students from various aspects such as learning styles, attitudes, interests, behavior, thinking skills, ability to learn, and so on" (Sahabudin & Ali, 2013, p. 711). Research highlighted that taking these aspects into consideration while planning and implementing education would help teachers' better meet student needs and students retain more

of the information that was available. Bishop, Downes, & Nagle (2017) wrote that personalization "is a reform agenda sweeping across much of the United States" (p. 1). The media and educational policy have drawn attention to the needs and outcomes of education by increasing the information shared with the public (Banister, Reinhart, & Ross, 2014; USDoE 2009, 2012, 2015).

Although not entirely new to education, PL could be considered something of a phenomenon in recent years. PL is viewed as a possible strategy and model in a regular classroom full of learners. The strategy has emerged as a whole-class instructional model for meeting student needs in a variety of classrooms and settings. When looking at what students will need for the future, Lauren Resnick (1997) wrote,

> Today's high-performance workplace calls for the same kind of person that Horace Mann and John Dewey sought: someone able to analyze a situation, make reasoned judgments, communicate well, engage with others to reason through differences of opinion, and intelligently employ the complex tools and technologies that can liberate or enslave, according to use. What is more, the new workplace calls for people who can learn new skills and knowledge as conditions change—lifelong learners, in short. (p. 258)

Traditional Instructional Models

To better understand PL, a "traditional model", or a model previous to PL, must be described. Heidi Hayes Jacobs (2010) began the first chapter of her book *Curriculum 21: Essential Education for a Changing World*,

> I often wonder if many of our students feel like they are time traveling as they walk through the school door each morning. As they cross the threshold do they feel as if they

are entering a simulation of life in the 1980s? Then, at the end of the school day, do they feel that they have returned to the 21st century? (p. 7)

In *The Shifting Paradigm of Teaching: Personalized Learning According to Teachers,* Jenkins et al. (2016) described "traditional, practice-based education—often referred to as the industrial or factory model—values standardizing inputs for standardized outputs from which students are sorted" (p. 6). Teachers taught the same thing every year and students learned the same things at the same time in the same grade level. It was acceptable for teachers to use the same materials in the same way for 10 or more years.

> Historically, public schools have had a one-size-fits-all mentality, meaning that the teachers in public schools have utilized instructional approaches that include large group instruction and grade level expectations. If students are not meeting the learning expectations or keeping up with the large group instruction, then something was thought to be wrong with the student. This thought process echoes Carol Dweck's (2006) Fixed Mindset Theory; those with a Fixed Mindset believe their capacity for skills, intelligence, and learning are traits people are born with and cannot be changed. Therefore, they often blame others for their setbacks. Moreover, the problem includes students being dissatisfied and disengaged in their learning. (Dinkins, 2017, p. 3)

A traditional style or traditional model, was that of a controlled nature. While this traditional style and way of running a classroom was widely accepted as the norm, research shows that overall learning can suffer along with student motivation and engagement when teachers use an instructional style that is controlling. This type of style can limit opportunities for autonomy and choice (Reeve, 2009). PL moves away from a controlling way of instruction and moves toward a more motivating and engaging model.

Another aspect of the traditional style is that educators have tried to set an error-proof environment. They have set expectations and standards at a place that all students can meet the target and feel success. The goal was mastery of the test, not necessarily the overall learning. "They often reduce task difficulty, overlook errors, de-emphasize failed attempts, ignore faulty performances, display 'perfect papers', minimize testing and reward error free performance" (Clifford, 1990, p. 23). Classrooms and teachers were successful based on how many students had perfect performances. As these aspects were also widely accepted, Clifford (1990) wrote of the change,

> It is time for educators to replace easy success with challenge. We must encourage students to reach beyond their intellectual grasp and allow them the privilege of learning from mistakes. There must be a tolerance for error-making in every classroom, and gradual success rather than continual success must become the yardstick by which learning is judged. (p. 23)

According to Jenkins et al. (2016), "standardized inputs no longer provide the necessary knowledge, skills, and dispositions for career success" (p. 6). The job force has changed over the years at a much faster pace than our schools and it is time to better prepare students for the future. It is time to teach students to persevere and work through obstacles.

Personalization/Differentiation/Individualization

So the question arises, what does personalization really mean anyway? Is it the same as differentiating? Teachers have been differentiating for ages. An example of what could be called differentiating is differentiated reading groups at the elementary level. The teachers would do essentially the same thing with students, while using different leveled materials based upon the student reading levels. "Differentiating, personalized learning, individualizing,

customizing, tailoring, adapting, and accommodating are just some of the terms that have been used in the past and present to describe models that address each student's strengths, needs, and interests" (Johnsen, 2016, p. 73). While these models might accomplish the objectives, there is more to PL. "Although personalized learning is defined and operationalized in diverse ways, efforts have been made to distinguish it from related teaching practices such as differentiation and individualization" (Netcoh, 2017, p. 384).

Barbara Bray and Kathleen McClaskey (2013) created a chart (Figure 1) to compare these ideas of personalization, differentiation and individualization. With much research in this area, the authors delineate the aspects of these overlapping ideas. Perhaps the most distinguishing piece of the difference in ideas lies in the focus of the classroom. In PL, the classroom model is learner-centered. The other models, differentiation and individualization, highlighted in this figure are teacher-centered. The first column, the personalization column, highlights qualities and ideas for learners, whereas the second and third columns, the differentiation and individualization columns highlight qualities and ideas for teachers. This difference in learner focus versus teacher focus is the main difference in personalization.

Personalization	Differentiation	Individualization
The Learner…	**The Teacher…**	**The Teacher…**
drives their learning.	provides instruction to groups of learners.	provides instruction to an individual learner.
connects learning with interests, talents, passions, and aspirations.	adjusts learning needs for groups of learners.	accommodates learning needs for the individual learner.
actively participates in the design of their learning.	designs instruction based on the learning needs of different groups of learners.	customizes instruction based on the learning needs of the individual learner.
owns and is responsible for their learning that includes their voice and choice on how and what they learn.	is responsible for a variety of instruction for different groups of learners.	is responsible for modifying instruction based on the needs of the individual learner.
identifies goals for their learning plan and benchmarks as they progress along their learning path with guidance from teacher.	identifies the same objectives for different groups of learners as they do for the whole class.	identifies the same objectives for all learners with specific objectives for individuals who receive one-on-one support.
acquires the skills to select and use the appropriate technology and resources to support and enhance their learning.	selects technology and resources to support the learning needs of different groups of learners.	selects technology and resources to support the learning needs of the individual learner.
builds a network of peers, experts, and teachers to guide and support their learning.	supports groups of learners who are reliant on them for their learning.	understands the individual learner is dependent on them to support their learning.
demonstrates mastery of content in a competency-based system.	monitors learning based on Carnegie unit (seat time) and grade level.	monitors learning based on Carnegie unit (seat time) and grade level.
becomes a self-directed, expert learner who monitors progress and reflects on learning based on mastery of content and skills.	uses data and assessments to modify instruction for groups of learners and provides feedback to individual learners to advance learning.	uses data and assessments to measure progress of what the individual learner learned and did not learn to decide next steps in their learning.
Assessment **AS** and **FOR** Learning with minimal **OF** Learning	Assessment **OF** and **FOR** Learning	Assessment **OF** Learning

Figure 1. Personalization v. differentiation v. individualization chart (v3). Adapted from A step-by-step guide to personalized learning, by B. Bray & K. McClaskey, 2013, *Learning & Leading with Technology, 40*(7), 12-19. Reprinted with permission (Appendix A).

"The difference between individualization and personalization lies in control. We can individualize education by imposing it, but students choose to personalize their own learning. Their volition drives their inquiry" (Clarke, 2013. p. 6).

Technology as a Tool

Although there are different ways to implement PL, this study focuses on teachers that are using technology as the platform to hold curriculum as a part of the implementation of PL. While the platform and curriculum are just one piece of the PL model, the researcher must acknowledge that technology does play a part in the implementation and the shift of instructional practices.

According to John King, the United States Secretary of Education, "One of the most important aspects of technology is its ability to level the field of opportunity for students" (USDoE, 2017, p. 3). Technology is becoming an expectation. Plans for effective student level technology integration can be found at national, state, and district levels. "This represents a trend in K-12 education toward altering the structure and design of schools to better serve the individual needs of students, as well as a push to change the tools of instruction to better incorporate technology" (Bingham, 2017, p. 522).

Bingham (2017) also wrote of PL "gaining traction as theory of action in high-tech school models toward improving students' academic outcomes" (p. 523). Schools are moving toward the 1-to-1 model, in which each student has a device that could include a laptop, Chromebook, smartphone, or tablet (Ash, 2013, p. 34). "While students may be tech-savvy, they need to be taught how to use those skills in an educational and professional setting" (Ash, 2013, p. 34). There is more to using technology in education than games and web searches for information. The Bill and Melinda Gates Foundation tells us that PL "is also meant to provide

high levels of choice and flexibility for both students and teachers through the use of digital resources and online curricula" (Bingham, 2017, p. 523). It is imperative that students are taught how to properly find and use these resources instead of taking for granted that they can do it on their own.

In *Continued Progress: Promising Evidence on Personalized Learning,* Pane et al. (2015) wrote, PL "has increased significantly in recent years due in part to rapid advances in technology platforms and digital content" (p. 4). More specifically, Basham et al. (2016) explained, "In the last 5 years, various innovations have taken place in the technology sector, triggering trends and shifts in the practice of education" (p. 126). Almost every student carries a smart device with them all day long (Basham et al., 2016, p. 126). These devices, along with a variety of tablets, laptops and other devices given students access to information wherever they can find a device. Teachers are challenged to keep up with the technological knowledge that the students already have from growing up in this technological society.

Ertmer (2005) examined teachers' pedagogical beliefs and the relationship to their technology practice, and suggested that understanding these beliefs were instrumental in building PD to move technology integration forward. Ertmer also wrote, in her 2010 study with Ottenbreit-Leftwich, that teachers are expected to "use technology in ways that extend and increase their effectiveness" for 21st century learning to occur (p. 257). Many must change their way of teaching. For teacher change to occur the key variables of knowledge, self-efficacy, pedagogical beliefs, and culture must be addressed (Ertmer & Ottenbreit-Leftwich, 2010, p. 258-265).

"Findings indicate that personalized learning environments require more than technology, that the technology itself is simply a tool to support implementation" (Basham et al., 2016,

p. 126). PL is not defined by technology and can be implemented with or without technology as a tool; however, all of the teachers in this study do use technology to hold, access, and engage in the curriculum with students.

Commonalities of Personalized Learning

As PL has emerged as a model in recent years, different models, frameworks, and supporters have also emerged. While each model has its own aspects, commonalities and overlapping can be found. Kallick and Zmuda (2017) defined four attributes of PL: voice, co-creation, social construction and self-discovery. The first attribute is the voice. The students have a say and are "valued participants" in their own learning. Students should acknowledge their own ideas, the ideas of others and how the ideas shift over time. The second attribute, co-creation, allows students to work with teachers and other students to set objectives and outline a plan to achieve a set outcome. The third, social construction, allows students to foster relationships and collaboration. Students put ideas together to move from individual pieces and knowledge to a "whole". The fourth attribute is self-discovery, through this process, students develop a deeper understanding of themselves as learners. According to the authors, the elements of PL can occur with a genuine commitment to this framework.

Summit Learning (2017) has a model of PL in which "after a careful review of the most prominent competency and curriculum frameworks, four student learning outcomes have emerged" (p. 15). As seen in Figure 2, Summit breaks its framework into the four areas of cognitive skills, content knowledge, habits of success, and sense of purpose. According to the authors, cognitive skills include: "interdisciplinary, higher-order thinking skills", content knowledge includes the "curriculum across the all curricular areas", habits of success includes

the "behavior and mindsets that students should have to be successful", and the sense of purpose includes "self-knowledge, values, relationships, and a credible path" (p. 15).

Figure 2. Summit learning student outcomes. Adapted from *The science of Summit*, by Summit Learning, 2017.

In *Shifting the Paradigm of Teaching*, Jenkins et al. (2016) found PL to include the following elements:

- Instruction is aligned to rigorous college- and career-ready standards and the social and emotional skills students need to be successful in college and career.
- Instruction is customized, allowing each student to design learning experiences aligned to his or her interests.
- The pace of instruction is varied based on individual student needs, allowing students to accelerate or take additional time based on their level of mastery.

- Educators use data from formative assessments and student feedback in real-time to differentiate instruction and provide robust supports and interventions so that every student remains on track to graduation.
- Students and parents have access to clear, transferable learning objectives and assessment results so they understand what is expected for mastery and advancement. (p. 3)

The Bill and Melinda Gates Foundation has become a supporter of PL. The foundation funded a study on PL and published the results. The authors of the published results of the study, Pane et al. (2015) shared that leaders in the field of PL generally look for commonalities in the practice:

1. Systems and approaches that accelerate and deepen student learning by tailoring instruction to each student's individual needs, skills, and interests;
2. A variety of rich learning experiences that collectively prepare students for success in the college and career of their choice; and
3. Teachers' integral role in student learning: designing and managing the learning environment, leading instruction, and providing students with expert guidance and support to help them take increasing ownership of their learning. (p. 2)

The researchers claimed a commitment to continuous learning as the reason for the study.

Regardless of the model or specific view of PL, "Educational institutions deliver the outcomes they are designed to produce. The beliefs that decision-makers hold about human potential directly impact how an education system is set up and, consequently, the outcomes that all children are able to attain" (Summit Learning, 2017, p. 11).

Instructional Strategies of Personalized Learning

Instructional practice looks different in a PL setting. The way student ability is viewed, role of the teacher as well as the look of the classroom environment, are viewed differently than a traditional classroom, resulting in a different relationship in a PL classroom. Galloway and Lasley (2010) described the general essence of creating a more personalized experience for students in schools.

> Effective teaching practices of today are built on the recognition that new information must be crafted on prior knowledge and that teachers must know their students in a more personalized way. This is a stage of awareness that teachers must bring to the overall process of how students learn. (p. 275)

PL could affect how students learn and are prepared to meet learning goals of all kinds.

As students crave more content and engagement, the level of learning can now shift. "Instead of minimum criteria, we must define multiple criteria (levels of minimum, marginal, average, good, superior and excellent achievement) and we must free students to choose criteria that provide optimum challenge" (Clifford, 1990, p. 23). Clifford (1990) further elaborated that, "Constraint gives a person the desire to escape; freedom gives a person the desire to explore, expand and create" (p. 23).

Learner ability. "All students have unique strengths, experiences, and interests" (Culatta, 2015). PL builds on these student driven needs. "We must encourage students to reach beyond their intellectual grasp and allow them the privilege of learning from their mistakes" (Clifford, 1990, p. 22). This is a balance. When implementing PL, "it is important to be realistic in terms of the learner's ability to evolve as a competent, adaptive, goal-oriented and motivated learner" (Karmeshu, Raman, & Nedungadi, 2012, p. 587).

In *A Step-By-Step Guide to Personalize Learning*, Barbara Bray and Kathleen McClaskey (2013) focused on the learner more than the teacher while discussing PL and according to them,

> Personalized learning is built on the idea that the learner:
>
> - Knows how he or she learns best
> - Self-directs and self regulates his or her learning
> - Designs his or her learning path
> - Has a voice and choice about his or her learning
> - Is a co-designer of curriculum and learning environment
> - Has flexible learning anytime anywhere
> - Has high-quality teachers who are partners in learning
> - Uses a competency-based model to demonstrate mastery
> - Is motivated and engaged in the learning process. (p. 14)

"When students are allowed more freedom, they are likely to take on more responsibility as well" (Ash, 2013, p. 32). Wolf (2010) stated,

> Personalization provides the opportunity to dramatically redefine the very concept of equity: from one that goes beyond providing all students with the same educational inputs and opportunities to one in which all students have access to a unique learning experience (and resources) based upon their individual needs. (p. 9)

Students get involved in their own learning process, teachers get to know specific, strengths, weaknesses, and interests of their learners and students become independent learners who can set goals, measure, and buy into their own learning (DiMartino, Clarke, & Wold, 2001).

Teacher role. Teachers move from the role of the holder and giver of the knowledge to become the facilitator, guiding and supporting learners to find and make meaning of the knowledge (Zmuda, Curtis, & Ullman, 2015, p. 97).

> In a personalized learning environment, teachers are no longer the keepers of knowledge, basing instruction on standardized curriculum at one level. Instead, a teacher's role is to manage the resources and supports that students need, when they need them, in order to reach mastery. In personalized learning classrooms, teachers adjust instruction daily—sometimes even more frequently—based on identified individual needs instead of creating highly structured lesson plans days in advance. (Jenkins et al., 2016, p. 6)

One specific practice that enhances PL is feedback. Kim (2012) stated, "feedback is especially critical for personalized learning." Specific, timely and meaningful instructional feedback from the teacher to the student can be a powerful motivator for improving performance. Feedback helps a student understand what was learned or not learned and the why behind the learning (Clifford, 1990; Ilgen, Fischer, & Taylor, 1979; Larson, 1984; Sadler, 1989). In a PL classroom you will see a teacher giving feedback in a variety of ways with individual and small group feedback being delivered throughout the learning time. The move away from whole group instruction allows for the move to regular purposeful feedback for all students.

Other strategies such as goal setting and proficiency-based assessments are key as well. Teachers coach students in setting clear and measurable individual goals. The goals are based on specific learning objectives and projects. In a PL environment, assessments measure those goals and learning objectives and might look a little different for every learner. "Proficiency-based assessment opens the way for more personal, flexible, and student-directed learning" (Bishop et al., 2017, p. 1). Assessments guide the learning and allow for those individual goals and

therefore activities to meet the goals and objectives. Without assessments and individual goals and learning objectives, PL cannot occur.

Real world readiness skills. While students work toward individual goals and objectives, qualities beyond cognitive ability determine success. Duckworth and Yeager (2015) wrote of the qualities of "self-control, grit, growth mind-set" as well as "gratitude, emotional intelligence, social belonging" and "curiosity and open-mindedness" (p. 237). These qualities become more apparent as students have the opportunity to work on their own instead of following along and being compliant with instruction.

Classroom environment. A PL classroom in an elementary school will likely appear quite different than a traditional classroom. In the PL classroom, teacher strategies are directly tied to student strategies and the teachers move to a more secondary role. Facilitation becomes the focus as opposed to the way of the teacher as the leader from previous ways (Grant & Basye, 2014). The physical classroom in a PL environment will look different from a traditional classroom to allow for these student and teacher strategies.

Basham et al. (2016) said, "it has become evident that well-designed personalized learning environments can transform both teacher and student behavior and encourage students' academic growth in ways that might not be possible without these advances" (p. 127). As shown in Figure 3, a PL elementary classroom could have a place, such as a horseshoe table, for planned small group instruction. The tables and desks could be raised for standing or stools or lowered for sitting and working on the ground. There could be a variety of types of chairs arranged in different ways to accommodate individual, partner or small group learning and activities.

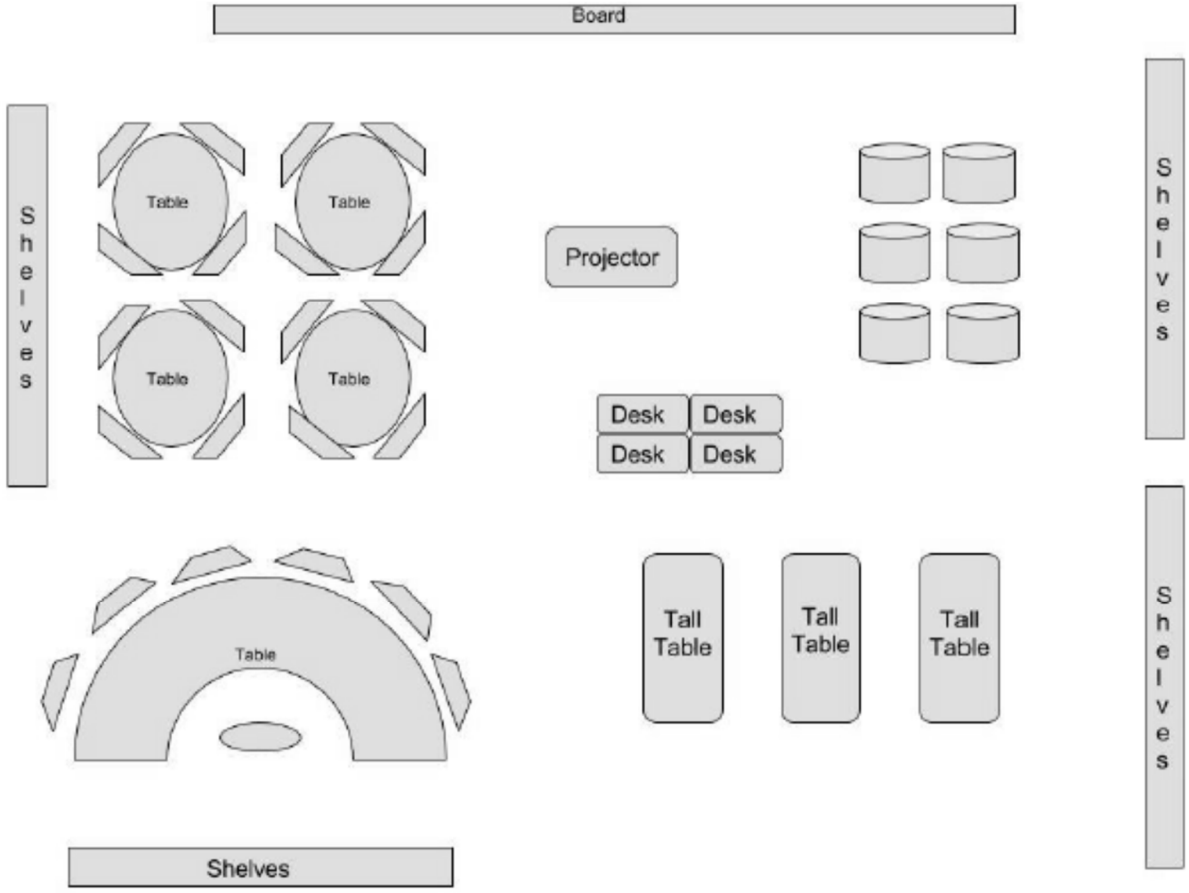

Figure 3. Physical elementary classroom in a PL environment. Adapted from *Flexible seating in personalized learning*, by L. Barr, 2018. Retrieved from https://www.edelements.com/blog/flexible-seating-in-personalized-learning

A PL classroom will provide a space with "tendencies towards the students such as cognitive style, thinking style, learning style and many more" (Sahabudin & Ali, 2013, p. 711). This is where classrooms look different than they have in the past, and you will see specific places in a classroom for elements of PL. You will see an environment providing for "frequent check-ins, supporting students in progressing through their plans, and offering a suggestion here and there as to how a student can succeed or resolve a dilemma; we are engaged in a constant process of mentoring" (Zmuda et al., 2015, p. 113). "Personalizing learning refers to the structures, policies, and practices that promote relationships based on mutual respect, trust,

collaboration, and support" (Breulin, Mann, Kelly, Cimmarusti, Dunne, & Lieber, 2005, p. 24). This can be evidenced in the structure and layout of PL classrooms.

