

THE IMPACT OF STUDENT-CENTERED LEARNING, THROUGH THE USE OF
TECHNOLOGY, ON THE LEVEL OF ENGAGEMENT IN MIDDLE SCHOOL STUDENTS
WITH MILD INTELLECTUAL DISABILITIES: A QUALITATIVE STUDY

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DISSERTATION

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ABSTRACT

Research confirms that student-centered learning and technology are beneficial to the development of a students' academic success. Research exists that explains the need for implementing technology and student-centered learning in educating all students and engaging students in the learning process. Research, however, does not specifically discuss middle school students diagnosed with mild intellectual disabilities and the impact student-centered learning or technology has on engagement and learning. The purpose of this phenomenological qualitative study was to determine the impact of student-centered learning as implemented through the use of technology on the level of engagement in the mainstream classroom for middle school students with mild intellectual disabilities. Additionally, the perceptions of teachers on the implementation of student-centered learning through the use of technology was examined. Purposeful sampling was used to identify five middle school general education teachers. Rich data from the phenomenon of experiences with this topic was gathered. The selected teachers participated in a semi-structured open-ended interview to respond to a protocol that was aligned with each research question. After categorizing and theming the data, the findings of this study showed that, while extra support and distractions are still factors in the learning process, middle school students with mild intellectual disabilities were more engaged in the learning process, had increased participation, production, growth and confidence, and the use of technology leveled learning for the students increased access to learning material in student-centered mainstream classrooms.

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Chapter I

Introduction

Special education is a very demanding field within the realm of education due to the nature of the needs presented by those students who receive services (Fox, 2015; Kanfush, 2014; Kinder, Kubina, & Marchand-Martella, 2005). Such needs drive how teachers provide instruction in the classroom. Special education has predominately focused on specifically designed strategies to meet the individual needs of the student using direct-instruction techniques (Botha & Herselman, 2015; Kanfush, 2014; Kinder et al., 2005; Kurth & Keegan, 2012). Additionally, the 2004 reauthorized Individuals with Disabilities Education Act (IDEA) increased the use of scientific research-based curriculum delivered using a direct instruction method which proved to produce academic gains (Botha & Herselman, 2015; Kanfush, 2014; Kinder et al., 2005; Kurth & Keegan, 2012).

Students with mild intellectual disabilities offer many challenging demands on how instruction is designed and implemented to develop both missing and under-developed skills (Botha & Herselman, 2015; Dignath-van Ewijk, & Van Der Werf, 2012; Fox, 2015; Johnson, 2013; Parsons et al., 2017). Additionally, students with mild intellectual disabilities in middle school pose even more challenges as they also are dealing with their disability on top of changing physically and mentally. The missing or under-developed abilities create skill deficits for accessing the general education curriculum. The skill deficits explain the push for scientific research-based curriculum set forth within guidelines of IDEA 2004 (Botha & Herselman, 2015; Dignath-van Ewijk, & Van Der Werf, 2012; Fox, 2015). The delivery of scientific research-based curriculum has long been limited to working in small groups focused on a teacher-centered delivery method (Botha & Herselman, 2015; Dignath-van Ewijk, & Van Der Werf, 2012; Fox,

2015). Traditionally, the focus has been to target specific skills of students with mild intellectual disabilities. Many schools have moved to more innovative methods of instruction within general education classrooms, but for students with mild intellectual disabilities who receive special services the designed instruction often limits the ability to implement innovative practices (Botha & Herselman, 2015; Dignath-van Ewijk, & Van Der Werf, 2012; Fox, 2015; Johnson, 2013). The process of instructing students with disabilities has changed but is not moving forward to meet newer demands of the 21st century like non-disabled peers (Dignath-van Ewijk, & Van Der Werf, 2012; Fox, 2015; Johnson, 2013).

Special education practices have been created to meet the standards set forth in IDEA 2004 which currently contradicts how general education classrooms are using innovative styles of instruction in developing student engagement (Bouck, 2017; Kinder et al., 2005; Palak & Walls, 2009; Parsons et al., 2017; Trilling & Fadel, 2009). Research supports the development of skills using direct instruction approach when working with students who have special needs (Donne & Lin, 2013; Kinder et al., 2005; Palak & Walls, 2009; Shani & Hebel, 2016). However, research also exists that explains the need for implementing 21st-century skills to develop a holistic approach to educating all students and engaging students in the learning process (Botha & Herselman, 2015; Brown, Welsh, Hill, & Cipko, 2008; Hollingshead, Williamson, & Carnahan, 2018; Salas-Pilco, 2013; Slade & Griffith, 2013; Tan, 2015).

Moreover, research indicates technology implemented in the classrooms for students with disabilities has a positive effect on student engagement (Chao & Chou, 2017; De La Paz, 2013; Johnson, 2017). There is limited research available that examines the development of critical thinking, problem solving, communication, and creativity skills in students with mild intellectual disabilities (Bouck, 2014, 2017; Brown et al., 2008; Salas-Pilco, 2013). The

perspectives of many teachers regarding the use of technology in the classroom setting indicates that students, both general education and special education are more engaged in the learning process. The overall belief is teachers see the advantages of technology in the classroom, but with little training with technology as a teaching strategy, the disadvantages outweigh the advantages (Chao & Chou, 2017; De La Paz, 2013; Johnson, 2017).