Relationships. When the learner ability is observed in a different way, the teacher role has shifted and even the physical look of the classroom has changed, a shift in relationships occurs. The breakthrough idea is "the striking shift in the teacher-student team. In traditional learning, the teacher is the leader and the student is a mostly passive recipient. In personalized learning, the student is the leader, and the teacher is the activator and the advisor" (Gates, 2017). When the teacher can activate and advise the student, learning is empowered and true engagement can occur. "Students with a sense of belonging in school feel socially connected, supported, and respected. They trust their teachers and their peers, and they feel like they fit in at school" (Summit Learning, 2017, p. 49). The shift in relationships between the teacher and student is described by Karmeshu et al. (2012),

> Innovation like personalized learning is not based on a product, technology, or system that can easily be installed or configured. Such type of innovation entails changing the relationship between teachers, students and parents and this necessitates empowering and training teachers who are responsible for implementing such a systemic change. (p. 586)

Teacher Buy In/Professional Development

"Teachers are key to personalized learning. To adopt educational innovations, teachers require extensive learning and training opportunities" (Karmeshu et al., 2012, p. 586). Since PL is an innovation that "requires a major change in teaching practice" (p. 586), teachers will need larger support than a shift that required less change in teaching practice.

> Since teachers play a pivotal role in implementing innovations, their perception of the innovation will strongly influence this process. In other words, for the innovation to be

> successful, the personal willingness of teachers to adopt and integrate innovation into their classroom practice is crucial. (Karmeshu et al., 2012, p. 586)

PD and continued support through teams and administration continues the personal willingness to sustain an innovation such as PL.

There are risks involved with implementing PL. Teachers no longer have full control of the entire learning environment and will have to build and depend on student motivation. When testing and accountability is a part of the culture, educators may be hesitant to take educational risks of this nature. Successful implementation of PL will depend on a "teacher's ability to be organized enough to have 30 students working at the same time on different concepts, different ways to show that they've learned the concepts, and different modes, models, and methods of learning" (Dinkins, 2017, p. 9). When looking at a change in teaching and learning style such as PL, teacher buy-in and PD is critical.

Research indicates that teacher PD is most successful when it is spread over time. This can allow a teacher to process and make meaningful connections of how what they are learning can work in a current situation (Brandsford, Brown & Cocking, 2000). Tucker, Wycoff, and Green (2017) provided details. "Things to consider when planning to shift from a group model to an individual one:

- Allowance for learning modes
- Maintenance of connectedness through asynchronous learning
- Assessment for understanding and feedback loop
- Organization of workflow and feedback loop" (p. 172).

This list is inclusive of things to consider for both teacher PD and student learning. The goals in PD would be to ensure the teacher is brought in prepared to help the learners engage with the materials in the most meaningful way.

In *Implementing Personalized Learning*, Johnson (2016) described successful implementation of PL to include:

> Clearly defined practices that were a part of the change, top-down and bottom-up support, professional development for all involved in the change, development of a successful model within the school district, professional development modeling the desired instructional practices, teacher choice in selecting the classroom changes based on their current practices with opportunities for moving toward more advanced practices, material resources to implement the desired changes such as assessments and aligned learning activities that were above and below grade level, follow-up support from within and outside of the classroom setting, ongoing professional development (e.g., progressive learning opportunities to reinforce and expand on classroom practices, observations in other teachers' classrooms who were personalizing their learning experiences for students), the provision of time to adapt classroom learning activities, attention to individual successes, and the implementation of changes within a risk-free environment with no retributions. (p. 73)

Research shows, PL is not an easy idea to implement but with the right support and resources can be an effective way to meet student needs.

Implications for Personalized Learning in Practice

PL has the potential to change the education system as it has been known. It will "revolutionize testing and learning" (Duncan, 2013, p. 1). According to the NETP (2017),

learning will take place when the pieces are put together (p. 6). Figure 4 shows a summative representation of how learning will be maximized when leadership sets the vision, teachers put the vision into practice and assessments are used to understand the learning progress with resources, accessibility, and technology in place to support the system.

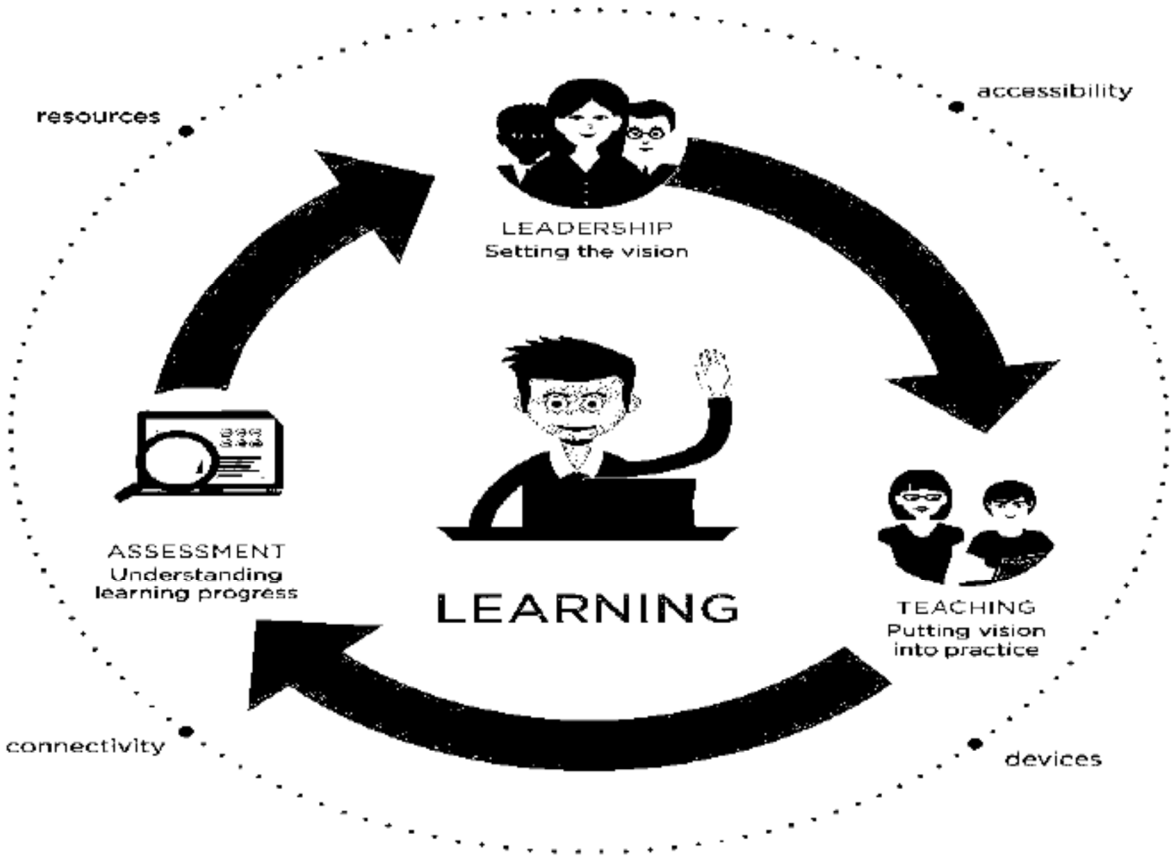

Figure 4. Fitting the pieces together: Infrastructure. Adapted from *Reimagining the role of technology in education* (p. 6), by USDoE, 2017. 2017 National Education Technology Plan Update. Office of Educational Technology. Retrieved from https://tech.ed.gov/files/2017/01/NETP17.pdf

Tucker et al. (2017) suggested, "To achieve the pinnacle of personalization and connectivity in learning, it is imperative we remain open to these possibilities by approaching the implementation of blended practice with creativity and an iterative mindset" (p. 165). "Personalized learning requires a shift in instructional practice on behalf of both the teacher and

the learners" (Basham et al., 2016, p. 126). While research shows the teacher role in a PL classroom is different from the role in a traditional classroom, there is little research on the teacher perspective of making this type of learning environment happen with learners (Brown, 2002; Jaros & Deakin Crick, 2007).

> The reality of personalized learning is that although it sounds like an excellent proposition for education, there is not consistent understanding on what it truly means and little understanding on how to actually design and implement a personalized learning environment. (Basham et al., 2016, p. 127)

Summary

The research shows that the basic foundation of PL is learner focused and that a PL model is a shift from a traditional model and way of teaching and learning. What exactly is the role of the teacher in this model? In this study the researcher further explores the teacher perspectives of the role of the teacher in PL and what teachers must do to shift from a traditional classroom model to a PL model.

Whether in a traditional or PL setting, a teacher has an important role in a classroom. Through increased understanding of the teacher perspective, more educators may feel that a PL model could be a way to meet the needs of educators and their learners.

Chapter 3

Methodology

Introduction

This chapter will address the design for the research, the methodology and procedures used in the research of the study. The qualitative approach will be detailed as the researcher explores the change in teacher perspective and practice as PL is implemented in classrooms. The details of the study will be described in the following sections of this chapter: (a) Restatement of the Problem, (b) Restatement of the Research Questions. (c) Research Methodology, (d) Research Design, (e) Population and Sample, (f) Sources of Information, (g) Instrumentation, (h) Reliability and Validity, (i) Data Collection Procedures, and (j) Data Analysis Procedures.

Restatement of the Problem

PL is emerging as a way for teachers and students to meet student needs (Jacobs & Alcock, 2017, Foreword, para. 4). As schools move from a factory like model to a student need based model in which creativity and innovation are fostered, educators must rethink and redesign the instructional environment. Students are individual learners who learn in different ways and need instruction that allows for a variety of approaches to learning. Teaching and learning should prepare students in purposeful and productive ways to be successful and contributing members of society (Jenkins et al, 2016, p. 6). Students will move into life needing to make choices on how to set goals and objectives and solve problems successfully by finding and using the resources that are available. Jacobs and Alcock (2017) wrote of the traditional model, "holding on to past and antiquated structures inhibits the efforts of teachers just entering the field; but even more important, it is undoubtedly holding back our learners" (location 2197 in

digital text). To better prepare students for the future, classroom instruction and student learning should better match how it will be in the real world.

In the real world, people do not do the same thing at the same time and in the same way. Jobs and activities are individualized and personalized. Teachers need to have the knowledge, support, and resources to properly integrate personalization of learning to ensure that students are best prepared as learners of today and the future (Jenkins et al, 2016, p. 13). If the ultimate goal is to prepare students for the future, students need to know how to set goals, make choices, self-regulate, and persevere while creating an understanding and connection about the content that makes sense to the student. "Students deserve learning experiences tailored to their needs and that make the most of teachers' time with students" (Bill & Melinda Gates Foundation, 2017). Teachers need to be informed and prepared with the right tools and resources to meet student needs and be able to personalize instruction and learning to make it relevant and meaningful for students. They need to model and guide a different type of learning environment. "We need to do things differently, not just better" (Bill & Melinda Gates Foundation, 2017, p. 1).

For many teachers, they have had little to no exposure to directing instruction while personalizing learning, so the task is not a natural or easy one. This concept of PL is very different from how they learned in school and how they learned to teach students (Jenkins et al, 2016, p. 13). While legislation and research is suggesting that PL is a model that will work in education, the shift in perspective can seem insurmountable when the traditional model has been the collective way of teaching and learning for decades.

The purpose of the study was to explore the changes in teacher perspective and practice which occur with the implementation of PL while using technology as a platform to hold curriculum with students in a general education classroom. The researcher explored the pieces

of instruction and practice of PL in the general education setting, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of PL while using technology as a tool.

In studying the teacher perspectives, the research findings will help educators understand how PL has changed instruction, how it can be used in classrooms, and the effect PL has on instruction and interaction with students. The results of the study will help other educators better understand PL from the teacher perspective and see it as an attainable model for all students including those in a general education classroom.

Restatement of the Research Questions

1. What knowledge and skills do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?
2. What changes have teachers experienced as they have moved from a more traditional model to a personalized learning model?
3. What are the perceived successes regarding the implementation of personalized learning with technology?
4. What are the perceived challenges regarding the implementation of personalized learning with technology?

Research Methodology

According to Marshall (1996), "The choice between quantitative and qualitative research methods should be determined by the research questions, not by the researcher" (p. 522). In a quantitative study, the research is focused on testing hypotheses and producing results that will generalize to other populations. In qualitative research, "improved understanding of complex

human issues is more important than generalizability of results" (Marshall, 1996, p. 524). This research was conducted through qualitative methods using an interpretive phenomenological analysis (IPA) to study the phenomenology of PL using technology as a tool. The researcher's intent was to find the essence of the data, so the outcome will transcend an experience "then illuminate a given experience for others" (Smith, Flowers, & Larkin, 2009, p. 12). This type of research was best accomplished through a qualitative methodology.

Creswell (2015) described some common characteristics of qualitative research. The researcher is the key instrument in data collection. In qualitative research, researchers position themselves as the data is collected. The research takes place in the natural setting and researchers will use more than one method and source to collect data. A qualitative researcher must spend extensive time collecting and analyzing data, looking for patterns and themes using a holistic and inductive process while the process constantly evolves, and changes and additional themes emerge.

In IPA qualitative research, the researcher "examines how people make sense of their major life experiences" and explores each experience "in its own terms" (Smith et al., 2009, p. 1). This type of analysis requires the researcher to explore, describe, and interpret to make sense of the meaning of the studied experience or phenomenology. In this study, the phenomenology of PL was studied from the lens of the teacher's experience.

Research Design

The word phenomenon, according to Moustakas, 1994, "comes from the Greek *phaenesthai*, to flare up, to show itself, to appear." (p. 26). Moustakas further shared, "Phenomena are the building blocks of human science and the basis of all knowledge" (p. 26). Those things that "appear" from this type of research can become the building blocks of

knowledge. In Moustakas (1994), Husserl's description of phenomenology is described as "a science of pure possibilities" (p.28). When using this approach, a researcher must "be completely open, receptive and naïve in listening to and hearing research participants describe their experience of the phenomenon being investigated" (Moustakas, 1994, p. 21).

Smith et al. (2009) reference Husserl's foundation of phenomenology. The basis was founded in philosophy but has since been developed into philosophy and psychology. Phenomenological research examines the human experience "the way it occurs" (p. 11). Leedy and Ormrod (2013) described phenomenology as, "A qualitative method that attempts to understand participants' perspectives and views of social realities" (p. 100). They later detailed, "By looking at multiple perspectives on the same situation, the researcher can then make some generalizations of what something is like from an insider's perspective" (p. 145). Phenomenology "culminates in the essence of the experiences for several individuals who have all experienced the phenomenon" (Creswell, 2014, p. 14).

Population and Sample

In phenomenological qualitative research, the population and sample should be chosen with the intent of giving the researcher "access to rich and detailed personal accounts" of the phenomenon (Smith et al., 2009, p. 48). "Qualitative researchers recognize that some informants are 'richer' than others and that these are more likely to provide insight and understanding for the researcher" (Marshall, 1996, p. 523). The researcher considered the research questions and determined the population for this study to be teachers that were implementing PL with technology as a platform from three different schools in one large school district in the southwestern part of the United States. These three schools are a part of a large school district, on the outskirts of a large metropolitan area. The district serves students in preschool through

12th grades and includes a total of 40 elementary, middle, and high schools. The three schools chosen for the study are focusing on PL for all fifth and/or sixth grade students in the schools that have formed a partnership with Summit Learning, an organization for PL. Summit Learning partners with schools to provide a platform for curriculum and ongoing PD for teachers.

Twenty-one teachers from these three schools who were found to be implementing PL as a part of the PL program at their school were determined to be the population. All 21 teachers teach academic subjects to the fifth and/or sixth grade students using PL. These teachers instruct students in the general classroom setting; however, some students have been identified as gifted and some have been identified as having a specific learning disability. The teachers include in the population were all part of the implementation of PL at their current school.

The sample was then chosen from the population as a purposive sample. According to Check and Schutt (2012), a purposive sample is used "when a research question calls for an intensive investigation of a small population" (p.102). A judgement or purposeful sampling "can offer a research project insight into a particular experience" (Smith et al., 2009, p. 48). In a purposeful sample, "the researcher actively selects the most productive sample to answer the research question" (Marshall, 1996, p. 523). In addition, the sample is a convenience sample because the district, schools, and teachers were chosen based upon the researcher's professional connections.

Check and Schutt (2012), further explained, "in purposive sampling, each sample element is selected for a purpose, usually because of the unique position of the sample elements. Purposive sampling may involve studying the entire population of some limited group" (p. 104). The focus group sample included the entire population of 21 teachers. The interview sample included a fewer number of teachers from the same population. A total of 17 teachers

participated in the on-on-one interviews based on schedule and availability. "An appropriate sample size for a qualitative study is one that adequately answers the research questions" (Marshall, 1996, p. 523). While the sample size is a prediction of what will be necessary to answer the research questions, the sample size could change based upon the data that emerges. "In practice, the number of required subjects usually becomes obvious as the study progresses, as new categories, themes, or explanations stop emerging from the data (data saturation)" (Marshall, 1996, p. 523). If the patterns of data collected become consistent, the predicted sample size for the on-on-one interviews could be reduced.

Prior to the study, permission was obtained from the Northern Arizona University Institutional Review Board (Appendix B). In compliance with institutional review board procedures, individual participants, school level administrators of the participating schools as well as the Superintendent's Cabinet of the School district in which the study took place also approved participation in study (Appendix C). Copies of survey questions, interview questions and informed consent forms were provided along with the request for participation in the study.

Instrumentation

In a phenomenological study, the researcher is the main source of instrumentation. A researcher needs to "bracket" or put aside any preconceptions about the phenomenon. The researcher participated in a bracketing interview with her dissertation co-chair. The purpose of this interview was to help the researcher acknowledge her bias. When considering instrumentation for a phenomenological study, the "approach to data collection is committed to a degree of open-mindedness" (Smith et al., 2009, p. 42). This allows the researcher to understand how the phenomenon is experienced by the participants in the study, thus allowing for the essence to emerge. In a phenomenological study, the researcher must consider sources of

information that will allow for exploration of the phenomenon being studied. The sources of information for this study were the focus groups and one-on-one interview results.

Both focus group and interview questions were analyzed by a small group of individuals with prior knowledge of personalized learning before being pilot tested to ensure reliability and validity. The small group of individuals with prior knowledge of personalized learning included administrators and teachers as well as at least two members of the dissertation committee. After small group approval, the focus group and interview questions were pilot tested with a small group of teachers before administration to ensure the questions will result in analysis of teacher perceptions of PL. Focus group questions are found in Appendix D and interview questions can be found in Appendix E.

Data Collection Procedures

There were two methods of collecting data for this research study; focus groups and one-on-one interviews. The researcher communicated with the building principals to schedule windows of time for both focus groups and teacher interviews and then worked directly with the teachers for further scheduling. Participants were advised that 45 hour(s)/minutes as to be allocated for each of the focus groups and one-on-one interviews. Before the data collection began, all participants signed an informed consent (Appendix F) in accordance with the Institutional Review Board. Both focus groups and interviews were recorded and transcribed. All collected data will be stored for five years in password protected spreadsheets on a password protected computer. After five years, all data will be destroyed in accordance with Northern Arizona University Institutional Review Board procedures.

After the windows of time were established with the building administrators, all 21 teachers that were a part of the PL implementation at the three schools were invited to participate

in the focus groups. The teachers who agreed to participate were divided into four small groups of four to six. The groups were formed based upon school location and time availability of the participants according to the principals. Focus groups allowed for voices to be heard through a facilitated discussion between participants. Since participants were grouped, this was a way the researcher could hear more voices at a time in each data collection session.

After the researcher analyzed the data from the focus group sessions, in-depth semi-structured interviews were conducted to delve further into the 'what' and 'why' of the results that emerged from the focus group data. The researcher interviewed 17 participants that were available and interested in one-on-one interviews. One-on-one interviews allowed for participants to go in-depth by sharing feelings and stories about the phenomenon of PL.

The researcher met with each teacher in-person at their school at the scheduled time. The interview questions were provided to the interviewees before the interviews. While the questions were followed, the researcher balanced the flow of the conversation with the interview process and asked follow-up questions. The interviews were recorded and transcribed in accordance with Institutional Review Board procedures.

Data Analysis Procedures

The research was conducted through a phenomenological lens. According to Creswell (2012), phenomenology is used to describe personal experiences and the essence of a phenomenon, which is PL in this study. All focus groups and interviews were recorded in accordance with the informed consent forms and the recordings were transcribed. The researcher read through the transcribed text several times and used inductive coding to code the responses, looking for significant phrases, meanings, and key emergent themes. Notes were made in the margins of the transcribed text. The researcher analyzed the responses to identify and organize

the themes in those responses. Results from the focus groups and interviews were compiled and reported in table and narrative format. Both focus group and interview results were analyzed and compared to report the data, conclusions, and recommendations.

Data Match-Up

Table 1 provides the match-up between the research questions and the corresponding focus group and interview questions.

Table 1

Data Match-Up

Research Question	FGQ	IQ(s)
1. What knowledge and skills do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?	2	3,5
2. What changes have teachers experienced as they have moved from a more traditional model to a personalized learning model?	1	1
3. What are the perceived successes regarding the implementation of personalized learning with technology?	3	2, 4
4. What are the perceived challenges regarding the implementation of personalized learning with technology?	4	2, 4

Note. FGQ=focus group question, IQ(s)=interview question(s)

Summary

In this study, qualitative data were collected through focus groups and interviews. Data were collected and analyzed, using an Interpretive Phenomenological Approach. Details of the instrumentation, data collection, and data analysis were highlighted as the researcher studied the change in teacher perspective and practice as PL was implemented in classrooms. The results of this qualitative phenomenological study will allow educators to understand PL from the teacher

perspective. The next chapters will detail the results of the study, implications for practitioners, and recommendations for future studies.

Chapter 4

Findings

Introduction

The purpose of this chapter is to present the findings of the qualitative data to explore the changes in teacher perception and practice which occur with the implementation of personalized learning (PL) while using technology as a platform with students. The researcher explored the knowledge and skill necessary to implement PL, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of PL while using technology as a tool.

Qualitative data were gathered from questions posed to the participants in focus groups and one-on-one interviews. The focus groups and interviews were recorded and transcribed before analysis. Major themes were identified through interpretive coding and were presented in table and narrative form.

Participant Demographics

The participants in this study were teachers from three different schools in one large school district in the southwest United States. These three schools are a part of a large school district, on the outskirts of a large metropolitan area. The district serves students in preschool through 12th grades and includes a total of 40 elementary, middle, and high schools. The three schools chosen for the study are focusing on PL for all fifth and/or sixth grade students in the schools.

Twenty-one teachers from these schools were found to be implementing PL as a part of the school's PL program. The teachers used the Summit Learning program as the primary curriculum, but were allowed the autonomy to add and delete their own curriculum components.

The teachers teach academic subjects to the fifth and/or sixth grade students and are in the first year of implementation of PL. All 21 teachers volunteered to participate in the study.

Of the 21 focus group participants, 17 were also available and willing to participate in one-on-one interviews. The participant experience ranged from a first-year teacher to teachers with over 20 years of experience. Five of the teachers were male, while sixteen of the teachers were female. Six of the teachers taught fifth grade, while fifteen of the teachers taught sixth grade. All of the participants teach an academic subject to include, language arts, math, science or social studies.

Research Question 1 Findings (FGQ2, IQ3, IQ5)

What knowledge and skills do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?

FGQ2. As noted in Table 2, three major themes emerged for FGQ2 (What do you perceive to be the key skills and resources necessary in transitioning to a personalized learning model?); the teacher mindset, content knowledge, and technology skills.

Teacher mindset. The most common theme discussed in the focus groups was the teacher mindset and it was brought up in all four separate focus groups through topics of a growth mindset, flexibility, positivity, grit, and perseverance. The participants shared what they perceived to be necessary in transitioning to a PL model. FG1-5 said,

> I think you have to be willing to fail and to try again and figure it out. And you have to be ok with learning new things. I can't imagine going into this without a growth mindset and being open to this because it is frightening.

FG2-1 shared, "You need to be able to be… willing to take risks and figure things out on your own." FG2-2 agreed, "You need to be willing to make mistakes yourself, to invest the time."

She continued on to share that after some time things change, "And now… I think it is pretty easy to manage for the most part".

Another part of the teacher mindset that emerged was flexibility. The teachers discussed the need for flexibility when personalizing learning compared to the need before switching to a PL model. A PL classroom is structured in a different way than a traditional classroom. According to FG2-5, previously, the curriculum had "been set. This is when you do this, and this is when you do that." She went on to share, "I think just being able to be flexible, too, with moving things, because that was big for me. Just because it's in there [the platform], it's not set how that has to be done." A similar conversation was captured in FG3 where FG3-6 summarized, "And now I think we've all kind of adjusted it to the student's needs and our needs and what works."

FG4 brought up the transition and how it was such a change of a mindset for both the students and the teachers. The teachers realized they needed to focus on all of the same habits of success they were trying to build in the students and it wasn't easy or natural. FG4-4 shared,

> I've got to be honest… it's a hard thing to do. Transitioning, you need grit, right? You need perseverance. You need to be able to reflect… You need a positive mindset. You need those habits of success that we learned and we're instilling in the kids. I mean, we have our habits of success things up. We've taught that. And, I mean, it's a hard thing.

Content knowledge. The second theme that emerged was the knowledge of the content and standards. The participants discussed the content of the curriculum. The base curriculum for English language arts, math, science and social studies was provided to these teachers through a platform from Summit Learning, which is a computer-based platform that holds the content and resources for the students and teachers. FG2-4 shared, "… as far as the resources,

there is so much in that platform. It's just navigating it and knowing what is useful and what isn't." When so many resources are presented and available, FG1-1 stated,

> I think you really have to know your standards... I think to myself if I hadn't taught math for this long there's no way I would be able to get that conceptual piece down and then I think they would miss so much of it. So, if you don't know those standards and can unpack them and put them back together, I just don't know how you would do it.

Technology skills. The content and the curriculum were closely tied to technology and technological skills, which is the third theme that emerged. FG2-4 shared, "The kids need the technology and we need the technology to be able to guide them." FG2-1 continued, "I think you need to be somewhat technologically savvy… or you need to also take risks and figure things out on your own." She explained needing to know how to edit the content in the platform, "We had no idea that we needed to get in there and vet the curriculum, and we needed to do that on top of everything else… for me, that was a huge struggle." Even though the participants all attended training to get them going on PL, FG2-2 shared,

> you sit at these trainings and nobody tells you, 'Well, here's how you edit your focus area. Here's how you add things. Here's how you delete things.' Those were just things we had to figure out on your own or on our own.

Table 2

Most Common Themes (FGQ2)

Themes
Teacher Mindset
Content Knowledge
Technology Skills

IQ3. As listed in Table 3, the themes that emerged from IQ3 (Describe the professional development and support you have received while preparing for and implementing personalized learning.) were the themes of training, collaboration, and the teacher mindset.

Training. The teachers had similar training offered but they described professional development as much more than the training. The training was discussed as only a small part of the learning process. I11 explained the professional development that the teachers attended, "We went to a pretty intensive week [of training] in the summer to introduce us to personalized learning and the Summit platform. And through that I'd say we came in partially prepared." She continued,

> It's kind of that idea that we didn't know what we didn't know when we started. I thought I was more prepared than I actually was and it's truly; with anything that's new you truly have to immerse yourself in it to really understand the challenges and what the successes are in the program.

Collaboration. The participants commonly discussed the theme of collaboration as most beneficial to their development as a teacher teaching with the PL model. I5 stated,

> There were so many unknowns… I felt like we were all in the same boat and just trying to offer what we each had to one another. And so it wasn't like someone that had had all this grand experience that could teach us. It was more of, we were all trying to survive and teach each other.

The participants had some structured time for collaboration built into their week. I6 spoke of the specific time spent with the grade level team in Professional Learning Communities (PLCs), "During our PLC time, we will sit down together… trying to hash some things out… once a week we are getting together to talk about things." The conversations told of teachers relying on each other for more than just this structured time. I13 was one of the many participants that shared of regularly relying on teammates,

> The colleagues have been the biggest help in the whole thing, more so than any training. Because as you have a problem you go to them and they can solve it. And so it's great. So that's been the biggest help.

I4 shared that he and a colleague "have been looking at each other's focus areas and saying, 'Hey. What do you think about this?' or, 'I just found this great resource'". Of the 18 interviewed, 12 spoke about the need for collaboration as a necessary piece as teachers move to a PL model of instruction.

Teacher mindset. The third theme of the mindset was clear as the teachers shared about the need for trial and error, reflection, and the growth mindset. I9 shared how she had to dive in and start working with the materials and students to fully understand PL,

> I really feel like what has helped is trial and error and just diving in and doing it. I don't know that there was anything-- I thought about this and I don't know that there was anything that happened that I was like, 'Well, yes, this really prepared me.' And maybe that's just because my nature is to focus on what didn't go well and why didn't it go well and what I can do differently, but I don't feel like there was a whole lot that made me ready for this.

She continued, "I feel like what prepared me was just diving in and getting started, and then fixing things along the way." I6 shared, "Nothing's really going to prepare you, I guess, until you're really into the situation, and the best way to learn is just to figure it out yourself sometimes." When sharing her story of the need for the growth mindset in both the teachers and the students, I9 stated,

> I think for a while now we've been talking about growth mindset of students. And when you talk about that, as a teacher, you don't have that mindset and you're not prepared to trial and error things and fail and have to go back and reflect and make things better. I think that that's just it, like you have to have the mindset. But we tell our students all day long it's okay to fail. So, it has to be okay for things not to go well for us too and we go back and look at what worked and what didn't and how can we make it better. I mean, I feel like every day that's what it is. Something happens that, for whatever reason, it didn't work for that student and we have to go back and figure out with that student what's

going to make it work. So, I really think diving into it and getting started is just kind of where we've grown and gotten better. We definitely learned a lot.

I12, shared of the mindset shift and her thoughts on being a front-runner as she tries something new in education,

> I did think it is kind of exciting to be on the front of something that you know is the direction we're going. Don't stop the moving train. We can fight it all we want but the train is moving forward in this direction and I knew that. I knew that. From my own kids but also even trying to navigate curriculum myself, find things I want. I'm like, no, we're going to open education resources. It's silly for us to not to recognize… That's where we're going. We're not going to be taking textbooks out, people.

Table 3

Most Common Themes (IQ3)

Themes
Training
Collaboration
Mindset

IQ5. As viewed in Table 4, when answering IQ5 (What do you perceive as critical to the success of your personalized learning classroom?), six common themes emerged; the teacher mindset/attitudes, collaboration, mentoring/relationships, management/organization, knowledge of content/standards, and technology skills.

Teacher mindset. Some 82% of those interviewed spoke of the importance of the teacher mindset in the interview. I5 discussed the mindset she thinks is necessary to bring PL to students,

> Being a risk taker, being okay with failure and being vulnerable. Just being open. You have to be willing to learn and not throw in the towel. I think as an instructor of this, facilitator, that you have to have some grit and perseverance. Because it's not easy. And there's good days and bad days. But those good outweigh the bad. And so that's awesome.

I10 shared, the teacher attitude is "huge… Like when the kids would get frustrated, be like, 'You know what? I totally understand.' And accepting that there's going to be faults, and falls, and bumps along the way but just having a positive attitude about it." She continued,

> Is it perfect? No. Is the textbook perfect? No. So just having that mindset of, 'Okay. This isn't what we want. So how are we going to make it better?' So just having a growth mindset about it in our own way.

I11 also shared of the growth mindset being "huge",

> I think the growth mindset, that's huge. I mean, just myself and my students feeling like, 'Okay, well you know what? Maybe I didn't get it today, but tomorrow's another day and I'm going to keep going and I'm going to persevere and then I'm going to feel really great about myself when I do succeed.'

I6 explained her thoughts on the importance of the teacher mindset in the classroom with students,

> I think being a good listener and being very observant and seeing where kids are and where I need to help them. I think also making sure that I'm not spoon-feeding, that I'm asking them the questions, and I'm letting them come to the conclusions on their own. It's

so easy to jump in and tell them things instead of just letting them come to those-- and that's still hard, and I almost think that there's sort of an art to that, and I don't think that I'm the best at it still because you have to just kind of know what to say to lead the conversation to get to the conclusion you want, but they come to that conclusion. And sometimes that's tricky and hard.

Collaboration. The second theme that emerged from the IQ5 was collaboration. The teachers discussed working with their teammates and how much they valued the opportunities to share with and support each other. I3 shared,

> It's a community. I see us as a community and everyone has to work together to get to the end goal. And that includes every single person that helps a child. So, I think that's important… Just having everybody in the school that can help a child know how to do this I think is really important.

115 detailed how her team worked together,

> We really like being able to teach two subjects and we bounce ideas off each other. And it's interesting because we plan together, [as she points to another classroom] but we share students [as she points to a second classroom]. So, we get different perspectives from each other.

She elaborated on the discussions between teachers,

> 'How are they performing with you? And how are they doing here?' There's a lot more collaboration, I'd say, as a grade level. So, if I didn't have people that I could easily work with and that I kind of like, it would be harder. It really would. Because I think with this type of teaching, I think you actually kind of work more with your team than you did in the past.

I16 shared the dynamics of the team and the previous way of doing your own thing in your own way because you have done it for so long,

> We had all been teaching together for a long time and teaching the same thing over and over again. So, you just get into your own kind of groove and you didn't want to get out of it. So, yeah. I'd say you definitely need a strong team that can work well together for this to be successful.

I9 is adamant about the teamwork that must happen and connects it carrying over into the relationships and the collaboration with the students, "It has to start with a team that's going to work together and be supportive together. And then in the classroom, it's the same thing. There's a whole lot more collaboration between students and teachers."

Mentoring/relationships. This leads into the next theme that emerged from IQ5, the relationships with students, which is commonly referred to by the participants in the interviews as "mentoring". I15 shared that "mentoring" is the single most important part of personalizing learning. Mentoring is what the teachers call the relationship building piece that includes goal setting and data chats with the students. The participants shared that the goal is for the teacher to sit on-on-one with a student for about 10 minutes once a week. I3 shared a story of a colleague,

> I think a lot of times teachers don't get to really know their kids very well. I know one of the 5th-grade teachers was a 4th-grade teacher last year, and she learned more about her kids in the first two weeks than she learned about them in the whole year because she had time to sit down and talk to them.

According to I4, teachers trained in this particular program say, “A big part of this is supposed to be mentoring.” She continued,

> If you don't have those relationships with the kids, you can't do this because they put themselves out there. They are taking huge risks in here. More than they've ever taken. And if you don't have that relationship, they're not going to do that. So mentoring is a big thing that you've got to have those relationships and just enough time to do that mentoring.

Management/organization. The theme of management emerged from IQ5. This team agreed that more time to prepare would have been helpful but that they made PL work. I7 shared how a focus on management “hasn’t been fun” but was critical to the success of personalized learning. I12 also shared that “management is a very big deal.” She continued on to explain some of the management pieces in her own classroom,

> I’m talking about from the way the classroom is being set up, in my classroom, every child picks their own seat every time. I have all kinds of flexible seating, and I have alternative seating. But everyone must pick a success seat, and they get that opportunity to do that unless something has happened. And all of these choices they get to make, they don’t necessarily use them to their best until they realize, ‘This is my choice, and I’m going to do what I can with it.’

She elaborated on the importance of setting expectations and boundaries in her classroom,

> To any group of students, boundaries are huge. Expectations are huge. What you expect is a setting for during this time, you can’t have people stealing other people's learning opportunities. And because of that, you need to make sure that you have it set up so they can be successful, set up so that you can see. I mean, even my own environment—

sometimes the kids want the lights dropped—and I have certain lights that go on in the rooms—because they feel like they can focus better. And for me as a teacher, we have the sixth-grade rule, one earbud in, one earbud out because you can hear just fine, but—I've learned this with my own kids—I need to know what else you're listening to, and what's going on, so you can tell if it's off-task. You can hear when somebody's playing music that's—anything. You can catch it like that. Plus they need to be able to hear your instructor rules if you need to say something. And so there's just little keys that you need to figure out how to make sure your room's functioning, I feel like it is so that the kids feel safe. They feel happy and it feels like what you would do when you escaped to the library in the old days. Where did you go find your group study room? Because my kids have this board where they can go sign up for group studies. And I let them leave my room. Responsible kids right out in the hall, there's a little set-up stuff. They take their stools. I let them use whiteboards. I let them do anything that they would be doing in a study group in college. And, yet, I still have test papers, so I have to make sure that the boundaries are set, the privacy folders. They know the systems and I think that's key.

Knowledge of content/standards. The need for knowledge of the standards and content was the next most common theme that emerged. I9 spoke of using the need for strong knowledge of standards to vet the curriculum. The team explained that going into this, they were unaware of just how much work they would need to put in with the curriculum.

We've implemented it and we know now you have to go through and vet your curriculum and look at your resources if you're taking it directly from whatever you're using. If it's not yours, you have to go through and do those things.

I4 shared, “You've got to know your standards inside and out. Inside and out. And not only that, you have to know how to scaffold. Your questioning has to be on point.” She continued,

> I don't see how you could prepare a new teacher with those questioning skills and the understanding of the content. I mean, yeah, you can memorize your standards, but without the experience of being in the classroom, you don't know where your kid's going to take you with these standards when you're teaching. What are misconceptions they're going to have? You don't know that until you've been teaching.

Technology skills. When the specific PL model came with a platform to hold the full curriculum, technology became more of a topic than it has been in previous years. While the schools have provided technology, it is now being used in a different way. I3 spoke of the importance of knowledge of technology,

> That's another thing that I've seen this year… I do think it's important to be able to click around on things. Don't be afraid. I just click around and I find new things. And I have kids that teach me new things every single day. I think that's really important.

Table 4

Most Common Themes (IQ5)

Themes
Mindset/Attitude
Collaboration
Mentoring/Relationships
Management/Organization
Knowledge of content/standards
Technological Skills

Summative Findings for RQ1

What knowledge and skills do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?

There was one common theme that emerged from all three of the questions. The theme of the teacher mindset was consistent throughout the focus groups and interviews. The themes of collaboration, content/standard knowledge, and technology skills each came up in the findings of two of the three questions. The themes of training, student/teacher relationships, and management emerged from one question.

The teachers shared the importance of the teacher mindset. The topics that were included were the growth mindset, flexibility, positivity, grit, and perseverance. A teacher must be willing to fail and try again and figure it out. The teachers also shared how much they relied on their colleagues to share successes and struggles. Many noted how they could not have imagined success without that team support. The teachers discussed how a teacher needed to have or be

willing to build strong content knowledge, technology skills, and management skills. Continued professional development and time will be important as will the student teacher relationship.

Research Question 2 Findings (FGQ1, IQ1)

What changes have teachers experienced as they have moved from a more traditional model to a personalized learning model?

FGQ1. As shown in Table 5, three themes emerged from FGQ1 (Tell me about the transition from a traditional model of instruction to the personalized learning model of instruction.): the platform, the role of the teacher, and the shift to the cognitive/conceptual skills.

Platform. The most common theme that emerged was the platform. Every focus group had a detailed conversation about the platform and every participant had a comment about the platform in the form of the curriculum and resources or the data that it provided. According to the participants, the specific program that these teachers were using included a platform to hold the content and the curriculum that is provided to the teachers and students. While discussing the platform, the teachers shared the new curriculum and resources as well as the data that they can see. The teachers referred to the specific content areas as "focus areas". In each "focus area" the platform provided and automatically graded the pretest and posttest data for the teachers. The student data were held individually and collectively in the teacher platform. The teachers shared of using the data to fill holes and gaps that they previously did not know existed. According to the teachers, the platform also held project information and the projects take the content to a deeper level. The students can move along at their own pace through the guidance of the teacher. The teachers then used the student data to create whole group, small group, and individual student lessons.

FG1-2 shared how she used the platform and some of the things she can see in the platform that have helped her fill gaps with her students,

> Our standards haven't changed or anything, so I'm still filling in the gaps where I normally need to be. But it's really nice just to have the platform there to see where each kid is in every subject and have it broken down into those conceptual things and also the procedural things as well. I can see it all broken down into percentages and everything, and I can see them based off of other students and everything like that... And now, it's just in one place that I'm able to answer my own questions which is really nice for me.

FG1-3 noticed that she knows more about her students and can hold them more accountable because of the platform that holds the information in one place for her. She stated,

> Just knowing where our kids are at. I think some of them try to slip through, like, 'I don't need to do that.' Now you can see it all one page, and they'll be like, 'But you're not my social studies teacher.' 'But I can still see that you haven't done your assignment', and I think if we didn't have this, how many kids would just continue to slip through, and get away with not doing things, or doing it halfway, or whatever; and having access to that and being able to hold them responsible. 'Yeah, I might be your Math teacher but I'm also your mentor and these are my expectations, so we're going to sit down and get it done.' And they've kind of learned like, 'Oh, she's going to check.' So they start taking that initiative to get it done on their own. And I don't think we had access to that kind of information before.

FG1-5 looked back to the beginning of the year and the progress that has been made, "It was hard at the beginning of the year, because there were huge gaps that needed to be filled. And we were like, 'We're never going to finish.' Because they're never going to pass these." FG1-1

chimed in, “We’re still filling gaps. And then all of a sudden, they started getting those filled and they're getting faster and better and better at it. But that beginning was an eye-opener.” FG1-4 was confident that the data the platform has collected from the pre and post-tests helped her help her students,

> Now, it's nice to be confident in the fact that no one's going to slip through the cracks. I mean, we never want that as teachers, but we know it happens. They did [slip through the cracks] for a long time.

In FG3, FG3-2 started a conversation about the upgrade in the content and the resources that were on the platform as compared to the previously supplied resources from the district.

> Prior to this year, our science curriculum was basically non-existent. Yeah. There were kits that were out decades old, totally outdated, not relevant anymore. So, it has provided a strong curriculum in those areas. In social studies, we had a textbook but I think the projects and everything have kept it a little bit more relevant than it was in the past.

FG3-5 added,

> Yeah, I mean, just going from the aspect of social studies, I like all the writing that we do in social studies—and you guys were freaking out about, ‘There's no writing, there's no writing.’ I'm like, ‘We've got it covered,’ for social studies. So that was nice.

He continued,

> The biggest transition to me is getting sixth graders to know that PLT time is you need to be on your platform. You should be working rather than, ‘Ooh, look at this Sponge Bob video I found,’ or whatever. So it's that part of it, while there's a lot—I mean, it's like with us for the teacher aspect from the kids is trying to teach them or get them in line to, ‘This is how it works.’

The teachers shared that they are trying to get students to use the resources that are available to them. FG3-4 stated, "we're teaching them to use the resources. I think that's a great skill, even when you did a traditional way. But this is now. This is their generation." He continued about his own children, "I'm like, 'Okay, I wish my kid went through this program because these kids are learning to be more resourceful.'"

FG2-1 spoke about the resources being supplied and how they increased her ability to differentiate for students. With the resources provided, a teacher does not have to spend hours preparing resources to meet the students at different levels.

> I think the resources I have now allow me to dig in deeper without having to spend the time to go and find that deeper thinking or that more rigorous thinking. It's all supplied to me and then I can change it how I want it. If I don't want—if I feel it's something that's way above where we're at at the moment I can table it and go back to it at another time. But I can add everything and still make it my own but they're provided to me instead of me spending the time to research it. And then I think where the personalized learning comes in is more their focus area work and that allows me to accelerate the students who can handle being accelerated or need the challenge and still work with those students who have gaps to fill or who don't grasp the concept in class with, again, everything provided. They're giving immediate feedback that they want as far as their assessment goes and they have resources to go to if there's something they're not understanding besides me. And then I step in as I need to.

Role of the teacher. The second theme that emerged through FGQ1 was the role of the teacher. The teachers shared how the role of the teacher has shifted since implementing the PL model. The teachers spoke about the role of the teacher as the facilitator, the mentor, and the

small group leader. FG1-1 shared that it took a mindset shift for the team to get to the point of figuring out what the teachers should be doing. It took a while to come to the point of realization,

> recognizing what our role was in this. Really figuring out—[in] the traditional model, you are more [of a] facilitator, you're really kind of driving where they're going. And so, when they start the personalized learning, it's more like they're the driver and you are just a passenger. And so, kind of figuring out, 'how much do you intervene?' What your role is. That was hard at first. That was a difficult transition

FG1-5 continued by sharing the thought process as she transitioned from the previous way of instructing to her new way of instructing,

> I mean, you're used to your lesson cycle. And you start whole group, you have your objectives you are doing, and you guide them through the lesson. It's I do, we do, you do kind of thing. And then all the sudden, it's you do, but what do I do now? What do I do? And really understanding that, it took a little bit of a shift for me. I had to really kind of know my role. I just let them go? And then to recognize, no, I don't just let them go. What my role is—oh, I am actually still instructing. I am still doing a lot of the things that I have always done. It's just looking a little bit different. So, I think for me, the transition to figuring out what my position was in this—my role.

FG1-4 shared that it was a shift to be ok with the difference in the control of what the students were doing in the classroom,

> knowing that they're not always going to be at the same place at the same time. That was really good to let go and just let them do their thing instead of us trying to control—we're all going to do this together. Just letting them go."

FG1-5 went on to elaborate on how letting the students go led to another change and shift in the role of the teacher. The teachers had to look at management in a different way and figure out how to track all of the students at the same time. "…how to keep track of that—where they were. That was a little scary at first. Not wanting them to go too fast, but then not wanting them to go too slow. Yeah, that was frightening at first."

When students are all moving at their own pace but there are still whole group lessons. FG2-5 shared how some students will get a second touch and some students will get a first touch and then a second later when they get to a similar concept on their own.

> Then to add to that, what I would consider the normal, traditional teaching that was happening in the classroom… it's increasing the background knowledge sometimes depending on how far they've moved ahead as well as sometimes when we go back to revisit it. So, they may be someone revisiting it. We may have touched on it in class, but then when they see it again they're getting it for a second time or whatever. So, sometimes they're a little ahead of the personalized learning with their own self-directed learning, and so they'll get some background knowledge. And then sometimes, as you go into it again, it's a second touch, so it's sometimes reteaching.

All of the FG2 teachers chimed in about catching the students that need reteaching. FG2-4 shared, "It's easier to catch those kids, too, who you need to reteach now, I think, then it had been in the past."

As the conversation shifted to the students that are high achievers from the students that needed reteaching, FG2-2 shared,

> I think the transition was a little tough for them. Not in our teaching aspect of the day, but them being self-guided in that personal learning platform. That was a huge transition

for them because they didn't want to fail. We have a group of kids who don't want to fail so they didn't want to try. They are not risk takers. Well they were not risk takers, but they are now.

The conversation of the risk taking continued as FG2-4 shared how the teachers reacted to know that they had to let the students work through the process and adjust to moving and taking those risks on their own,

> Yeah, it was nerve-wracking, I think, at the beginning for us to see them be so anxious about it and how do we get them over that hurdle besides just repeating over and over again, but you know that if you don't master it you go back and you look at the resources again, and then you take it again, and so yeah, it really, I think, for everyone, the teachers and the students both, it was just getting your hands dirty, getting in there and doing it. There really was no other way to do it. And also going a little bit from that mindset of, 'I'm waiting for the teacher to tell me when to do it,' to—I used to have to be, '[Okay, we're?] having a test on Friday,' and now they're testing when they're ready or they're having to go. And that was a big huge thing, I think, too. So, no, you're not waiting for me. So that's part of what the shift was, I think, too, for them.

FG3-2 shared of the difference in the student responsibility with the PL model.

> [We are] teaching responsibility because it is more of their time is their time to get done what they need to get done. Right now, we're all working on end-of-the-quarter projects. So, they're all doing different things and some of the kids were using their time very wisely and some are not. And they will see the consequences of that when the due date comes and goes and they have not completed what they had to complete. So, I think a lot more responsibility goes on the kids than used to be in the past. Just because we're not

like, ‘Okay, homework's due tomorrow. Homework's due tomorrow.’ It's more like, ‘Okay, this all has to get done by the end of the quarter or by the end of the year.’ So they have to pace themselves.

When prompted to answer how the teaching practice helps with that task of teaching responsibility in a different way than it has been taught before, FG3-6 shared, “Well, the mentoring part is a big piece of the personal learning time.” FG3-2 elaborated,

> Because that's the way of understanding, ‘Where are they?’ And even though they are responsible for their own actions and their own timing some of them really need to, ‘Okay, you really need to catch up here. You're not even close to being where you're supposed to be,’ and ‘Let's set goals for this week. What are you going to accomplish?’ So, because by the end of the year if they wait until May 1st, ‘Oh, I'm going to do all my focus areas now,’ that's not going to happen. So, we do have some situations where they're so far behind that it will catch up with them very quickly.

The conversation led to the teachers discussing the balance of whole group instruction and the personal learning time. FG3 shared of small group instruction, individual instruction and mentoring happening at the same time as the individual personal learning time. FG3-2 explained,

> for math, we are still holding whole group instruction. In ELA not as much. I would math primarily. Yeah, we have to because theirs is a gap in what we're using that the kids are just—just to throw them into some of the math resources and things, they need the basics first, so we always start out with whole group instructions before we go into any of the projects. So, we still do a lot of that.

FG3-4 shared that she still starts her lessons in the same way that she did previously, making the first half of her lessons appear similar to how they might have with the previous model.

> I still do what I did in the traditional. It's always 15 to 30 minutes of teaching. I find that I'm doing more in social studies, especially with the projects that they have to do. We have to break it down, explain it, connect it to everything.

FG3-5 elaborated on the process of more whole group instruction for the beginning of the class period,

> I agree, and it's just the first 15 to 20 minutes, here's what we've been doing. Here's the skills that need to be working on, our cognitive skills, and then after that it's pulling the kids over that you know can't do those or are having a hard time with it, saying, 'Okay, let's go over this again.' But I mean for me, probably whole group social studies has gone down.

The transition wasn't seamless for FG3. The teachers recalled that they had to find a balance and figure out what the teaching would actually look like and find the balance between whole group, small group and independent learning time. FG3-6 described, "I think in the beginning though, we thought okay, this is all online so we didn't really—we felt like, okay…" FG3-2 chimed in, "We felt like we shouldn't be doing whole group instruction." FG3-6 continued, "We weren't teaching as much as we should and we relied on the [platform]. But then we were like, I don't think we are doing this right and then we realized that we should be teaching." FG3-2 shared, "Yeah. Because I think some of the expectations of Summit were a little bit higher than our kids were coming in at. So we had to make sure that they were up to that level." The group of teachers collectively agreed that they focus more on small group instruction

than they did in the past. FG3-6 shared, "I think it happens way more now." Others agreed as FG3-2 shared, "the focus is more on that because of the design of the program. Because I think prior to this year, we would do whole-group instruction, and then they'd do independent practice or whatever they were doing…" FG3-6 gave an example of the past, "They would have one task. Everybody was doing the same task. And then we moved on. It's definitely more individualized now."

In the FG4, the conversation about the shift of the role of the teacher began with FG4-4 sharing his perspective in working with students with needs while pushing into general education classrooms,

> from my perspective as a resource teacher, more traditional ways of instruction led for more traditional learning for the students. I mean, it's more of the books…writing on their notebooks, turning in assignments, turning in paper. And then all of a sudden, we snowballed into this huge effect of technology. And then wrapping their heads and growing with education, we're growing into a technological era that we have. And it's just kind of been an amazing transition to see how much these kids can do on a computer, in general, just basic skills. And then apply their education towards it… for example, being able to switch things from a traditional model to personalized learning model of instruction allows us to focus on certain groups…. Where we're able to focus on a certain group of students who maybe excelling, struggling, or right in the middle and create a plan to personalize their learning given the data that we're automatically getting [from the platform]

He went on to explain a little bit about how he used the data from the platform.

> So beforehand, we'd have to keep that data ourselves. And sometimes, as teachers, we don't know how to interpret things, right? You'll look at it and you're like, 'Oh. What did this person have?' or 'Is that right? That doesn't sound right. That data doesn't sound right.' Well, now we have a bunch of data that we can look at for validity, increases validity, as well as being able to benchmark students, being able to assess to students properly, and being able to create a plan. Every student is entitled to. Not only students with disabilities but every student. And that's what's awesome about that shift too… is being able to hold them accountable to those standards.… It's working on those deficit areas… and it takes a teacher to be able to break it down and keep it aligned. So that's really how it's helping and really how the traditional model kind of failed a lot of teachers because it was that much more difficult to keep those standards aligned and actually push the students to their full potential. I'm sure we can multiply. But can we multiply within context, within algebraic expressions, within numerical expressions, within division? Are we able to do those skills? And now, I can use those skills and apply it to something that everybody else in the class is there for.

In addition to transitioning to the PL model, FG4-1 switched grade levels at the same time as the switch to PL.

> So, for me, because I have taught the same—I taught fifth-grade curriculum for 21 years. And to make this switch to do personalized learning plus the switch to a different grade different grade level has been challenging. But what I appreciate is that the curriculum's already there, so now I'm just working on how to teach the curriculum. So, there's definitely less direct instruction then what I'm used to, obviously, and we're still trying to

figure out—on good days it flows nicely where I teach the lesson and then they practice it.

She continued to share how far the student mindset has shifted. The students have moved from learning in a traditional, mostly whole group directed environment to an environment in which the students don't want their teacher to talk. They tell her that they just want to work on their computers.

> And then on some days the students keep thinking that I'm talking. They don't understand that I'm teaching… they're like, 'You need to stop talking.' I'm like, 'I'm not talking. I'm teaching.' So, I think it's because they've gotten used to working on the computer that whenever I do something it's not that I'm teaching them anything.… When I do whole group instruction, they're like, 'You need to stop talking so that we can work.'

A few minutes later into the conversation FG4-1 shared,

> I think if we didn't do the mentoring part, I really think that we would lose a lot of these students, because just by checking in once a week and going through the platform—and then, again, that guides my instruction to see, 'Okay. Where are the holes in my subjects? What do I need to go back and re-teach and help them with?' So, it's definitely been a shift. I wouldn't have switched grade levels after 21 years if I didn't believe in personalized learning.

When asked if the team had practiced anything like mentoring before learning of the personalize learning model, FG4-1 explained,

> No. Not at all. I mean, just thinking about last year, we didn't mentor at all. We had conferences with kids one-on-one, maybe, for a few minutes or sitting at their desk, but it wasn't anything like this. I mean who has 10 minutes, 12 minutes, to spend with each kid

every week with the 10 kids, 12 kids, that we have. It's just not there, in any teacher's schedule I think. And it's been good for relationships, I think. If you ask them about, not only school, but friendships, where they see family life as anything more—some kids have opened up personally, some haven't…. So, I think that is a good part, the mentoring part. Somebody cares. And some kids have accepted the mentoring and some kids it's just a teacher conference. But for the most part, that is a good aspect of personalized learning.

Cognitive/conceptual skills. The third theme that emerged is the theme of teaching cognitive/conceptual skills. According to the teachers, the focus is bigger than just the standards. The teaching is more about how things fit together and how students make use of what they learn. FG2-4 elaborated on the difference from the previous way to the PL model.

> The traditional model, it was more procedural. You go through the book and the examples and this allows me to introduce it and they learn the procedure, but then using the personalized learning [curriculum] they get more of the conceptualized math that goes along with it. So that was the biggest change for me. That was really helpful for me to have the kids dig deeper, and they're being assessed that way now. So, what we had are the books that are good for examples for procedure and how to teach, but now an apply it to a real-world situation and a deeper understanding of the why, not just the how.

FG1-5 shared, "Well, it's a big focus on the cognitive skills and wrapping your head around those when we're so used to everything standards based, standards based, and thinking about those. That was a huge shift." FG1-1 continued,

> I think for math, traditionally you still teach math, and I think some people think with the personalized learning you're not teaching at all. Well, you still have to teach math. The

shift would be going to the conceptual skills, not so much procedural. But I feel like, with the personalized learning model, they're actually getting more curriculum than they've ever gotten before because you're teaching it. They're procedural, they're conceptual, and they're doing it on their own. So, it's almost like they're getting exposed to way more curriculum than they ever have been. And that's what I like about it. Because it's still traditional teaching, just it has so many more resources.

FG1-3 worried about moving away from the content specific instruction but reminded herself,

I'm giving them an introduction to it that they're going to get in their specific science classes in junior high and high school, but what I am teaching them how to do is think and question. So the biggest change for me was to go from here I'm presenting content to, okay, I'm going to ask all these guiding questions. I'm not going to give you any information. I'm just going to guide, guide, guide, guide, guide, guide, guide until you get to where you need to be. And that's a big shift in my lessons, because it is so differentiated when it comes to a child. But they ask the questions, and then I ask them questions. And the whole class cheers them so is this constant back and forth. We start off here, and then we get closer, closer, closer, closer, closer to where we need to be.

FG4-3 shared her thought process as she began the switch to this new way of teaching into implementation this year,

The personalized learning has been so great and once I knew I was doing this, at the end of last year I tried to start—I thought, 'Hmm, I'm going to try to start sitting down with them and taking a step back,' and so what's really different is they do most of the talking. I am able to say, 'Okay. Here's a question, I use what's in the platform, here's a problem, how would you work this out?' And I let them. And it was hard because I'm used to

> telling them everything. But it's been so good for them, especially for these kids and how this thinking—so they can think, they can sit. They like to talk about it. They talk to each other about it. And in doing that they're kind of doing their own learning and I try to help guide them. What's hard for me sometimes though, and a lot of the times there's not answers for things sometimes and so I'm like, 'Oh, my, gosh. Am I doing the right thing?' But, I think that's been the transition. I'm trying to have them do a lot more of the talking even when it's me talking, I try to have them do more of that. Not all the time but it's not easy.

FG1-1 summarized, "I think my teaching's more meaningful than before, because it has to be. You can't just be like, 'Hey, I'm going to do page 112.'" FG2-1 shared, "my teaching and what they're learning is deeper, more rigorous, more application, and concept-orientated as opposed to being just the procedures"

Table 5

Most Common Themes (FGQ1)

Themes
Platform
Role of the Teacher
Cognitive/Conceptual Skills

IQ1. As noted in Table 6, five themes emerged from IQ1 (How would you describe your role in your personalized learning classroom compared to your role in your previous more traditional classroom?) as teachers discussed their role in the PL classroom. The teachers discussed the shift to becoming a facilitator in the classroom, using data to meet student needs,

mentoring and relationship building with students, the shift to more cognitive/conceptual waya of thinking, collaboration, and intrinsic motivation.

Facilitator. The teachers discussed the role of the teacher as becoming one of a facilitator. While some shared of the traditional role being more of a stand and deliver or whole group model, the teachers explained how that has changed for them in their classrooms after moving to a PL model. I5 shared her thoughts when learning of the PL model,

> I guess when I first learned about this, I thought, 'Good grief, what am I going to do if they're all independently learning?' I really worried about what I was going to do because I was used to being up and moving and doing. And I don't think that has changed for me. My perception of what it was has changed. Now I'm just up and moving and doing different things. So now I'm a facilitator of a small group more so than I was the large group, or I'm doing more one-on-one than I ever have.… I still do whole group, of course. But I'm definitely a facilitator through all of those pieces.

I1 felt like she became a bit more of a people manager than before. She balanced the large group, small group and independent work, trying to keep her students on task the whole time.

> But the other thing too is I feel like I'm more of their facilitator saying, 'Hey look, you need to get this done.' Keeping them on track but building that rapport with them. So, they're doing all of the learning and thinking, and I'm just helping them get it done. So, I don't know, is that like a people manager? So that's different.

I6 also described her role as a facilitator, taking a step back and letting the students do the talking. She enjoyed watching her students work together and find the "aha" moments.

> I would say I'm much more—or my goal is to be much more of a facilitator, I think. I would rather, like I said before, let them do more of the talking. So trying to take a step back and jump in when I need to. I mean, definitely I need to do some instruction there, but I feel like more and more, I'm letting them doing the talking, and then asking questions when it's appropriate, letting them talk to each other, letting them come to conclusions, and trying to direct their conversations so that we come to—aha moment without me actually telling them. So more of that facilitator.

I3 noticed the teachers stepping back in the classroom and the students stepping up. There were many more opportunities for students use resources to find information that in the traditional setting of the past when the teacher was the holder of the information.

> I think the biggest difference is that the students are leading the classroom. The students are the ones that are asking the questions that might take the class in a completely different direction that the teacher wanted it to. But it's still a great direction, and they still learn something. And I know that we talked about that yesterday a little bit, that our lesson plans are now more daily based off of what our students decided to get done. So that, I see a big difference. It's not necessarily the teacher lecturing a lot. It's more of the kids are finding out the answer by working backwards or watching a video and seeing a connection. So, by having them being able to start the conversation rather than the teacher saying, 'Okay, this is what we're doing today,' is nice. And I think that helps with personalized learning.

I9 noticed the shift in herself as having moved from focusing on the whole group to students as individuals. She watched as students who were not engaged as learners in a traditional setting begin to thrive in her PL setting.

> I think my role now is just to help the students with their needs and what helps them learn more, as opposed to before the focus wasn't so much on what they needed personally, it was on what I knew they needed as a whole. So now if I see a student who maybe doesn't pay attention when I'm talking but can listen to something auditorily and totally get the concept, then I realize that—or visually with a video, then they need that more than they need me talking to them. I've seen students who can't succeed or thrive in a direct instruction environment, but they get to the personalized learning and can choose their resources, be it video, or a song, or just more pen and pencil work, and they thrive. And it has to be that we're reaching them as a learner because there isn't anything else really that's different. So, I see that shifting. I see my instruction, the way I deliver it isn't necessarily different, but it's more rigorous. We go deeper than we used to go and I think that's the biggest thing. Hopefully, by going deeper their more prepared for the future and then along with learning.

I12 explained how she facilitated her PL classroom using what she calls “group studies”. She explained that her students can find a good place to work around the room and can work in study groups. The students set goals and then work to meet those goals. She detailed how her students worked together to learn while she would pull a small groups or work on-on-one with students.

> Okay. So, the kids will just take like a—certain kids are working on the same focus area or whatever. They'll just go sign up that they're working on brain and nervous or

whatever and there may be three to four kids. We have a place with dry erase boards. They go get dry erase boards. Sometimes kids go get clipboards. There's a back table that they can go to. Like I said, they pick their chairs anyway, so they may just pick wherever they want to sit with their groups. And I don't really question. I go around and one thing that my kids have to do is when they start something, I need to know the task because for me a goal is not just what I'm doing today. A goal is where are you headed and so they have to have a goal in there which could be what they're going to master next. And I need to know what your task is today because today you're doing something and that needs to eventually end up leading to that. So, it's not like smart goal, mini goal. To me, it's like here's your goal. What are you doing today to get you there?

So I walk around and I do that first. I survey it, and then I set them free while I mentor because they may work well with a group. I have kids who make flashcards. The kids have flashcards and some that are doing it that are boys. You wouldn't think. And so, they're working in groups and as long as there's not a test being taken in the room for that because I don't want whispers heard or whatever, then they're allowed to work with their study groups.

I13 summarized the common theme that was shared among the teachers. The students own their learning and the teachers act as facilitators to meet the needs of the students.

And so I think the thing that's different is now the student's own more of their education so they can move at—you give them the tools and then they can go at their own pace. And so you become more of a facilitator than an actual—you are still teaching but you are allowing the other kids to progress at different rates. And you can work with the kids that need more help.

Data. The second most common theme was that of data. The teachers spoke of using data more than they have before because it is more readily available. The platform that the teachers used holds pre and post assessment data from concept units. The teachers also had easy access to see who was accomplishing and meeting goals on the platform and could collaborate with each other to meet student needs. I1 shared that she felt as if her work was more purposeful and productive. She had data and could use it to close gaps in instruction in a way that she did not have time for before switching to the PL model and having a platform to help her hold the data.

> I would say I feel like I work less, but I know more. So, I'm still planning, I'm still teaching, but I know more because it's all in front of me. So, I feel like I'm not digging for as much data as I need to because I have it. So, I know who's struggling and I can get on them every day, or work with them, or pull a group. Whereas, before it would take me quite some time to figure out who they were. And then finding the time and knowing who would match who…I didn't have the data like I have now. So, I feel like that's why I didn't close a lot of gaps. Because well number one, there wasn't time. We didn't have the tools, and there was one person.

I10 used the data during her intervention time. She spoke of filling gaps and looking at specific objectives. The platform provided data broken down to the objective level for each student.

> [My instruction has] changed in the way that I do my intervention time.… Because with it, you can really pinpoint and see exactly what they need and where the gaps need filled, especially with objectives, because we have it laid out.

She continued, “It's specific data. Not just an overall—like they don't understand the whole concept, but it's broken down a lot finer, I feel. More defined.” I6 shared that she used the data from the platform as a pre-assessment to decide who needs extra help.

> I kind of use a concept as a pre-assessment. So, do this, and then I look at it, and then from there, I decide these are the kids that need some extra or these kids don't. So, the kids that don't then get to continue working on their own platform. These kids need some extra help, so then they come over. And I think that is really how it should be working, right? So, these are the kids that need it. These kids don't. And I can do that.

I5 noticed a difference in being able to real time information to make student-based decisions rather than waiting for the more traditional weekly assessments.

> I have current, up-to-date, minute-by-minute information at my fingertips which is helping me make my decisions rather than waiting for a weekly test and then adjusting. I'm able to adjust even more individually than I did before. And I'd have this information to be able to pull back and do a small group. But then I also have materials and resources at my fingertips that they can—that I can have to retake content. You know what I mean? That's always been a struggle for me in the past is—well, if we want to give them another chance at it, do I as a teacher have to make a whole new test? There you are cutting and pasting and doing all kinds of things.

I3 detailed her perception of how the platform helped her. As a special education teacher, she could see where her students were and compare them to peers. Her access to the platform information allowed her to collaborate with other teachers in a much more productive way than in the past. “You can see one kid who's struggling, and you could actually see them

struggling on that platform. But then you can see another kid in that same class who's soaring above and beyond and can help that student too." She also shared,

> Instead of having to go and grab the information from the teachers, I can just see it right then and there. So that's easier, it's a lot more collaborative, I think, because everyone has access to the curriculum and can see it, see the answers that they're supposed to get on the test and everything. So, it's easier to work with the teachers, I think, and see the students' progress.

Mentoring. As the third theme that emerged, the teachers described a piece of PL that they did not do prior to implementing PL in their classrooms. Mentoring is what they called the relationship building piece of PL. I10 described the process,

> I have a schedule set-up where I'm scheduled to meet with them once a week and we meet for about ten minutes. Some are longer; some are quick and short, because the kids are very focused and want to get the things done. But we talk about their goal, what they want to do for that day, what they want to get done for the next time we meet, whether it be academic or personal. Some kids are very athletically inclined, so they have that personal goal and how that fits into their life. And we just talk and see how I can support them, what I can do, and so sometimes I touch in with them, 'Oh, you said you wanted to get this test done.' And so, see how they've done with setting their goals and going in that direction.

I5 shared, "That's been probably the biggest shift for me is the one-on-one piece, the mentoring. And that's actually been probably—it was one of the hardest pieces because of time." She continued, "But it was also been one of my favorites. I love having that one-on-one time. And that has been a huge shift from traditional role." I12 explained her thoughts on how the

previous model of instruction wasn't really conducive of the relationship piece. She appreciated that she now makes the time to meet with her students.

> But what I think has changed a lot is there's that aspect that you want to create the relationships with kids. And you're always trying to fit that in. And it gives you a zone, like this is my time where I can meet with kids. So during that personalized learning time they know they own that piece of time with you and while you help direct them the rest of them also learn I'm engaged in something else I'm required to do on my own, they don't need those reminders and it kind of gives you an excuse, if you will, as a teacher to function in that capacity without it having to be for a reason. Like, ;Oh my gosh, I have to reteach' or something like that. So, during the personalized learning time itself I feel like that's such a benefit for—kids are much more mindful of what their tasks are at hand then they were just, let's say, finishing work. Or if you want to call it study hall even when they're supposed to be engaged in something because they're not just finishing work, they're moving forward to engage in something that's new and fresh. So, I love that part because before you weren't really allowed to have that part.

I3 shared the benefit of having the students create goals during the mentoring time. She helped her students create personal, social and emotional goals. She shared a story of a student that was motivating herself.

> I have a student who just showed me a cute little Post-It on her Chromebook, that was just a cute little motivational thing for herself. I was like, 'Oh, that's really sweet.' Because they would just normally say, 'Oh, whatever. I just don't get it, and I'll just be passed on.'

I1 shared how the mentoring piece has helped her team become stronger for the sake of students. She began to feel less isolated in her classroom and she had a team helping her track student needs.

> I feel like we're all on board because we mentor the kids. And so other teachers can come and say, 'Hey, so and so is really struggling with fractions, can you meet with them?' So, I have more hands on deck to remind me like hey, don't forget about this one. Then before it was like just me, and nobody else knew what was going on in my classroom because they didn't see my lessons. They would see if the assignment went home, but now they can see it all. So, when a mentor is working with one of their homeroom kiddos and they're like, 'Man, he's really struggling with decimals,' they can send me a text, or whatever, and it's just more information. That's stuff we didn't have before. So, I just feel like I know more but I don't work as hard because it's all there. Which makes me a better human and a better teacher.

Cognitive/conceptual skills. The fourth theme that emerged is the shift from basic content as being the sole focus of instruction to cognitive skills and a more conceptual way of teaching and learning. The cognitive skills are described as analysis, reasoning and finding evidence. In shifting to a conceptual way of thinking the focus shifted to a more conceptual, big picture, thinking instead of viewing each piece of content as a sole idea. The content was viewed as a piece of a big picture and it all fits together into something else. I4 explained the shift in her thinking,

> I've never been the stand and deliver teacher. So that's not been a big change for me. The big shift for me is my focus on cognitive skills versus content knowledge. I need to facilitate more because they're in charge of the content learning, whereas when I'm doing

whole group, that's where I'm more focused on these cognitive skills, the analysis, the reasoning, the finding the evidence. That's where my focus is now; whereas, before, it was getting them to learn the content. So that's been a big shift for me.

I11 described how the shift to conceptual teaching can look in a math classroom with concept units, linking math to the real word. She is still started with a whole group before moving into small groups. The small group work was where she was seeing the most difference with the growth in cognitive skills and more conceptualized learning. She detailed the balance as she transitioned her students,

> I'm still introducing the concept for math. I'm still there introducing the concept. I'm still giving them the examples that they need to each kind of be successful. So, there is some direct instruction still going on. There needs to be—they need the procedural. But then, when they do the activities, they're working in groups and that's where we see the conceptualized learning. And that's really where you see them stretching their thinking and they're kind of—starting, to me, that was kind of the uncomfortable part of the beginning. They really liked the old way of… it was what they were comfortable with: 'My teacher teaches me, then I do it, then I'm assessed, and I show my growth then'. The kind of taking it, taking that kind of procedural idea and then applying it to real world situations that are a little bit more challenging and that aren't as straight-forward, that was a challenge for them. So, I think that, me, kind of giving them that kind of first look at, this is what we're doing, these are the steps behind it, but then giving them the opportunity to kind of explore more on their own and in groups that's the kind of big change between what I used to do and what I do now. So, it can be difficult as an educator too. We want to always be there, to help, to be giving them the answer. To

kind of, stepping back from that now and even more so, now that we have personalized learning and saying, 'Well, what do you think about that? What can you do to help yourself learn that? What resources did you have at your disposal to kind of try to come to that answer? And then if you can't, then come to me and we'll kind of talk about it together."

The shift to making things meaningful impacted I1 in more ways than just the instruction. She began to see more meaning in what she was doing for students and wanted to focus all of her time in meaningful ways for her students,

I still teach a normal math lesson, but it's more conceptual, Tuesday through Friday.… And I build my own units based off –which I'm still, that's kind of my thing. So, I'm still being able to do that but I also feel like I'm still, like I said, I don't know why, I guess you're not doing as much but you are. I don't know how to explain that…. I guess that's what it is. [My time] used better than to all of the stuff that I was doing before that was just meaningless. Grading. And putting grades in a grade book. That didn't mean anything, that nobody was looking at. Where now it's like I'm building these concept units based on what they need to know for the real world. To pass focus areas, to be successful in science and just the way they think. So yeah, I think that's what it is. It's being used in a different way. It's not just that busy work, like oh, I've got to enter these grades.

She described how she took the base curriculum provided in the platform and added and adjusted what she needed for her students. She spoke of the procedural, the conceptual and the resources. It has been an adjustment for her,

> Well, I take their concept plan. I just made one. I take their concept plan, and I build my own unit. So, this is going to be their—they make a poster for the how-to. So, this is the procedural, and all of this is the conceptual. But I get it from what they give as resources. I just put it together because I like the idea of paper for math. So, it doesn't take me long. It's just a matter of, okay, deciding what resource do I want to use? Using Engage New York is different from what we were using before, but it's wonderful. So that's been a change. But this doesn't take me that long, and then I'm done planning for the next couple weeks, instead of trying to be like, 'What am I going to do today?' I know. And every single block is different because they're all student-led.

Creating conceptual units has been an adjustment for her but she repeatedly shared of the positive impact PL has had on both her and her students.

Collaboration. Along with the other themes, the theme of collaboration is woven throughout the interview responses. The teachers have relied on each other to work through the new way of teaching and learning. The teachers commented on feeling like new teachers again as they were moved out of their comfort zone and into a whole new way of thinking. I16 shared, "We didn't collaborate as much before because we'd been doing it forever, some of us for decades." She continued,

> So it kind of forces us to do that. And since it's new, it's nice to be able to bounce the ideas off people. What are you doing? How did you do it? I kind of went back to my first couple years teaching. I was in this classroom asking wondering, 'What am I

supposed to do? What am I doing? How am I going to do it?' So, we're back into that kind of new-teacher mode, in that, 'How does this work? How are you doing it? Oh, I'm going to try that.' And then I know that's something we should be doing whenever, however long you've been teaching."

Intrinsic motivation. Although not a common theme, I11 shared the shift she has noticed in her students as she has become a facilitator. When she gave up the control and allowed her students to move on their own, she noticed them moving far ahead in the curriculum. Some students have moved two years ahead and have shown a strong sense of intrinsic motivation. She has always pulled small groups, but she shared, this year is different.

> What I really love about the change this year is the fact that I have students who can be accelerated beyond [laughter] the seventh-grade math level. I have a student right now, he's finished all of the seventh-grade curriculum, and he's in the eighth-grade curriculum already. And so, in the past, that wouldn't be afforded to him, at least not in the way it is now, that he is immersed in the whole curriculum for the entire eighth-grade year. And he can get as far as he possibly can by the end of the year and then next year move on. Once he gets into Junior High, they'll need to figure out how he's going to move on past that. So, that's the exciting part for me as a gifted teacher. So, I am really enjoying seeing the kids kind of have the kind of intrinsic motivation inside of them to push themselves rather than just kind of wait for me to kind of be the facilitator and say, 'This is what we're doing today.' Now they get to kind of own their learning and say, 'This is what I'm—this is what I'm learning today. This is what I'm in charge of.' So that's been exciting for me to see.

Table 6

Most Common Themes (IQ1)

Themes
Facilitator
Data
Mentoring
Cognitive/Conceptual Skills
Collaboration
Intrinsic Motivation

Research question 2 outliers.

Focus group outliers. There was one outlier that emerged through the focus group process. In FG4, FG-2 was not on the same page as the other three participants in the FG. As the other participants described their classrooms and the shift from the traditional classroom to a PL classroom, FG-2 stated, "In math it doesn't work that way, I am a traditional teacher. I like desks in rows, eyes in the front, I teach." When the topic of flexible seating came up in the group, he shared,

> Well, flexible seating didn't quite work out in my room. I had a wonderful setup, but it just didn't. I'm back to desks and tables. And I'm in tables of like four, which is still uncomfortable for me and it still doesn't work, but I do have desks in rows and I did have—at one point in the year, I had everything back to rows and all the comfortable chairs were away. Matter of fact, there's a whole pile of comfortable stuff in the corner there that I got to save for next year.

In describing that he is just a traditional teacher FG4-1 shared that both she and FG4-2 were a part of the process of deciding to bring PL to the school and grade level. Though the idea seemed ok, the reality did not match, FG4-2 shared that he likes the traditional teaching and in math,

> I don't get a lot of conversation because there really isn't that much of conversation you can do in math. You either know how to do things or not, so I'm still very uncomfortable in math because learning on your own in math is kind of tough. I would have questions and kids still don't know how to do a second or third grade—like today we were stuck on empty box minus 6 equals 12. We had a hard time figuring that out today in algebraic expressions that we were working with. They were making equations. So, learning on your own in math, I don't think I'm a big fan on because I have kids all over the place and I don't know if they know the stuff or not. And there's a lot of kids that have passed the focus areas, but they're not masters in negative numbers and coordinate planes, they just happened to get 8 out of 10, so I'm still up in the air on the math part of this.

However, FG4-2 was using the curriculum from the platform.

> I'm teaching from the projects. I'm opening the activities and I'm teaching from the projects, and I'm teaching from the checkpoints because I have to make sure that I teach, and I'm also teaching from the focus areas. We are writing problems from the focus area in their books, model practice problems. I'm not comfortable leaving math, except for a few of the kids who have done outstanding work…. Yes, I have to teach whole group with these concepts. It's not working when I can just say, 'Okay, just go off and learn on your own', because they have other issues. I'm not comfortable letting them learn, sometimes I am, but for the most part, for the last two months, two and a half months, it's

> been me teaching traditional way. We practice, I teach, we practice, and then I'm almost taking up almost a lot of the time just teaching. Because these are concepts they haven't gotten yet. I mean, simple things. It's hard for me to say that, because I know that's not what some of it's about, but in math, I have to do it, because it's math, and that's the only thing that counts at the end of the year.

FG4-2 concluded,

> if it was up to me, I would go back to traditional teaching out of the textbook for math…. I would feel more comfortable when they log into [state testing] in April. Because right now, kids are all over the place.

He continued,

> I have no idea what's going to happen, and I'm not comfortable… And out of my 57 students, there's only 1, 2, 3—there's only six who have taken off, and they're beyond—some are in the Math 7 already. So those students are great, but the other 50, 51, I'm teaching whole group. And at the end of the day we all know the only thing that counts in the [state testing] scores at the end of the year. So, if I could get that done, if I could do it that way, I'd go back to that way. But, again, I prefer math the old-fashioned way.

He shared that he was going back to the textbook for math instruction.

Interview outliers. I8 participated but did not share much through the focus group process; he wanted to save his comments for a one-on-one interview. As the on-on-one began, he immediately shared, "It's been very difficult." He spent 90% of his interview explaining that he feels as if the platform that houses the curriculum holds him and his students back. He has been asked to use the platform this year but does not feel that the format helps him meet the

needs of his gifted students. He shared, "I differentiated with gifted students for years having taught them for so long." He explained that the pacing of his year is off.

> Well, it's obviously the first go around the pacing is just off. So, for instance, this year I won't be able to get to one of the books that I usually teach. Okay, I hope to get to the other things that I need to but only time will tell… it is just really cumbersome…

I8 has found one part of the personalized learning program to be "satisfying and fulfilling" and that is the mentoring piece.

> Personalizing is using the mentor system, allows me to give them supplemental items that interest them which, I guess, maybe in the whole class format I wasn't able to do. So, for instance, knowing this one student has a real interest in history, and is a history buff, and does even the collecting, I found that out more through the mentoring, and sitting down, and discussing with him. And so, therefore, I can give him other things, talk with him, talk with his parents. You finish this. Let's look what we would like him to do or what he'd be interested in doing. So, from that perspective, there is a component of personalization that definitely is a benefit in using the program.

Summative Findings for RQ2

What changes have teachers experienced as they have moved from a more traditional model to a personalized learning model?

The themes that emerged from the focus group and interview questions answering RQ2 are closely related. In the focus groups, the themes of the platform, the role of the teacher and the cognitive and conceptual skills emerged. In the interviews, the themes of the teacher as a facilitator, data, mentoring and the cognitive and conceptual skills emerged.

As teachers have transitioned from a more traditional model to a personalized learning model, teachers have experienced their own role in the classroom shift. They have become more of a facilitator, mentor and small group leader. In using a program that is technologically based, these teachers were given access to a platform that held a variety of resources for both students and teachers. The resources in the platform were organized in a way that helped teachers meet students' individual, differentiated needs. The students had choices. The teachers had choices. The teachers spent their time focusing on student needs instead of creating resources for different levels of students; the resources were already created.

The teachers shared having ready access to data. The platform housed pre and post test data that teachers used to meet with students in small groups to keep students on track, catch them up or push them ahead. The teachers shared of a component to PL called "mentoring". Each student had a "mentor" that met with him or her about once a week to go through their personal data, set goals, and build a stronger relationship with the teacher than what has happened in the past. This led into the cognitive and conceptual real world skills.

Through the shift to personalized learning, the teachers shared of the shift in the mindset from each content, area or objective as its own, to being part of a bigger picture with the focus on cognitive skills and conceptual thinking. The content fit together and the learning was focused on higher level skills such as analyzing, problem-solving and working together to find information. Ultimately, many students began showing motivation in a way they hadn't been able to show before.

Research Question 3 (FGQ3, IQ2, IQ4)

What are the perceived successes regarding the implementation of personalized learning with technology?

FGQ3. As noted in Table 7, four major themes emerged from FGQ3 (What do you perceive the successes to be with the implementation of personalized learning?), the themes of real world readiness skills, differentiation, student taking ownership of their learning, and relationships. When discussing the most common theme, real world readiness skills, teachers spoke about the increased abilities they observed in their students. The skills of analysis, reasoning and problem solving are stronger than they were before, and teachers notice students have become more confident as these strengths have emerged. The teachers shared of an increased ability to differentiate for and meet the needs of their students. As teachers discussed the theme of ownership, they noticed students caring in a different way about their progress, becoming self-starters, and wanting to push themselves to learn more. Then, the strength of the relationships through the mentoring aspect of PL is theme four.

Real world readiness skills. The theme of real world readiness skills is a theme that made the teachers visibly proud. As the teachers spoke of their students in this way the teachers lit up. The researcher felt the pride coming from the teachers. In FG1, FG1-3 shared of a success that was a marked increase from the past. Every year the students are recommended for and take a gifted test (called ALP in this school district). This year, more students passed than ever before,

> We just had a huge number of kids pass the screener for ALP, and I guarantee a lot has to do with the fact that they're able to now analyze. They're able to look at context clues and things like that, and their ability to think has skyrocketed.

FG1-1 added an example of a discussion with a specific student from her classroom,

> I'm blown away by the reasoning. They had better math reasoning than I do. They are able to reason themselves to an answer to which blows me away, and I'll just come out where they'll come in asking about tests. 'Is this one, right?' And I'll review. I'll say, 'Well, why did you choose that one?' And it was right, but it was a tricky one where there was two that I thought could be right. 'Then tell me why you chose that one?' And he actually ended up teaching me why that answer was correct, and it was all based on his reason. And I'm like, 'Oh my gosh, you're absolutely right.' I missed that. That was wonderful, and they can do that with every subject their reasoning which is amazing.

The reasoning analyzing and reasoning skills that these teachers have observed this year far exceeded what they have observed in the past. FG1-1 shared, "They become little problem solvers. They don't need us to even guide them. They can take little things and figure it out."

The conversation continued into discussion about the gifted population at the school and the significance of the PL model for the higher achievers, some who have never had a struggle. The teachers shared that in the past students seem to breeze through school and hit a wall when they were older, not knowing how to push through it because the first years of school had been so easy for them. FG1-3 shared,

> And for a gifted community, they're learning how to go through this productive struggle, which is phenomenal. Instead of getting into junior high and getting slammed, they're like—and they were a mess at the beginning of the year. And it was tears. But it was talking about it—it's okay, and now, they're not so stressed out about it. They're willing to put in the work and they're challenged. One of my boys, he said—I talk to him about it all the time. And he said, 'This is the first year where I feel like I'm challenged. In every

subject, I'm challenged.' And I said, 'Too hard?' And he said, 'No, but I actually have to think.' He's like, 'And so I'm not bored.' And that's huge.

The shift from less teacher talk and direction has allowed student to learn how to use their time wisely and make things happen for themselves, skills that will be necessary for future success. FG2-5, shared,

> They're using their time wisely. Instead of just you're supposed to be on task and reminding them, 'You're supposed to be on task.' They want to be on task, or they know what their task is, and they want to complete it. As well as come up to you and say, 'Do you have any more resources?' So even come to you as like a—before, I'm giving you exactly what you need to know. They thought we were the all end, all know. Now, they're like, 'Hey. Do you know where I can find anymore?' So, they're on a search. They're on a search for just beyond.

In FG4, the teachers discussed the progress that they noticed and the increase in confidence in the students. The confidence in evident in a way that these teachers hadn't observed prior to PL. FG4-3 shared,

> Some kids have really got into it, really in tune with it. Yeah and that makes them more confident. I mean, I see my kids now are getting more nines out of tens on these things. And then I see kids constantly coming up to me and saying, I mastered this, I mastered this. We have the conversation about, is it just I got a green, I got a green, I got a green, right? And that's like a race for them. But I feel like from where we started, I just feel like kids are—they seem so confident, they come in, I've done this, I've done that. Not all of them but I don't know. For their self-esteem, I think it's helpful.

With the increase of technology use comes a need for an increase in technology skills for all involved. While the teachers shared ups and down with the technology, FG2-5 detailed,

> That's been the best growth too. Like if I was to be able to give my testimony to something, I'll be able to say, 'Your child is learning how to use that tool for good now, and you have me to thank for it. Because they didn't have to be done at home.' She continues on explaining that these students have used technology as a toy for so long, 'there's a big shift and we took that burden on, because we became the bad guys in that sense, and we also became the navigators, and now, we're setting them free, and that is a big huge burden that we took on, but it is a blessing.' Those kids know it so much more.

The teachers agreed that the kids now know how to use technology in a way that is productive and useful instead of just using it for games and fun. The shift will stay with the students as they move into the future.

Differentiation. The teachers discussed differentiation and how it was something that a teacher strived to provide for their students. FG2-1 shared how the platform had made a significant impact in the ability to differentiate as compared to what she was able to do before implementing PL.

> The simplicity of differentiation is a huge success for this.… I can see the gaps. It can reinforce that through the focus area. I can move people along. I have students in seventh-grade math right now, because they finished sixth grade and they want to take honors so we're going to fill that gap for next year, at least get a head start on it, so I think that that's huge for me—as it's really easy to differentiate. E ven if I'm in a concept unit and teaching a small group, then everybody else has some other sort of enrichment

> they're doing, or it's as simple as, 'Okay, well why don't you work on your focus area together?'

The teachers spoke of the ease of having resources to pull small groups when they had time and the difference in the students when the teachers were able to work with a small group. FG2-4 shared, "It's easier for the students to know they need to join.… Instead of you saying, 'You're coming with me. You're coming with me', they come to us." Another teacher, FG2-1 chimed in,

> **'**Can I be in? I need to pass that too.' So, it's easier for them on their end to say, 'I'd like to be in on that session', whereas you would have a study group that I think—but I agree too, I have been able to pull small groups before if I need to.

The ease of resources and the desire from the students had allowed for more small group instruction and differentiated learning time.

The discussion in FG3 detailed how the platform helps with differentiated instruction for the high performing student that might have done a lot of extra reading as enrichment in the past as well as struggling students that might have just ignored the deadlines until they finally went away. FG3-2 shared,

> I think kids are able to move on based on their needs and where they are. Or slow down if they're not ready to move on. I mean, it's definitely more individualized. I mean, like I said, we're not all on the same thing and then we turn the page and everybody does the same thing. I mean, I think, what I'm seeing, too, is the higher-level kids are probably benefitting even more because we didn't really do a lot for them. They were done and, 'Oh, good, you're done early. Okay. So, you can read a book, or you can do something else.' Right. Whereas, now they can keep going and going and going and so they're not bored. And I mean, for me, I think I see the biggest difference in those higher students

than anybody. I mean, the lower kids, they're still struggling. And yes, they can move at their own pace, but there is a deadline. So that's still a struggle for them. Like now, we're seeing all these reds. Or even regardless of what program you're using there's got to be some kind of a deadline, even if it is at the end of the year. You have to get something done.

FG3-1 added to the conversation when the struggling students were brought up. She noticed a different kind of change in her students as they moved from ignoring deadlines because they had traditionally gone away after a certain amount of time, letting students off the hook for completing the work.

I've noticed my special ed kids are very aware of the deadlines. They still don't meet the deadlines half the time, but they're finally aware. Because before, if they didn't turn in that worksheet, that kind of disappeared and it was no longer in their face, but now that red sticks around. Or that red project is in their face every day. So, I hear about the deadlines or what's coming up in science and social studies and math all the time. So, I know a lot of them still aren't able to meet them, but they're now aware of it. And they haven't been before. Because then, 'Oh, that was due last week?' It would just go away. 'It's over now. Let's just move on.' So, they're attempting to meet those deadlines the best they can.

FG3-5 commented on how this really is true for all students.

It's a visual thing. Before we had Infinite Campus, that [the students thought] if I didn't go on Infinite Campus and I see I had 12 missing assignments, I don't have 12. I never knew. Here, you've got 12 missing focus areas or whatever, it, boom, right there, you'll

be able to see it. Yeah. It's a lot more real to them. So they have that—they know [where they are with progress]. It's not like, 'Hmm? What? Are you sure?'

According to the teachers, the increase in accountability and allowance for differentiation was a strength and success of personalizing learning for students. FG4-1 shared, "It's great for the kids who have really taken off. I mean, because where else can you do that in sixth grade?" The teachers felt strong that the students will be ahead of their peers as they move on to middle school. Where else can "sixth grade students be exposed to seventh-grade math or English or history?"

Ownership of learning. The theme of students taking ownership of learning is a success that teachers of personalized learning have noticed. As students adjusted to the new way of teaching and learning, they seemed to grow a better awareness of what needed to happen in the classroom. FG2-3 shared, "Kids owning their learning—they know what they're successful with and they know what they need help with. It's very clear to them now whereas in the past, I don't know that they had such a clear understanding." FG2-4 added that she had observed kids owning what they need to do and how they needed to do it. She observed students "creating their own sense of how they study and what works best for them." FG2-2 shared, "I think they like being more independent."

FG1-1 shared a story of one specific student that was new to the school and how the teachers watch him morph into a "whole different kid".

One of our students was new this year, he had never done AR or anything like that. When he first came in, brand new, new neighborhood, new church, new everything, I was like, 'Oh, no. We might have to [test] him'. But this student has completely—he has just soared. I mean, he is almost done with his platform. He's like a whole different kid. I'm

like, ‘Wow’. And he just wants more every day. It's, ‘Can I work on this, can I do this, can I do that? This is where I am with AR.’ He's just, he's that self-starter, and he's not stoppable right now… wow that's amazing.

FG1-4 added that the shift of becoming a self-starter was spreading. Some of the students didn’t know of their capabilities,

> And I think some of them that didn't know they were self-starters have become that way, which I think that's the best for those ones that didn't know. They didn't know who they were as learners, and they've realized, ‘Wow, I have the power to do this’. I see a lot of those.

FG1-5 shared that the strengths go beyond just self-starting. According to the teachers many students were truly owning their learning style,

> They're figuring out how they learn best, too. That's been so awesome to see that they have, even when I'm talking to them about, ‘How are you doing with this?’ And they have a plan, they know exactly what they need to do, and they have an order of what they're going to do it in… better than what I could have come up with to help them. Yeah, I mean, they're taking this and just going with it. And then the crossover, with what they're learning in other classes and coming in, and they'll talk about that. I mean, they have access to the same information, but how they access it, I think it's changed who they are. Even just like note taking. You'll see some with Cornell notes, and you'll see some with thinking maps. And they're figuring out, ‘Oh, well, I tried it this way and that didn't work for me, so now I'm trying it this way’. They're helping each other, and quizzing each other, and helping and offering assistance like, ‘I tried it this way, try that’ which means that they're seeing themselves as teachers, as well.

FG1-6, shared of students taking ownership and added of the healthy competition that he had noticed as the students compared reds and greens on the platform.

> And also, there's a competitiveness, I think that some kids have, and they don't want the reds, or they want to say, 'Oh, I've got 30 greens', and they're trying to catch their friend. But not in a bad way. I haven't seen it in a bad way. It's more like a motivational thing. And even if we're mentoring someone, say, 'Hey, come on, let's try and catch up to whoever, and see if we can turn those reds green'. I like that part of it.

The students earned "greens" on the platform when they meet the goal on the assessment for the content area and "reds" when they had not yet met the goal of the focus area and/or are behind. According to the teachers, they could arrange the platform and help the students set goals for themselves.

Relationships. The fourth theme of relationships as a success with PL includes the student teacher mentoring relationship as well as the relationships amongst teachers as they have partnered and teamed together and the partnership with parents. FG4-3 shared of getting to know more students at her school through mentoring.

> I do love the mentoring part. I know every single sixth grader. I've never known every single sixth grader. And I really love that, I love being out there and knowing all of those kids, so I think the mentoring has just brought us all together.

FG4-4 continued about perspective of mentoring which was shared with his teammate.

> So, I can speak up in developing relationships with everyone in the grade level. They know who I am, I know who they are. It's allowing me tremendously to develop relationships and kind of bring a new perspective towards things.

According to the teachers, relationships amongst the teams of teachers had grown as well as they have relied on each other throughout the transition. FG1-3 shared a success,

> We managed to keep that growth mindset and be like, 'Okay, this isn't working. Let's figure it out, let's change it up, let's.' And we worked well as a team to do that, so I think that's been one of our successes this year.

The success of the teams was briefly shared by each separate focus group.

While a few teams had struggles with parents at the beginning of the year, looking back, the teachers viewed the challenge as turned to a success as they had worked through the issues. FG1-1 shared,

> Another success too is the parents didn't quite trust us at the beginning of the year, and so that was a big huge ordeal and we went from having seven kids off the platform, and now, they've all gone back on but three. So that's the success that they saw, like, 'Oh, maybe I should trust these teachers and let them do their thing'.

FG1-4 added, "They helped us find our voice a little bit, for our students. That's a success." FG1-1 concluded,

> And I mean, to really—I really think it helped us to really believe in this, to really investigate like, 'Is this what we're supposed to be—is this true what they're saying?' Even just having to defend it really—I think it brought us together closer and gave us a focus. Like no, it really made us evaluate it. And then be confirmed, like, 'No, this is good for kids, and we will stand by it no matter what anybody says'. And we want to do it next year, and we want—I mean, none of us want to go back to how it was.

Table 7

Most Common Themes (FGQ3)

Themes
Real world readiness skills
Differentiation
Ownership of learning
Relationship

IQ2. As noted in Table 8, the themes that emerged from IQ2 (How prepared did you feel to start personalized learning? Why do you feel this way?), with regard to successes, were that teachers were excited to find ways to better meet student needs and felt better prepared to meet student needs.

Excitement over meeting student needs. Many of the teachers expressed that they were excited to be a part of something new. I5 shared, that she knew she wanted to be a part of PL because she wanted more for both her students and her own children.

> I knew it was something I wanted to be a part of immediately. I knew that the draw of teaching kids to be thinkers and longtime learners appealed and everything that I had seen that was a result of it was something I wanted for my own children. And so, I knew that. So, then I was committed to learning it.

I7 also shared her desire to be a part of PL. She believed that PL was right for her students and recognized that children weren't learning the same way. With 21 years of experience, she decided to hold off on her retirement to be a part of the PL movement.

> I did something for 21 years, and I thought I was very good at it. But I believed in this.… And I did a lot of reading online about what the program was about and what personalized learning really was, and I believed in it…. In my teaching after 21 years, I saw that children weren't learning the same way anymore. So, I needed the change and I believed in this.… I really think that this age group and forward is the right age to do this to this extent.

Better prepared to meet student needs. The second theme that emerged was feeling more prepared to meet student needs. Five of the teachers interviewed shared that they had previously tried to implement PL on their own but had a difficult time managing the magnitude of the preparation involved. The teachers who tried personalized learning along with other teachers that did not previously try PL, shared their stories of what makes PL successful. I6 shared,

> Last year, I did try.… I was trying to get myself to be more of like, okay, these kids need this. But it was hard. And I don't know why it was hard. I think I just didn't have the tools to do it. I was trying to use what I already had. Like, here's our literature book. Okay. And it just was hard. It was hard. So, I tried to do it, and I felt like I was always continuing to go back to, okay, let's all together do this whole-group thing. So then once I went through the training, though, and had this tool of Summit, it was very, very—it was so much more helpful. And it was still in adjustment at the beginning, but like anything, as I've been doing it more and more, now I feel like I'm doing it pretty well.…

So I feel now that we've been kind of like, 'Here you go. Now you're going to need to do this', and going through that training, and having these resources of, 'Here's this platform'. They have the computer. Everything's on the computer for them. 'Here are some'—the checkpoints and everything that's done for you. It's made it a lot easier to implement… but coming up with it on my own would have been difficult. I wish I could have done that, and hopefully if I didn't have Summit, I still would have been moving in that direction. It would have been slower than me going into Summit, and hopefully I would have gotten there because that's kind of where we're going, so I think there's more information on how to do it now. So I would have figured it out. It just would have been slower.

I11 also shared her story of dabbling in PL before the implementation at her school.

I had dabbled in it a bit with my sixth-grade ELA classes. A few years ago, I started a genius hour. I don't know if you've heard of it before, but—yeah, so based off of Google's model with their employees, that of 20% of their work time each week. So basically, it started with Google, and they came up with this idea of 20Time, they called it. And they would give their employees 20% of their workweek to work on a passion project, to work on something that they truly felt was something that was important to them. And the rules were, it had to be something they were passionate about, had to be something that they could share with the group and have other people learn. And they got Gmail out of it. Oh, what's their version of Skype—they got from 20Time. So, through their own passion, their independent projects, they came up with these amazing things that we now all use. And so educators then thought, 'Well, if they can do it, why not with us?' So I heard about it from a colleague of mine. I thought, 'Well, that's perfect

for my students'. That's right up their alley because they are so passionate about their own things that they like to research. I started with my students three years ago and I would give them every Friday to kind of come up with driving question that then I would sign off on. They would research and then the rule was you share it with everyone else. You learn about something that's passionate to you and then you share it with the group. I've been doing it and will continue to do it. That was kind of my only introduction to personalized learning and then we got a little bit into defines and programs as well last year where we did a few projects. But I really wasn't fully comfortable with having that be my whole curriculum. Then I went to the Summit conference in the summer and I was just completely awaken to what personalized learning truly is. And the benefits for all students but especially from my gifted students. I was really excited about the prospect.

Teachers that had not yet tried to move to a PL model also share of how prepared they felt starting PL. I1 shared,

> I feel like having my concept unit, knowing exactly where every one of my kids are, I feel more prepared than I ever have. And like I said, that shift didn't happen probably 'til later on in the year. But it's like I feel like coming in on Monday. It's a PLT day. I know exactly who I need to work with and what we are going to do today. And I start lessons on Tuesday, but I don't feel like I'm taking loads of stuff to grade and wasting time.

I12 shared of her success once realizing it was ok to not be in control and to let the students explore and learn from the platform.

> I'm willing to take risks and I like to learn things. It's exciting for me to learn things.… So, for me this was a little bit nerve wracking. Once I felt like it was okay for me to realize as a teacher and even as an adult with this generation they will always be ahead of

us, and when I could sit in that spot and go I know kids I can ask questions to, even like the simplest things like even if we were doing something on a Google Doc and I want to know how to—we're going to go in and highlight only certain things, whatever it is. I have kids that can do it. I have kids who are able to find things on the platform before I was. And just did you know that we can see this on this page? But once I realized that's an okay place to be, like we don't have to be in charge of everything… we don't have to be in control.

Table 8

Most Common Themes (IQ2)

Themes
Excitement over meeting student needs
Better prepared to meet student needs

IQ4. As noted in Table 9, the most common themes that emerged from IQ4 were purposeful time, resources, real world skills, and relationships. The teachers spoke of having little to no down time in the classroom which they see as a good thing. Since the switch to PL, many teachers are doing whole group, small group, and individual instruction in a way they have wanted to but not been able to before.

Purposeful time. I1 shared her thoughts on how her time had shifted. She noticed a difference in both her students and herself making use of every minute of time. The down time for students no longer included extra reading time, which was common practice as enrichment before PL.

> Useful. Yeah. I think for them, too. I think it is. They are using their time wisely. They are not just reading a book. They're actually taking notes. They're hearing, reading, seeing it. They're actually—it's not just a waste of time. They're actually constantly learning, whereas before it was like, 'Okay. We're going to have 20 minutes of AR'. And you didn't know if they were really reading. And now you can see what they're actually doing. Yeah. It's amazing. I was like, 'Where has this been? Where has this been?' And I think that's the thing is at the beginning of the year, we had that struggle because there's all these gaps because that's what was happening. And now hopefully those gaps are even a little bit more closed because they don't—it just seems like no time is wasted. It's all valuable on something. And half the time, I was like—I think, 'What would happen if we didn't have this and I didn't know all this' because even though I have a homeroom and I teach just math—like I said, I feel like I know all of them because I can see it. And obviously, I talk to them. And I see them daily. But I wouldn't know that stuff. I wouldn't know that Ben, who has ALP [gifted class], that I don't see for math, passed his social studies content assessment. I wouldn't know that unless he told me. So, having those tools, I'll be like, 'No way. You did it.' And they know that I can see all of that, so. Yeah. It's meaningful time.

I6 shared of feeling like a better teacher. She spoke of feeling like she was giving the kids more than she has been able to in the past through better resources and just better, quality time.

> I think it's been great. When I look at what I'm doing this year, and the rigor, and the content, and how deep we're going with things, as to compared to last year, it's so much better. I really feel like a better teacher. I feel like I'm giving them some really solid, rich material, and stuff that I have access to now, and then they get to take that and personalize it, and kind of change it for themselves. And what a great feeling, right, is that I get to take this, and I can take myself as far as I want, and I can do this. But yet, we're still in a classroom. And we're still a group, and we can work together. But then I can work on my own, and I think especially for gifted kids. I have a lot of gifted kids that just want to work on their own, right? But some of them don't like working so much with a group, and just want to work and get ahead, and so there is that component of it, but that's not the only component. So, we still have—and then I just love the projects and everything. It really makes me think. It makes them think. It's not just 'here you go'. They are having to figure things out, and they're having to struggle. And it's good for them to struggle. It's challenging. So, I think it's been great. And as a teacher, I have this wonderful feeling like, 'Oh my gosh. They're having a really good year, and they're going to leave this year having gotten so much', in my opinion. And that makes me feel great that I gave them a good school year. Yeah.

I7 spoke of teaching in the way that students learn. Before moving to PL, she recalled books and worksheets.

> I feel like I'm teaching more of the way the students need to learn, as opposed to just opening up a book and doing worksheets. I'm not a worksheet kind of person. I didn't teach a whole lot of worksheets.

She continued, "… I like that I can branch out… If I believe in it, I will do my best with it… but I do see ways that I can change it and make it better without losing the fidelity of it."

Resources. The second most common theme was resources. The teachers shared that the abundance of resources is what allowed the teachers to help meet so many needs in the classroom. While the teachers spoke of the benefits of the program for themselves and the students, they shared of the resources being used in the classrooms. The technology that holds the platform is used by the teachers to hold curriculum and data about the students.

I11 shared that she can provide her students with new and challenging information from the resources that are available to her,

> I have no doubt now that this is beneficial to my students. I mean, just the fact that these kids, the majority of them love to learn. And they want, I mean every day to have something new and challenging for them and this affords them that opportunity. And gives me the opportunity to give it to them through resources that are valuable, and they're right there at my fingertips. And all these incredible resources are right there to share with my students. And give them the challenge that they need and deserve. That's really exciting for me.

I10 shared of the benefit to her as a teacher as well as her students. Seeing that education was changing, and technology was becoming a reality in classrooms, she appreciated the platform and curriculum that has provided. She spoke of curriculum, rubrics, videos and more,

> I really feel that it's the way school was headed. Education is just headed in the technology realm. It's not going anywhere… but it's a huge benefit for them to know how to navigate, how to find things, how to problem solve quickly. And the same for me. So, it's a tool…. So, for me, it's been really great just to have things in one spot so that I don't have to spend hours of my time searching for different resources and things like that. Once I find something, I can just plop it right in there, and then it's all centrally located, which is super helpful. And the rubrics are huge even though I've had to change wording on them because they're very high end and a little—I shouldn't say a little—very over the head for the kiddos. So, had to change some of that wording. So yeah. So, it just houses the rubric on how I'm going to grade the, what I expect of them, examples too, so that it has some examples—links to resources, links to great videos, and catchy tunes for them to memorize.

I13 shared that she was able to reach more students and could closely monitor their progress. "You actually see—because of the platform… I'm able to check their progress, look at it and go back and see what they're missing… before they get too involved in a project." She continued, "So that's been an advantage. I think it helps us to be more hands-on and we're observing more of their actual skill levels, too." I17 shared his views on teaching science and

social studies with so many options in the platform for students. The students can choose how they want to learn something and then how they will present on it as well.

> I think the benefit of personalized learning in science and social studies is options. We were giving the kids more options than they had before. So like, with their newspaper. They get to choose, 'Hey, what extra thing do you want to add to your newspaper? Or the articles. What are you interested in? Are you interested in the Roman government? Are you interested in the daily life of Rome? These are your options. Choose.' And so they have a lot to choose from.

And he continued to share of the options when presenting materials,

> Whether it's a Google slide, or it's going to be the documents or it's going to be written down or however they want to do it. And it's interesting to see. It's kind of split 50/50 in my classes, as far as whether kids that want to do it on the computer or are like, 'Whatever. I'll just do the old-fashioned poster, like we have done.' But it gives them options. And we're teaching them to work together more. It's not my way or the highway.

I15 spoke of the constant change. PL is not a one size fits all and it took continuous evaluation of both practice and materials. Having options allowed teachers to make choices that meet student needs.

> We're constantly changing what we're doing and kind of reevaluating, seeing where we are, what needs to be done different. So, I think it's made us take a much harder look at what we're doing, why we're doing it. And like, 'Okay. We're going too fast. We need to slow down. We need to go back and revisit something.' So, I think it's been very helpful in the aspect of just evaluating our instructional plans. It looks different because we're

> actually deciding what we're teaching. I think before we were just following a format; whereas now, we have options that we didn't have before and we're incorporating old school and new school—It gives us options. It gives us options.

I9 noticed the benefits to both teachers and students. "it benefits me because I'm reaching my goal of helping students and helping them be their best selves, but it also allows me to differentiate in a way that I haven't been able to do as easily before." She continued,

> I don't have to necessarily—I mean, we've all had lessons that have taken longer or less time for some kids than others. So, I don't have to plan ahead for that. It's very easy to differentiate and provide something for everybody and reach everybody at the same time with personalized learning.

I1 shared a story of a student with a history of behavior problems that is now learning in a way that works for him and he is being tested for gifted. "Nobody would have seen the giftedness in him without this data or the platform because he's that kid who was always misbehaving, and all over the place."

Real world skills. The theme of real world skills emerged. Real world skills are what the students will need for the future. The teachers spoke of students understanding strengths, weaknesses, and learning styles, advocating for themselves, persevering through difficulties and working together as a team to accomplish a goal.

I3 detailed the different ways that she began to see students learn. She noticed students with needs realizing accomplishments for the first time. Her students were developing a better understanding of their own strengths and weaknesses and learning to celebrate the successes.

> I think the best thing about this is that they are able to see the best way that they learn. There's access to games, videos worksheets, articles to just read if a kid really loves to

read. And I have a few of those. They have articles and articles in their binder. Then I have kids that are that are always playing games or listening to a video, seeing just someone else talk to them about how to do it. And when I sit down and try to make a plan with somebody and I go for the resources, like, 'Do you want to use that one?' They're like, 'No, I don't do well with videos.' They can tell me now. And especially with special ed. Normally, they would have no idea, their strengths, and their weaknesses. A lot of times they just know their weaknesses. They don't see the strengths. And now that they're accomplishing things, things change form red to green or from yellow—or from red to yellow to green. And they see that progress actually in front of them instead of me just saying, 'You're making progress."' And they're like, 'Yeah, yeah, whatever.' So by being able to able to see all the progress that they've made and everything they have done in the whole school year they're like, 'Oh my gosh. We do all this?' I was like, 'You've always done all this. Now, you just get to see it.' It gives them little butterflies in their heart, so I like that.

I2 shared of a student that began as a struggling student and worked hard to get on track in a way that the teachers had not seen before, which led to other students advocating for themselves. The struggling student got to a point where everything on her platform was green, a sign of being on track. He recalled, "She stood up and was like literally shaking. Like, 'I got everything green.'" "I'm getting goosebumps," he then commented.

And the other kids were cheering for her… and then that showed some of the other kids, hey—I can do this. She worked her tail off for three, four weeks to get caught up on what she was behind and then the other kids, it's not that hard…. And once they realized that, I think that's benefited them and I think it will moving forward. They'll advocate for

themselves, they know what to do, how to take notes. Even if a teacher in the future just gave them a text, they would know what to do where other students who haven't had this experience would struggle.

I12 noticed an increase in maturity in her students in a different way than before. She watched her students begin to set goals, prioritize, and use technology in a mature and purposeful way.

I think that the personalized learning is helping students be more mature. They're having these tools [of technology] anyways. I think it's teaching them a mature use of the tool. I think that it's helping them learn how to gauge, not to rush, and when to move forward. That's one of the things I like. I am not interested in someone racing. I like those kids that are able to just go, 'I'm pacing perfectly,' because that is a pace you can keep up for life. That's what you're going to need. It's a skill that will stay with them once the line has disappeared. All that stuff, you would now actually know, 'If I'm behind in this, here's how I'm going to prioritize,' even in their own life. It doesn't really matter if it's in their career or whatever, 'I can prioritize today. That's behind. I need to catch up with that, and this is moving forward.' So, I see that aspect very, very powerful within a career setting as well as further education. So, I like that part of it. I see that it's good for the kids.

I4 shared of the growth he has seen in his students, "just their ability to think, and work together, and reason, and talk things out, to me, that's worth it." I5 detailed,

Just even growing as understanding our own learning and the learning of each other and valuing that, I think that has been—that's one benefit. I mean I really could go on and on. The things my kids are saying. I've gotten emails from my kids saying how much

> they are so grateful that they are learning this perseverance and not giving up. And that before, they would have and now they don't. They're advocating for themselves. They're sending me emails asking for help. They come in and ask for help. They are taking charge of their own learning. They're empowered and how amazing is that? I mean, I have a 17-year old. I wish he would have gone through this. He's very gifted in all areas. He could have used this program because he—I just wish he could have. My middle son too. He just left last year. He's in middle school this year and I wish so badly he could have. Just because of all the personal growth that I see in these kids that's going to take—that they're going to take with them forever. It doesn't matter if they remember where a comma goes after an introductory element. They're going to know that they can figure it out and they're going to know that they can get through it. And they know how to ask for help. I mean they're just—the skills that are going to surpass this year and every year from now on. So that's exciting to me.

Relationships. The fourth theme that emerged is the theme of relationships. The teachers mentored the students and got to know them in a different way than they had known their students before. I14 shared, "The mentoring piece kind of keeps us on that one to one contact with the kids as far as what they need and how to better prepare for lessons, understanding where their needs are, what are they not understanding." I8 explained, "I found the mentoring piece very satisfying and very productive… [It] has allowed me to see and deal better with students one on one." I13 noticed the difference in her students after building relationships through mentoring,

> They're not afraid to ask questions, I find that the communication I think is better between the students and the teachers because when we talk to them we know where

they're coming from and I don't think they're as afraid. It's not the old teacher and oh, you stay away from them, you don't want to ask them or be noticed. So I think that's a big difference.

I5 shared what she went through as she began her PL journey. She was pushed out of her comfort zone and now has more empathy toward her students. She shared the story as she connects with her students.

I think [PL] has benefited all of us actually. It has stretched me beyond what I thought I could be stretched.as a teacher and a learner. It really helps me to empathize with them. I mean, I sat in that training thinking, 'Oh my goodness. This is what they must feel like when they feel like I'm speaking another language. This must be what it feels like.' And I learned about what I needed and so on. I wanted everybody just to be quiet and let me read this. Let me soak it in first before you start talking. Like little things I learned about myself that I needed made me emphasize and be more—I don't know, just understanding of the different needs in my classroom. So, I even used some of those—we're all going to read quietly, because I recognize that other kids need that too. And so just being in that hotspot—being as a learner in that seat again and being vulnerable and questioning my own intelligence and my own abilities made me empathize with my students. And so, it's made me a little bit more understanding and patient I think. And so, I think that's benefited them. We've talked about—I've shared my struggles. They know. 'Hey guys, this is harsh for me and let me tell you what I had to go through. Let me what I thought about myself. Let me tell you what I was thinking in my head'; and so I was able to share that with them and how I've overcome it. I implement growth mindset with this.

Table 9

Most Common Themes (IQ4)

Themes
Purposeful time
Resources (including for Data, Differentiation)
Real World Skills
Relationships

Summative Findings for RQ3

What are the perceived successes regarding the implementation of personalized learning with technology?

Eight themes emerged from the focus group and interview questions that answered RQ3. In the focus groups, the themes of real world readiness skills, differentiation, student taking ownership of their learning, and relationships emerged. In the first interview question, two themes of teachers finding excitement in finding a way to better meet student needs and feeling more prepared to meet student needs emerged. And the themes that emerged from IQ4 were purposeful time, resources, differentiation, real world readiness skills and relationships.

As teachers moved to a PL model of instruction they felt as if they were able to meet student needs in a way that they hadn't been able to before. They had choices and resources at many different levels and a plan to be able to differentiate and personalize according to student needs. Teachers had readily available data to know what the students need and were meeting with students in small groups or individually.

The students were taking ownership of their learning, and the abilities to analyze, reason and problem solve were growing. Students were gaining confidence as they learned of their strengths and weakness, figuring out learning styles and what they needed to do to become more successful. Students and teachers were getting to know each other in a way that they hadn't been able to before. The teachers used their time working with and planning for students instead of creating materials and the students spent their time meeting the goals they had set for themselves and with their teachers and mentor. The switch to PL generated an excitement as teachers found success with students and felt prepared to meet the continuously changing needs of student.

Research Question 4 (FGQ4, IQ2, IQ4)

What are the perceived challenges regarding the implementation of personalized learning with technology?

FGQ4. As noted in Table 9, four themes emerged from the answers to FGQ4 (What do you perceive the challenges to be with the implementation of personalized learning?) regarding the challenges of implementation: time, management/monitoring students, parents, and resources. The first challenge of time included time to get to know expectations, curriculum and work with the students. The next challenging theme of management and monitoring included monitoring students with topics of technology, motivation and behaviors. The third challenges theme, resources, included the resources, curriculum, and standards. The fourth challenge was helping parents adapt to the new learning model.

Time. The theme that the researcher felt strongest from the participants was the challenge of time. While the groups did not elaborate on this as much as some other topics, time was the first concept to come up in all four focus groups and it was woven throughout the

discussions. The teachers were firm in the need for time to get to know the curriculum and technology and time to check in (mentor) and work with the students.

In FG1, the conversation began by FG1-4 sharing, the need for time "to check-in because you can't just check-in once a week. It changes every day so I constantly feel like I don't have enough time to check-in." FG1-1 added, "I feel like we need an hour of more school a day. That would work.… The scheduling has been a challenge." FG1-3 shared, "There is not enough time for math" and FG1-4 chimed in, "No. And so we're trying.… But it's hard because we have other district requirements on top of—if we just had a whole day, we could do it." According to FG1-2, "Trying to fit in the teaching and then you also have your PLT/mentoring time and then I need some intervention time. Having all of those things and you have specials and you have lunch, [time] just gets taken away." FG1-1 concluded, "It's a scheduling nightmare. But we're making it work."

In FG3, participants spoke of challenges in working with the students and having enough time to accomplish the goals along with teaching time management to students. FG3-5 shared,

> The challenges is just getting them focused on you have a certain amount of time to get this done. Or was it Friday I started my science and social studies projects due Wednesday the 7th. I'm like, 'Okay, you work on what you need to work on.' And then as I'm pulling kids up, those kids that are struggling again, they're like, 'Well, I don't have much done.' I'm like, 'We've had three days. You've had five hours of class time and you've done four questions. Why is that?' And trying to get them and trying to stay on top of them, as well as get the other 25 kids up and see how they're doing and following through with them. I think that's the biggest challenge with this age group where they're

still trying to figure that out. 'Well, okay, Mr. Phillips said I got six days, so that's nine hours, and it's only going to take me an hour. I'll just do whatever until that last hour.'

FG3-2 added, "Well, there's not the daily accountability [of the past]." She continued to explain starting with how it was in the past and how some of the students were interpreting due dates without someone there to closely monitor them,

> I'm checking in homework. 'Johnny, you're missing your homework. Now I know you're behind.' Whereas [now] if they don't say anything, and they're working and you think that they are on task and they're doing what they're supposed to and we get closer to the due date of the project, 'Oh, I'm not done yet.' That is a struggle as far as just us being more aware of where they are at each step of the process.

FG3-6 concluded, "Time management is definitely the hardest part"

Management/monitoring students. The next most common theme was that of concerns with management and monitoring the students. The teachers spoke of the difficulty of having only one teacher in the room and trying to do everything at the same time. It was an adjustment and both the students and teachers took some time to figure it all out and the students took advantage until they figured out what the expectations were, especially with technology. FG1-1 noted,

> I think a challenge, too, is when they are doing that personalized learning time is being able to monitor all of them. Because they're are pretty techy, and they have tricks and stuff that we don't know about and we don't have the tools that we need to be able to monitor. So we're trying to do it without those tools and that's been a challenge. Because even though you think you get to that point where okay, I have them all down. I'm

trusting it. There's still always going to be that one and that's just—for me it's frustrating because it's like, 'Oh, how can we manage this?'

FG1-3 added to what her colleague was describing with an example from her own classroom,

> Sometimes it is not blatantly inappropriate use. For me, I had one kid take a diagnostics six times in a matter of 15 minutes. Well, when I kept looking over yeah, he was on a diagnostic. I didn't realize it was six different ones until I pulled up his thing and saw. I was like, 'What is happening?' So that it a challenge.

The homeroom teachers in FG4 described having full classrooms and many behavior problems. They also shared the same concern as those in FG1 in the management of the technology. When sharing of the challenges, FG4-1 stated, "a lot of kids, too many kids." FG4-2 shared, "Behaviors." And FG4-1 shared, "It's a lot to manage." FG4-2 continued,

> You put a kid—you put an 11-year-old and you give him a computer with internet access you're not going to be able to—we had lots of issues with that. We still have some issues. We still do. But you put that in the hands of the kid that you're not monitoring all day because they're sitting there. Unless you walk around constantly or having everybody face the same way like in rows and you stay behind them it's not going to happen. That was a big thing. Going off-site and doing other things when they should have been doing their work. You've got somebody sitting against the wall over there and you're trusting are they on-site. What are they looking at? You walk around you can see the finger go tabbing off. The screen flashes a different hue or something. Especially if they wear glasses I can see all those colors in their glasses. Here comes my teacher. Oh, okay. Yeah. So. And when they're really intense. You're not that intense with science. Come on. And I sneak up behind them. Oh, what?

FG4-1 added, “And now they've learned how to delete their histories because we were checking their history. And then we get things from the district, "So-and-so was looking up...." FG4-2 concluded, “So that’s a huge challenge.”

In FG3, the comments were very similar to those of FG1 and FG4. FG3-2 shared,

> I think it is hard when you are the only teacher in the classroom. It does make it hard because you can't really monitor what everybody is doing all the time, and we found that out this year that they are finding things that we were like, ‘Oh, didn't think that was going to happen.’

FG3-5 likened what he had noticed happening in his own classroom to the memories of his high school days,

> I wonder if there is some way to, like, going back to my high school days in driver's ed where you're on the little simulator thing, and the teacher just pops in and sees if you're running over people type of thing. It'd be nice if there was some type of technology that we could have where I could just click on it and see it.

FG3-2 chimed in, “…just click on George and see, “What are you doing watching.…”’ FG3-5 laughed, “Woody Woodpecker!” FG3-2 continued, “Without you having to walk over there because as soon as you walk over, you see them scrambling. And then I can’t catch you. Yes, so that would be good.”

In addition to the challenges with the monitoring of technology, the teachers felt challenges arise with motivation. The students were not used to learning in this way and the behaviors that they had learned in previous grades were carrying over. FG1-6 explained, “In the

earlier grades, you can redo, redo, redo. Not that we don't, but at some point, it's like we're moving on. Which, it took a while for them to get used to." Or as FG1-4 explained,

> When the quarter ends, 'Oh, wait, I still owe that from last quarter? What, I still have to do that project?' 'Yeah, it's not done until the last day of school. So, yes, you will get this done no matter how long it takes you.' 'Oh, I didn't think had to do that.' That is what they were used to for five or six years.

FG1-1 elaborated on her perspective of what the students were thinking and what they had to shift to,

> I think the focus of—it was a challenge for them to really to focus to the idea is to learn. Not just to get a grade, but it is actually to learn this, because you're going to apply it everywhere. I mean, that was a challenge for them. And the perseverance at first was really a challenge for them. They wanted to cry, they wanted to quit, they were frustrated, but I mean, every year we've tried to teach perseverance. You give them the motivational stories, you read them the books, you tell them about the celebrities that failed. But now, they're living that, and they don't see failure, on a content assessment, as failure. It's, 'Okay, I need to do something different.'

The teachers needed to be there for the students to be able to coach them through the shift as it was difficult.

The teachers have found that many of the unmotivated students are still unmotivated and that is a challenge, especially when the teachers see so many students thriving in this learning environment. FG1-3 shared, "those unmotivated kids are still unmotivated. This was not a magic cure for them, and we were worried about them. And it's still hard finding what motivates them."

FG1-6 added, “It probably does motivate them more than normal standard teaching would be, but there's still a large number who are like, ‘I don’t care.’” Even though the challenge is still there with the unmotivated students, the number of unmotivated is shrinking. FG1-1, noted,

> But I think in my homeroom though, I think that's changed since the beginning of the year. I think I'm down to two who really just don't care, where before it was like a whole handful of kids. Because they're used to not being held accountable, because who can track all that? One human just can't track all of that.

Parents. Two of the three focus groups felt strongly challenged by their group of parents in the beginning, while the other two groups noted communicating with parents about the change was a challenge because of the large degree of change. The parents were not expecting such a large change and did not quite understand what was happening. FG1-3 shared, “I think it was a challenge communicating to the parents what this was all about. That was a big challenge. Especially when we didn't fully understand it at first. That was scary.” FG2-5 detailed,

> Our community was a huge challenge because they see the words personalized learning platform, and we tell them—and it's on a chrome and they just thought that we were kicking back with a book and our water bottle for the day.… That was huge for us because they're not shy in front of their children, so then that transcended into our classroom, which transcended into other people.

Even though the teachers described a community that is up to date instructionally, FG2-3 shared, “this is a community who—they’re not crazy about the changes. Not the big changes, it

happened when they departmentalized. It's not new, that something that's just coming up and innovative is [causing a problem]." FG2-5, tired to put it all in perspective for her group,

> Right. But with the adults, I feel like there's going to be a mind gap for a while till it's filled. Because in their mind, school is taught a certain way and they're the adults right now, and so that gap continues because they stopped learning. You know what I mean? As far as receiving their education, and so they assume it should be done the way. And so that's going to continue until we have these technology students graduated and being the parents. That's going to be for a while, I think, for anyone, any community that implements it, I think. Because that's what their mindset is.

Resources. The fourth theme that emerged from the answers of FGQ1 was the resources and standards. The teachers discussed that they felt challenges with vetting the resources and then making them work for them. FG3-2 noted that in the beginning, they needed to go through and vet the resources and that is not something they were prepared for, "having to kind of go through and vet all the resources. That was a big struggle for us." FG2-2 shared a challenge of the difficulty of some of the material. "I find challenges sometimes with it not being—it's too difficult sometimes for them to do independently." FG4-4 shared a similar concern but in more detail,

> …then the challenge definitely modification and supporting those students that may not be able to do it. Now, that's something that we never want to say to teachers, but, being realistic, some kids are not going to be able to do things. So, at what point are we going to modify and shorten that assignment and really help those students who can't do it and allow them to still achieve success? So that's something I want to see for Summit and

individualized learning or personalized learning is definitely personalizing it for students who are excelling…. But let's personalize it now for students who really struggle.

Many of the teachers mentioned concerns over how this way of learning will match up with the standardized testing requirement. FG1-4 shared, "I don't feel like we've hit on every standard like we normally would. And that bothers me. No, we did go through the standards, I mean we did make sure—but.…"

Table 10

Most Common Themes (FGQ4)

Themes
Time
Monitoring students
Parents
Resources

IQ2. As noted in Table 11, two common themes emerged for IQ2 (How prepared did you feel to start personalized learning? Why do you feel this way?). Teachers spoke of not having enough time to process and prepare and a training that was not enough.

Time to process and prepare. I10 shared her struggles with not having enough time to process and starting the school year without really understanding what it took to make PL happen in her classroom.

I did not feel prepared at all. I'm very open to change, I'm very, I don't want to say 'accommodating,' but I'm willing to try. But once we went to the training in California and once we came back, I realized that I needed more of it. What they did there wasn't

necessarily what I was using for me. I was doing it as the child and like, 'Okay, they have to do this task, this task, this task.' And we were completing them, but it wasn't real solid for me, because we can do things a lot faster than they can, so that was a little difficult. And some of the concepts were a little bit harder for the kids I feel than it was for us. So, breaking that down and just seeing it from the different way, it took me awhile to get my feet stable and then ready to run with it. So, yeah, I like to know all the ins and out and I felt like I would be barely a step ahead of them in knowing some of the things, and then they would teach me some of the things, which I don't mind. But at the same time, it was like, 'Oh my gosh. They must think I just don't know what I'm doing.' But then some of the parents were like, 'Do you even know?' So that didn't help.

In hindsight, I12 didn't really understand what implementing PL would entail. She didn't know what to expect and would prepare her students better next year.

I'm not sure that I completely understood what was going to be involved. But I thought I was prepared, and then I think what I learned quickly is at this grade level, in 5th grade, all the students aren't ready for it. You have probably only a handful in 5th grade who are. And so, I could see that—I saw that quickly. So, I was like, 'All right. You go work in your focus areas. Pick what you're doing here and there,' and then kids were really struggling. And then I was like, 'Oh, actually I have to teach this stuff too. They're not going to just learn.' So, then I kind of redirected my teaching to include the focus areas in the projects, which then kids started getting it, and they started getting what I wanted them to do with the text, with the videos, those types of things. I think I thought they were more prepared, and then quickly realized they weren't. And now going in the next year, I realized the first two, three weeks is going to be like, 'Let's watch some

> videos. This is what I want you to do. Stop. Go back.' Train them how to watch videos, how to annotate a text, how to take notes because they don't have to do that. In 4th grade it's, 'Write this down.' So, I think I'll be better prepared next year. I thought I was prepared this year but didn't know the struggles that were going to be there.

I9 described process she went through in letting go. It took her far longer than she expected to let the students have that control and let them make decisions on their own. It was hard for her.

> I thought I felt prepared, but I really wasn't because now you're taking—for me it was 30 individual students that I had to figure out what each one really thrived with and succeeded with. And it's not as simple as just giving them a survey to find out what type of learner they are because then they don't really know. They don't, at this age, know what works well for them just by saying, 'Oh, yeah, I like to watch things and that's going to work well for me.' So, it took us a while to really figure out what's going to work.… But it took me a while to make that shift. Or I have students who found a different way to make a plan, instead of making it the way we introduced them to planning their goals. I have one who designed an entire spreadsheet, and that's where all of her goals are and what she's doing for the rest of the year now that we're entering Quarter 4. So that shift for me, letting them take a little more control and be a little more self-guided, was hard. But even guiding them towards that was challenging. Because if you're going to do this and take a personalized learning approach, you have to let go of some of the control you typically have in the classroom. It's hard and it takes time.

Training. The second most common theme was the theme of training. Four teachers described the training as a struggle. According to the teachers, the amount of information that was needed and the amount of time that was given for the training did not match, the training

was not enough. I1 shared, “I think the training wasn't the best overall, but me having had that exposure as looking at it from a different lens, helped me, but I still don't think I felt prepared because everything was so quick.” I5 shared,

> So everybody had gone and seen what the summit was about, and I came to it brand new. I had no idea. And anything I looked up, I couldn't find anything on it. It was so difficult to find anything on it. And so I kind of came in blindly to the training and it was so overwhelming. And I really, really, really wanted a manual. I wanted something in front of me that I could look to the index and find the page number and go to it. And I was so frustrated in the beginning. I felt like I was the blind leading the blind, and I couldn't explain really well what it was. I knew it was something I wanted to be a part of immediately. I knew that the draw of teaching kids to be thinkers and longtime learners appealed and everything that I had seen that was a result of it was something I wanted for my own children.… I felt like I was learning on my own. I felt like we all were. And we would share something with each other, like, ‘Did you know this? Did you know--?’ And we kind of discovered everything as a team. And thankfully we were willing to say, ‘Did you know this? Did you see this?’ Rather than just assume that everybody knew it and you were the only one that didn't know it. Because that's the way we learned this year. But I think it could have been—that’s probably my biggest beef with it. It could have been a whole lot easier. It didn't have to be this hard. And I think that anyone that didn't fully buy in and fully believe in it would give up. So hopefully, change that a little bit.

I13 shared a similar feeling of being lost,

> I didn't feel prepared at all. And I didn't get to observe… last year so I really felt unprepared because I hadn't seen it used in action. And I expected to when we went for the training and there were no real visuals and so that put me I felt, behind, at a disadvantage. So that was the biggest problem. And too, then when we had the training, I'm not technically savvy and so the pace that the people who are younger than I am, move at because they are technically inclined was too fast for me. So, I was at a catch up all of the time.

I12 found the training and beginning of the year to be a struggle as she felt out of control and frustrated. She later used that experience and struggle with the training and adjusting to the program to help her coach her students and parents through the struggles as they began to feel the same way a few weeks into the year.

> So being completely lost to things that I was not used to, that was frustrating to me, and then sometimes I would be put in groups that I didn't get to control so some of those people actually didn't want to wait for me. And I didn't want to hold them back at some point either, so I'm like oh, great I'll just have to figure this out, and I kind of gave in. And then later on as I watched my own classroom function I realized I was riding the role of many students I had not yet to put myself in their shoes. And so, I knew what they would feel like as we started this program, so as I saw their frustration that's what made me want to wait. Where parents were angry and everybody else was angry, I was just like we need to give everything time. It gave me that patience where we need to just give it time. And that was easy for me then as a teacher not to just say, yeah forget it, too. It was easy for me to say no, we need to wait. Because then I could come from a totally

pure place for me to say that to parents. It was authentic, completely. I'm just like, no, there is good things in this, we just need to wait. Just because I was riding the new technology ride, too, and I knew how important it would be because I have older children. So, I have college students and married kids and I was thinking, you guys, I know. I was old school taught, too. But we have to recognize this is not the way it's happening. So, I was realistic to that, and I wanted it to be different. I don't want to be left behind.

Table 11

Most Common Themes (IQ2)

Themes
Not enough time to process and prepare
Training was not enough

IQ4. As noted in Table 12, there were two common themes that emerged in the responses to IQ4 (Do you perceive the implementation of personalized learning to benefit you and/or your students? Why or Why not?): resources and letting go.

Resources. Four of the teachers expressed concern with the resources in the platform not being sufficient. I4 shared,

> The big concern for me comes with those focus areas. I know they need to learn how to think and I know those cognitive skills are crucial, but still, as a teacher, I still want them to know what is the difference between revolution and rotation. I still need them to know that content and I am not sold yet that they're—going through this personal learning platform, that they are retaining that information. I don't know yet. I haven't had a

> chance to see it because nobody's finished Science yet, but my big fear is we learn it to pass the test and then it's gone.

I8 felt constrained by the platform and the curriculum for his students, "I think from an overall general education purpose, I think it's probably a very good program. There's a lot of stuff in the curriculum that I do like, there's a lot of stuff in the curriculum I don't like." He continued, "I've had the most trouble with that." I16 also shared her concerns,

> We had to make sure their basic skills were met because Summit doesn't always address that. They expect our kids to be at a certain level, and many of them are not. So we would cover those basic skills and then maybe move on.

She continues, "With the Math, I have found the Summit program to be insufficient and have had to heavily supplement with the books."

Letting go. The second theme that emerged was the theme of letting go. I12 shared he struggles with moving away from the traditional teacher role.

> As a teacher, it's hard to let go. I mean, I'm not going to lie. It's super hard to let go because you think that, 'I am in charge of teaching all the time.' That role, and the facilitator's role, or the mentor's role, or even the celebrator's role that you take on, you don't want to be—I mean, teachers are not idle people. So, you had to find a new function. You have to find a new place where you just kind of sit back and go, 'No, actually, this is a powerful role as cheerleader right now. Good job for picking this,' or the motivator's role, 'Don't you think you should try to catch up in this area a little bit?' or, 'That's awesome that you learned all of that on your own.' And you kind of just take on a little bit different role which, initially, was hard for me because I think I have strengths in teaching. And I had to let go of those a little bit during that part.

I4 also shared the personal struggle of missing the traditional way, “I miss it just because it's fun. I miss doing all the different projects. That's just me being selfish. But I think the kids are learning, it's just not in the way that I used to teach them.”

Table 12

Most Common Themes (IQ4)

Themes
Resources
Letting go

Summative Findings for RQ4

What are the perceived challenges regarding the implementation of personalized learning with technology?

Six themes emerged from the focus group and interview questions answering RQ4. In the focus groups, the themes of time, management/monitoring students, resources, and parents emerged. In the interviews, the themes of time to process, not enough training, resources, and letting go emerged.

As the learning curve was steep for the teachers they came across some challenges as they began implementation. The theme of time was a challenge. No matter whether the teachers began researching PL prior to the year, began dabbling in PL prior to the year, or just learned about the basics of PL weeks before school started, the teachers felt challenged with time. The teachers shared that the transition was a process and it took time. The teachers shared of the training being intense but not meeting the needs of the teachers.

Some teachers also needed more time to learn about and vet the resources and modify and adjust the resources to meet their needs. Although the teachers had made sure the curriculum and resources were aligned with the standards there was still a concern of the curriculum being strong enough along with the concern of how the students would perform on the mandatory standardized tests at the end of the year. Some teachers felt as if they knew what worked in the traditional model and worry if the PL model would help students pass the assessment that was used to rate and measure growth in schools.

The shift from the traditional model to the PL model was a challenge in going from students doing the same thing at the same time to students being in 30 different places at one time. Management and monitoring students included; monitoring technology, motivation, and behaviors. Some teachers were not prepared for the reality of students all being in different places and really had a hard time letting go of the whole group and control that they had with in the traditional model.

Some teachers shared that they received a lot of push-back from parents. Those teachers describe a time consuming and energy draining process to help the parents adapt to the new learning model. Unfortunately, this push back took the focus away from the good things that were going on in the beginning of the year however, it was eventually overcome.

Chapter Summary

This qualitative research study was designed to explore the transition from a traditional model of instruction to a PL model of instruction. Twenty-one teachers in their first year of implementation participated in this study. Participants engaged in focus groups and one-on-one interviews. The following themes emerged from the focus group and one-on-one interview responses that were designed to answer four research questions.

RQ1. There was one common theme that emerged from all three of the questions that were designed to answer RQ1. The theme of the teacher mindset, was consistent throughout the responses to all three questions, FGQ2, IQ3, and IQ5, in the focus groups and interviews. The themes of collaboration emerged from IQ3 and IQ5, content/standard knowledge from FGQ2 and IQ5, and technology skills from the findings of FGQ2 and IQ5. The theme of training emerged from IQ3 and the themes of student/teacher relationships, and management emerged from IQ5.

RQ2. The themes that emerged from the focus group and interview questions answering RQ2 are closely related. In the focus groups, the themes of the platform, the role of the teacher, and the cognitive and conceptual skills emerged. In the interviews, the themes of the teacher as a facilitator, data, mentoring, and the cognitive and conceptual skills emerged.

RQ3. Eight themes emerged from the focus group and interview questions answering RQ3. In the focus groups, the themes of real world readiness skills, differentiation, student taking ownership of their learning, and relationships emerged. In the first interview question, two themes of teachers finding excitement in discovering a way to better meet student needs and feeling more prepared to meet student needs emerged. And the themes that emerged from IQ4 were purposeful time, resources, differentiation, real world readiness skills, and relationships.

RQ4. Six themes emerged from the focus group and interview questions answering RQ4. In the focus groups, the themes of time, management/monitoring students, resources, and parents emerged. In the interviews, the themes of time to process, not enough training, resources, and letting go emerged.

Table 13 provides an overall summation of focus group and interview findings as aligned with each relevant research question.

Table 13

Summary Findings of Focus Groups and Interviews for each Research Question

Research Question	Focus Groups	Interviews
1. What knowledge and skills do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?	• Teacher Mindset • Content/Standards Knowledge • Technology Skills	• Teacher Mindset • Collaboration • Content/Standards Knowledge • Technology Skills • Training • Student/Teacher Relationships • Management
2. What changes have teachers experienced as they have moved from a more traditional model to a personalized learning model?	• Platform • Role of the Teacher • Cognitive/Conceptual Skills	• Teacher as a Facilitator • Data • Mentoring • Cognitive/Conceptual Skills
3. What are the perceived successes regarding the implementation of personalized learning with technology?	• Real World Readiness Skills • Differentiation • Ownership of Learning • Relationships	• Excitement • Better Prepared • Purposeful Time • Resources • Differentiation • Real World Readiness Skills • Relationships
4. What are the perceived challenges regarding the implementation of personalized learning with technology?	• Time • Management • Resources • Parent Concerns	• Time • Not Enough Training • Resources • Letting Go

Chapter Five will present the final summary of the study, conclusions, recommendations, and implications of the study.

Chapter 5

Summary, Conclusions, Implications, and Recommendations

Introduction

This chapter presents a summary of the study and the conclusions drawn from the findings presented in Chapter 4. It provides a discussion of the implications for practice and recommendations for future studies.

Summary of Study

In recent years, the influence of technology and educational legislation have generated a desire for a transformation in education. As schools strive to move from the traditional factory-like model of instruction in which students learn the same things at the same time and in the same way, personalized learning (PL) has emerged as a model of instruction to meet student needs. Students are individual learners who learn in different ways and need instruction that allows for a variety of approaches to learning. Students will move into life needing to make choices on how to set goals and objectives and solve problems successfully by finding and using the resources that are available. To prepare students for the future, classroom instruction and student learning should better match how it will be in the real world.

In the real world, jobs and activities are individualized and personalized. If the ultimate goal is to prepare students for the future, students need to know how to set goals, make choices, self-regulate, and persevere while creating an understanding and connection about the content that makes sense to the student in the world around them. Teachers need to be informed and prepared with the right tools and resources to meet student needs and be able to personalize instruction and learning to make it relevant and meaningful for students. For many teachers, they have had little to no exposure to directing instruction while personalizing learning, so the

task is not a natural or easy one. While legislation and research are suggesting that PL is a model that will work in education, the shift in perspective can seem insurmountable when the traditional model has been the collective way of teaching and learning for decades.

This qualitative study was designed to explore the changes in teacher perspective and practice which occur with the implementation of PL while using technology as a platform to hold curriculum with students in a general education classroom. The researcher explored the knowledge and skills that are necessary to implement PL in the general education setting, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of PL while using technology as a tool.

The participants in this study were teachers from three different elementary schools in a large suburban school district. All of the teachers were in the first year of implementing a PL program in their classroom as a part of a grade-level wide implementation at their school. The teachers voluntarily participated in focus groups and then one-on-one interviews to express perceptions and share their own personal stories of implementing PL in the general education setting. The focus groups and interviews were recorded and transcribed before being analyzed. The findings were presented in table and narrative form.

The themes that emerged from the data were:

- RQ1: teacher mindset, collaboration, content/standard knowledge, technology skills, training, student/teacher relationships. and management.
- RQ2: platform, role of the teacher, cognitive and conceptual skills, data, mentoring.
- RQ3: real world readiness skills, differentiation, student taking ownership of their learning, relationships, purposeful time, resources, teachers finding excitement

in finding a way to better meet student needs, and feeling more prepared to meet student needs emerged.

- RQ4: management/monitoring students, time to process, not enough training, resources, parents, and letting go.

Conclusions

Research Question 1. What knowledge and skills do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?

The teachers perceived several elements of knowledge and skills to be of importance when implementing personalized learning. The findings of the focus groups and interviews indicate that the teachers interviewed shared of the importance of the teacher mindset. The topics that were included in the teacher mindset were the growth mindset, flexibility, positivity, grit, and perseverance. A teacher must be willing to fail, try again, and figure it out. The teachers also shared of how much they relied on their colleagues to share successes and struggles. Many noted how they could not have imagined success without that team support. The teachers discussed how a teacher needed to have or be willing to build strong content knowledge, technology skills, and management skills. Continued professional development and time will be important as will the student teacher relationship.

It can be concluded from this study that for successful implementation of PL to occur, a teacher must have a growth mindset, be flexible, positive, have grit and perseverance and be willing to fail, try again, and figure it out. A teacher is most likely to be successful when implementing with a team of teachers so they have each other as support. Strong content knowledge, understanding of the standards, technology, and management will help the teachers stay in front of the students as they students will be in many different places at the same time.

It can also be concluded that continued professional development will support the teachers as they transition to a PL model. Since teachers, like students, each process and learn at a different pace, differentiated professional development will likely help support teachers as they learn, grow and need support in any of these areas.

Research Question 2. What changes have teachers experienced as they have moved from a more traditional model to a personalized learning model?

The teachers have experienced many different changes as they have moved from a more traditional model to a personalized learning model. The findings of the focus groups and interviews indicate that teachers have experienced a shift in their own role in the classroom. They have become more of a facilitator, mentor, and small group leader. In using a program that is technologically based, the teachers were provided a platform to hold resources and collect data for students. The teachers were able spend their time focusing on student needs instead of creating resources for different levels of students; the resources were already created. The teachers used the data to mentor students which allowed for an increase in differentiation and student teacher relationships.

Through the shift to PL, the teachers shared of the shift from looking at each content, area or objective as its own, to being part of a bigger picture with the focus on cognitive skills and conceptual thinking. This focused on higher level skills such as analyzing, problem-solving, and working together to find information. Ultimately, many students began showing motivation in a way they hadn't been able to show before.

It can be concluded from this study that the shift from the traditional model to the personalized model is a rather large shift for most teachers. It can also be concluded that a platform to hold and organize the curriculum and data is helpful to teachers and students in the

PL model. It can also be concluded that the PL model helps teachers differentiate and meet student needs in a more effective way than what has traditionally happened for students in the past. It can be concluded that students will be better prepared for the future if learning with a PL model. The cognitive skills and shift to bigger picture conceptual thinking will stay with the students as they learn and grow in the real world.

Research Question 3. What are the perceived successes regarding the implementation of personalized learning with technology?

The teachers perceived several successes with the implementation of PL. The findings of the focus groups and interviews indicate that the teachers interviewed felt as if they were able to meet student needs in a way that they hadn't been able to before. They had choices and resources at many different levels and a plan to be able to differentiate and personalize according to student needs. Teachers had readily available data to know what the students' needed and were meeting with students in small groups or individually.

The students were taking ownership of their learning, and the abilities to analyze, reason, and problem solve were growing. Students were gaining confidence as they learned of their strengths and weakness, figuring out learning styles, and what they needed to do to become more successful. Students and teachers were getting to know each other in a way that they hadn't been able to before. The teachers used their time working with and planning for students instead of creating materials and the students spent their time meeting the goals they had set for themselves and with their teachers and mentor. The switch to PL generated an excitement as teachers found success with students and felt prepared to meet the continuously changing needs of student.

It can be concluded that a teacher who is open minded and ready to implement a PL model is likely to find success and fulfillment in meeting student needs in a way they likely

haven't been able to before. It can be conclude that a PL model can allow for more data driven differentiation. With the differentiation and personalization, students are likely to get more of what they need, take ownership in their learning, and gain confidence. It can be concluded that in a PL model, both students and teachers are making the most of their time in a more purposeful way than they were able to do in the traditional model.

Research Question 4. What are the perceived challenges regarding the implementation of personalized learning with technology?

The teachers perceived several challenges with the implementation of PL. The findings of the focus groups and interviews indicate that the teachers interviewed found that time was a challenge during the transition to PL. No matter whether the teachers began researching PL prior to the year, began dabbling in PL prior to the year, or just learned about the basics of PL weeks before school started, the teachers felt challenged with time. The teachers shared that the transition was a process and it took time. The teachers shared that they would have benefited from additional training and time to vet the resources, which is usually the case with any type of implementation. Some teachers voiced concern about how the students would do on the standardized assessments as those are used to rate and measure growth in students and schools.

The teachers had to adjust to students being in 30 different places at one time, monitoring technology, motivation, and behaviors. Some teachers were not prepared for the reality of students all being in different places and really had a hard time letting go of the whole group and control that they had with in the traditional model.

Some teachers shared that they received a lot of push-back from parents. Those teachers described a time consuming and energy draining process to help the parents adapt to the new

learning model. Unfortunately, this push-back took the focus away from the good things that were going on in the beginning of the year; however, it was eventually overcome.

It can be concluded that the implementation of PL, similar to any type of implementation of something new, is likely to happen with many hurdles and challenges. It can also be concluded that with time, professional development, and support, the hurdles can be overcome.

Implications for Practice

In studying the teacher perspectives, the research was designed to help educators understand how PL has changed instruction, how it can be used in classrooms, and the effect PL has on instruction and interaction with students. The results of the study will help educators better understand PL from the teacher perspective and see it as an attainable model for all students including those in a general education classroom.

1. Initial training and on-going professional development of staff implementing PL was important to the participants of this study. As the teachers continued to adjust, it was perceived that they needed more support and professional development along the way. If teachers have holes or gaps in the knowledge and skills necessary, the gaps may be filled through strong and purposeful professional development planned to fill those holes and along with need based professional development to keep the momentum going.
2. Teachers will need time and support in implementing PL. Systems should be in place for teachers to collaborate. The teachers perceived their colleagues to be an important asset in the process as they work through the shift from traditional goals for a whole class of groups of students to goals and plans for each individual student. Teachers could benefit from collaboration with like grade level, like content groups, mixed

content groups, or different grade levels for vertical articulation. Teachers could also benefit from collaborating with a group that includes a technology representative. The learning curve will be steep, and the teachers would benefit from time to collaborate, plan and adjust.

3. Schools should consider implementing a PL program in schools. If teachers have the mindset and desire to meet student needs in a better way, PL is perceived to be a beneficial model to meet student needs. PL for students will help level the playing field for students and provide for more equitable access to meeting students where they are as individual learners.
4. If schools are considering implementing a PL model, they should consider using a technology platform to assist with the organization of curriculum and data. While it is possible to implement PL without this platform, the technology piece can be an effective tool to assist teachers. Teachers perceive the platform to be a key component in effective PL instruction. The platform can hold differentiated content and activities for students. The students can then make a choice from a menu of activities according to the learning style they prefer. A platform can also hold assessment data. When the data is all in one place the teachers shared of using the information regularly to pull small groups and meet individual needs because they felt as if the data were at their fingertips.
5. This study has potential implications for policy makers and educational leaders. When personalizing learning, teachers noticed the focus moving from just content and curriculum to a focus on cognitive and conceptual skills along with the content and curriculum. When students strengthened the cognitive and conceptual skills such as

problem solving, analysis and reasoning, the teachers report the students taking more ownership of their learning. As the students developed the skills necessary for success, the curriculum and content became almost secondary when considering the overall learning that was occurring. Perhaps educational leaders and policymakers should look at how the success of students, teachers, and schools is measured. Are the right things measured? Should measures of success include a measurement of skills instead of specifics of content? How could educators measure the growth of those habits of success as indicators of the success of students, teachers, and schools as opposed to the current practice of using measurements of academic achievement as the main indicator of success.

6. This study has potential implications for teacher preparation programs. As the teachers involved in this study indicated, PL is a way of teaching and learning that is very different than the way they learned as students and learned to teach students in teacher preparation programs. Teacher preparation programs will need to adjust and prepare teacher candidates to individualize for students.

Recommendations for Future Studies

Although this research is a starting point for understanding the transition to PL, there are other opportunities for future studies.

1. Future studies could be conducted to investigate the administrator, student, or parent perspectives. A study similar to this study could be conducted with a different population to gain a different perspective on the implementation of PL. This study could be an independent study of a group or could compare two or more groups.

2. A case study could be conducted at one location to investigate the administrator, teacher, student, and parent perspectives all at one site. By studying all stakeholders at one location, the research would provide a more in-depth picture of the perspectives as PL is implemented at a school.
3. Longitudinal studies could be conducted to investigate the teacher perspectives of PL three years, five years, etc. after implementation. The longitudinal research, as a companion to this study on teachers in the first year of implementation, would give additional perspective of the implementation of PL.
4. This research was conducted at the elementary school level. Future studies could be conducted to investigate the perceptions of teachers implementing PL at the middle or high school levels. These studies could investigate the perceptions of an independent level as this research did, or compare two or more school levels of elementary, middle, or high schools.
5. While this study focused on teacher perspectives, it did not focus on any perspective of student outcomes. Future studies could be conducted to investigate the relationship between PL and student outcomes. Research could include any curricular area of math, language arts, science, or social studies, any comparison of the two, or a comparison of tested/not tested areas.
6. The participants in this study were all using one specific model of PL. A future study could be conducted comparing different PL models. Research could also be conducted comparing PL models with or without the use of technology.
7. Future studies could be conducted to investigate the impact of PL on student academic achievement through a cohort of students over time. By studying academic

student results over time, a researcher could investigate the impact on student achievement and the effects of students as they have one, two, five, etc. years of PL. PL is a step closer toward the goal of transforming education as it is currently known. Each and every student deserves to work on and accomplish goals to meet their own individual needs and PL is a way to make that happen. If every student could learn in a PL environment, with a teacher that was provided proper training and resources to do so, the educational system would look very different than is has for decades in the United States.

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Appendix A

Bray & McClaskey Permission

From: **Personalize Learning Team** <personalizelearn@gmail.com>
Date: Mon, Jan 1, 2018 at 12:58 PM
Subject: Re: Permission to use
To: Sheri Duggan <sew6@nau.edu>

Hi Sheri,

We give you permission to use the Personalization vs. Differentiation vs. Individualization (PDI) version 3 chart (attached) in your dissertation. Please include all of the credits at the bottom of the chart.

We believe that you might be interested in acquiring our books, ***Make Learning Personal*** (http://www.corwin.co m/books/Book242317) and **How to Personalize Learning**, (https://us.corwin.c om/en-us/nam/how-to-personaliz e-learning/book250714). Corwin Press offers our readers a 20% discount code: **N169O6.**

Thank you for reaching out to us for permission and hope this will help clarify the differences between personalization, differentiation, and individualization in your dissertation.

We are closing this account so for further inquiries about personalized learning, please contact Kathleen at khmcclaskey@gmail.com.

Thank you,
Kathleen and Barbara

Kathleen McClaskey
Barbara Bray
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Appendix B

NAU IRB

NORTHERN ARIZONA UNIVERSITY | Office of Regulatory Compliance

Institutional Review Board
Human Research Subjects Protection Program

805 S Beaver St
Building 22, Room 215
PO Box: 4062
Flagstaff AZ 86011
928-523-9551
http://nau.edu/Research/Compliance/Human-Subjects/Welcome

To:	Sheri Duggan
From:	NAU IRB Office
Approval Date:	February 16, 2018
Project:	CHANGES IN TEACHER PERCEPTION AND PRACTICE WHICH OCCUR WITH THE IMPLEMENTATION OF PERSONALIZED LEARNING
Project Number:	1177203-1
Submission:	New Project
Review Level:	Exempt Review
Action:	EXEMPT
Project Status:	Exempt
Review Category/ies:	**Exempt Approval 45 CFR 46.101(b)(2):** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior.

This submission meets the criteria for exemption under 45 CFR 46.101(b). This project has been reviewed and approved by an IRB Chair or designee.

- Northern Arizona University maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00000357).
- All research procedures should be conducted in full accordance with all applicable sections of the guidance.
- Exempt projects do not have a continuing review requirement.
- This project should be conducted in full accordance with all applicable sections of the guidance and you should notify the IRB immediately of any proposed changes that affect the protocol.
- Amendments to exempt projects that change the nature of the project should be submitted to the Human Research Subjects Protection Program (HRSPP) office for a new determination. See the guidance Exempt Research for more information on changes that affect the determination of exemption. Please contact the HRSPP to consult on whether the proposed changes need further review.
- You should report any unanticipated problems involving risks to the participants or others to the IRB.
- All documents referenced in this submission have been reviewed and approved. Documents are filed with the HRSPP Office. If subjects will be consented, the approved consent(s) are attached to the approval notification from the HRSPP Office.
- Exempt projects are maintained in HRSPP for five (5) years from approval. An updated application is required every five (5) years.

NORTHERN ARIZONA UNIVERSITY | Office of Regulatory Compliance

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805 S Beaver St
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928-523-9551
http://nau.edu/Research/Compliance/Human-Subjects/Welcome

To:	Sheri Duggan
From:	NAU IRB Office
Approval Date:	February 26, 2018
Project:	CHANGES IN TEACHER PERCEPTION AND PRACTICE WHICH OCCUR WITH THE IMPLEMENTATION OF PERSONALIZED LEARNING USING TECHNOLOGY
Project Number:	1177203-2
Submission:	Amendment/Modification
Review Level:	Exempt Review
Action:	EXEMPT
Project Status:	Exempt
Review Category/ies:	**Exempt Approval 45 CFR 46.101(b)(2):** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior.

This submission meets the criteria for exemption under 45 CFR 46.101(b). This project has been reviewed and approved by an IRB Chair or designee.

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- Exempt projects are maintained in HRSPP for five (5) years from approval. An updated application is required every five (5) years.

Appendix C

District Approval

L-0531 **LC-E**

EXHIBIT	EXHIBIT

RELATIONS WITH EDUCATION RESEARCH AGENCIES

Request to Conduct Research

Name: Sheri Duggan Date of request: 1/29/2018

Organization or affiliation: Northern Arizona University - Doctoral Student

1. Describe the purpose of the proposed research.

The purpose of this study is to explore the changes in teacher perspective and practice which occur with the implementation of personalized learning while using technology as a tool. Through focus groups and interviews of teachers currently implementing personalized learning in the classroom, the researcher will explore the pieces of instruction and practice that personalize learning in the general education setting, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of personalized learning while using technology as a tool. The results of the study will help other educators better understand personalized learning from the teacher perspective and see personalized learning as an attainable model for all students including those in a general education classroom.

2. Describe the major variables to be explored in your study.

There are four research questions in this study.

1. What pieces of instruction and practice do teachers perceive should be in place to ensure personalization of learning for students while using technology as a tool?

2. What changes have teachers experienced as they have moved from a more traditional model to a personalized model?

3. What are the perceived successes regarding the implementation of personalized learning?

4. What are the perceived challenges regarding the implementation of personalized learning?

3. Approximately how much total time will be required to conduct your study at Gilbert Public Schools?

I am expecting to spend up to 5 full days in GPS schools.

The teachers will be invited to participate in a focus group that may take up to 45 minutes of time.

Some of the teachers may participate in a follow-up one-on-one interview that may take up to 45 minutes.

4. Which grade(s)/class(es) are you requesting participate in your study?

5th and 6th grade teachers at Highland Park

6th grade teachers at Playa del Rey and Towne Meadows

5. How many students and/or staff members will be needed?

Students: 0 Staff members: Up to 25

EXHIBIT	EXHIBIT

6. When do you propose to conduct the study?
February and March

7. What are the major benefits to be derived by the students and staff members of Gilbert Public Schools?
Participants may not benefit directly from this study however the hope is that the results of the study will help other educators better understand personalized learning from the teacher perspective and see personalized learning as an attainable model for all students including those in a general education classroom. This information will be communicated to the participants through the informed consent.

8. What are the major benefits derived by education in general?
The hope is that the results of the study will help other educators better understand personalized learning from the teacher perspective and see personalized learning as an attainable model for all students including those in a general education classroom. This information will be communicated to the participants through the informed consent.

9. What additional information do you feel will help to evaluate your request?
I have a professional relationship with the principals of the three schools involved and all three are in agreement with this study if approved.

10. Have you received Human Subject Review Board Approval for this research? (If students are involved)
No students are involved, however, IRB approval is in progress.

(Please attach a more detailed research proposal or supplemental documents that you have available.)
Please sign here

Applicant Date

District use only

- X Approved
- ☐ Approved with the following conditions:
- ☐ Not approved for the following reasons:

Barbara Newman 1/30/2018

Executive Director, Teaching and Learning Date

Appendix D

Focus Group Questions

1. Tell me about the transition from a traditional model of instruction to the personalized learning model of instruction.
2. What do you perceive to be the key skills and resources necessary in transitioning to a personalized learning model?
3. What do you perceive the successes to be with the implementation of personalized learning?
4. What do you perceive the challenges to be with the implementation of personalized learning?
5. Is there anything we haven't discussed yet that you would like to share?

Appendix E

Interview Questions

1. How would you describe your role in your personalized learning classroom compared to your role in your previous more traditional classroom?
2. How prepared did you feel to start personalized learning? Why do you feel this way?
3. Describe the professional development and support you have received while preparing for and implementing personalized learning.
4. Do you perceive the implementation of personalized learning to benefit you and/or your students? Why or Why not?
5. What do you perceive as critical to the success of your personalized learning classroom?
6. Is there anything we haven't discussed yet that you would like to share?

Appendix F

Informed Consent

NORTHERN ARIZONA UNIVERSITY

Project Number: 1177203-2
Approval Date: February 26, 2018
This stamp must be on all consenting documents

Human Subject Informed Consent

Title of Study: Changes in Teacher Perception and Practice Which Occur with the Implementation of Personalized Learning Using Technology

Principal Investigator: Sheri Duggan

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate. Please consider the information carefully. Feel free to discuss the study with your friends and family and to ask questions before making your decision whether or not to participate.

Why is this study being done?
The purpose of this study is to explore the changes in teacher perspective and practice which occur with the implementation of personalized learning while using technology as a tool. Through focus groups and interviews of teachers currently implementing personalized learning in the classroom, the researcher will explore the pieces of instruction and practice that personalize learning in the general education setting, the changes that have occurred as teachers have moved from a traditional model to a personalized model, along with the perceived successes and challenges regarding the implementation of personalized learning while using technology as a tool. The results of the study will help other educators better understand personalized learning from the teacher perspective and see personalized learning as an attainable model for all students including those in a general education classroom.

How many subjects will participate and how long will the study take?
Twenty-two teachers will be invited to participate.
The study should take approximately 120 days but no longer than 180 days with each participant participating for a maximum of two separate days.

What will happen if I take part in this study?
This study will consist of two separate activities. You may choose to participate in the first activity (focus group) and the second activity (one-on-one interview), only the first, or neither activity. It is not possible to participate in the interview without participating in the focus group. If you choose to participate; the first research activity (focus group) will require approximately 45 minutes. If you choose to continue to the second component (one-on-one interview), this will require an additional 30-45 minutes. The interview will be performed in person and recorded with the subject's permission. All information will be safeguarded, and the identity of the participants kept confidential, however, confidentiality cannot be guaranteed in a group setting.

Will there be any cost to you to take part in this study?
The only cost to you would be your time. The researcher cannot forsee any other cost that would be involved.

Will you be paid to take part in this study?

Project Number: 1177203-2
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You will not be paid for your participation in this research study.

Can I stop being in the study?

Your participation is voluntary. You may refuse to participate in this study. If you decide to take part in the study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you and you will not lose any of your usual benefits. Your decision will not affect your future relationship with Northern Arizona University. If you are a student or employee at Northern Arizona University, your decision will not affect your grades or employment status.

What are the risks and/or discomforts you might experience if you take part in this study?

There should not be any risk associated with this study

Are there any benefits for you (or for others) if you choose to take part in this research study?

Participants may not benefit directly from this study however the hope is that the results of the study will help other educators better understand personalized learning from the teacher perspective and see personalized learning as an attainable model for all students including those in a general education classroom.

What other choices do I have if I do not take part in the study?

You may choose not to participate in this study without penalty or loss of benefits to which you are otherwise entitled.

Will my study-related information be kept confidential?

The investigator's intention is that none of the information shared will be associated with any subject's identity or employer (current or former). Any recoding or survey information submitted or recorded will be properly safeguarded during the course of the study and properly destroyed at the study's conclusion.

All collected data will be maintained by the primary investigator. It will be stored for no longer than three years in password protected spreadsheets on a password protected computer. Within three years, all data will be disposed of by the primary investigator.

Efforts will be made to keep your study-related information confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law.

Also, your records may be reviewed by the following groups:

- Office for Human Research Protections or other federal, state, or international regulatory agencies
- Northern Arizona University Institutional Review Board
- The sponsor supporting the study, their agents or study monitors

NORTHERN ARIZONA UNIVERSITY

Project Number: 1177203-2
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Who can you call if you have any questions?

If you have any questions about taking part in this study or if you feel you may have suffered a research related injury, you can call the Principal Investigator at: (480)492-5338

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Research Protection Program at 928-523-9551 or online at http://nau.edu/Research/Compliance/Human-Research/Welcome/.

If you are injured as a result of participating in this study or for questions about a study-related injury, you may contact

Sheri Duggan
(480)492-5338
Sew6@nau.edu

Dr. Richard Wiggall
College of Education, Educational Leadership, Doctoral Program
(480)254-2056
Richard.wiggall@nau.edu

An Institutional Review Board responsible for human subjects research at Northern Arizona University reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

AGREEMENT TO PARTICIPATE

I have read (or someone has read to me) this form, and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study.

I am not giving up any legal rights by signing this form. I will be given a copy of this form.

Subject Name:_____

Subject Signature:_____ Date:_____

AGREEMENT TO BE AUDIORECORDED

Subject Signature:_____ Date:_____

NORTHERN ARIZONA UNIVERSITY

Project Number: 1177203-2
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Some studies may require signature of PI or research staff. This is an optional section.

Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed the full contents of the study including all of the information contained in this consent form. All questions of the research subject and those of his/her parent or legal guardian have been accurately answered.

Investigator/Person Obtaining Consent:_____

Signature:_____ Date: _____

Biographical Information

Sheri Elayne Duggan was born in Scottsdale, Arizona. She is the oldest child of Mary Pat and Jim Wood and has two younger brothers, Eric and Danny. Sheri earned her Bachelor's degree in Education from Northern Arizona University in 1999 and followed her passion to become a teacher. She has taught preschool, kindergarten, 1st grade, 2nd grade, 4th grade, and 5th grade in schools in Arizona and for the Department of Defense Dependents Schools in Germany. Sheri earned her Master's degree in Educational Leadership in 2005 before becoming a reading interventionist/coach, gifted specialist/coach, assistant principal, elementary principal, and then a high school principal. Sheri's two children, Dylan and Kayla, are teenagers and they have a dog, Maya. Sheri is currently finishing her doctoral degree in Educational Leadership from Northern Arizona University and looks forward to continuing to make a difference for students as an educational leader.