Research that covers engagement in student's learning does so from the perspective of whole-school development but does not specifically address how engagement is developed in students with mild intellectual disabilities (Bouck, 2014; Brown et al., 2008; Chao & Chou, 2017; Johnson, 2017). Numerous studies discuss developing a whole-student approach to learning yet do not expressly address students with mild intellectual disabilities and how engaged they are within the mainstream classroom (Brion-Meisels, 2014; Serdyukov, 2017; Slade & Griffith, 2013; Van Boxtel; 2017). Additionally, research is needed that specifically determines if student-centered learning affects the level of engagement of students with mild intellectual disabilities that are educated in the mainstream classroom.

Learning engagement is the key to building positive and strong experiences within students (Choi & Rhee, 2014; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chun Chun Chen, 2019). Student-centered learning allows students to engage in the learning process. This process of learning aids in students accessing prior knowledge and building new experiences. Through new experiences, students can gain a deeper understanding of new information and learn how information connects to the students' lives. Many schools have begun using computers, laptops, iPads, and other technology that allows students to develop new experiences as they connect those with new information (Choi & Rhee, 2014; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chun Chun Chen, 2019).

Statement of the Problem

When looking at the level of engagement in students with mild intellectual disabilities, education perceives students as passive subjects who absorb the information teachers present by being told what they should be learning rather than teaching students how to learn (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Srivastava, 2017). Students with mild intellectual disabilities do not receive the same education as non-disabled peers (Bouck, 2017; Botha & Herselman, 2015; De La Paz, 2013; Salas-Pilco, 2013). Srivastava (2017) further states, "At the same time, schools are ill-equipped to deal with the special needs of children who have mental health or developmental difficulties" (p.225). Education was designed to develop the learning needs of all students in an effort to benefit their lives and how they interact with the world around them (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Srivastava, 2017). However, when examining student engagement for students with mild intellectual disabilities in the mainstream classroom, research indicates that teachers are not prepared and innovation instructional methods are not being utilized (Bouck, 2014; Brown et al., 2008; Parsons et al., 2017; Srivastava, 2017).

Student engagement can be linked to the types of relationships teachers build with students (Aslan & Reigeluth, 2013; Brown et al., 2008; Martin & Collie, 2018). When teachers build positive relationships with students, those students typically have higher levels of participation in the classroom. When relationships are negative, students do not engage in the learning process within the classroom (Brown et al., 2008; Lei, Cui, & Zhou, 2018; Martin & Collie, 2018). Developing positive relationships links back to how teachers are prepared to work with students who have mild intellectual disabilities in the mainstream classroom. Teachers who are prepared to work with students who have mild intellectual disabilities have a better chance at

building those positive relationships (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Lei, Cui, & Zhou, 2018; Martin & Collie, 2018; Srivastava, 2017).

Special education classrooms focus on specifically designed instruction to build missing skills and address gaps in learning for students with mild intellectual disabilities trying to access the general education curriculum (Botha & Herselman, 2015; Kinder et al., 2005; Srivastava, 2017). The scientific research-based curriculum, along with direct instruction, is used in the process to help target skills and allow students to develop missing skills. This has been a chosen instructional strategy for many years because of the success this strategy provides (Donne & Lin, 2013; Kinder et al, 2005; Palak & Walls, 2009). Traditional, however, does not always mean the best possible practice when looking at a holistic approach to teaching students with mild intellectual disabilities (Botha & Herselman, 2015; Kinder et al, 2005; Palak & Walls, 2009; Srivastava, 2017). Developing 21st century skills allows those students to become engaged in the learning process, as well as being able to contribute to their communities and the world around them (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Srivastava, 2017). In order to achieve student engagement, classrooms must move away from teacher-centered methods and adopt student-centered strategies (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Palak & Walls, 2009; Serdyukov, 2017; Srivastava, 2017)

Student engagement has been the subject of studies since the early 2000s and the similarities of many studies have come to one main conclusion, student engagement increases student outcomes (Botha & Herselman, 2015; Hollingshead et al., 2018; Shani & Hebel, 2016). In the mainstream classroom, teachers must be able to engage students with mild intellectual disabilities to ensure the same educational outcomes as nondisabled peers (Botha & Herselman, 2015; Lei et al., 2018; Martin & Collie, 2018; Srivastava, 2017). When teachers use student-

centered learning and build positive relationships, the level of student engagement increases in the classroom (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Lei, Cui, & Zhou, 2018; Martin & Collie, 2018; Srivastava, 2017). The natural development of the students increases because they are more invested in the learning process. Teachers need development in understanding students with mild intellectual disabilities and through this understanding, teachers will be able to build those positive relationships with students who have mild intellectual disabilities and will be able to increase the engagement of students in mainstream classrooms (Botha & Herselman, 2015; Lei et al., 2018; Martin & Collie, 2018; Srivastava, 2017).

Recent research suggests the development of a holistic approach to education and the implementation of technology to create more innovative ways to develop the academic skills of students (Botha & Herselman, 2015; Chao & Chou, 2017; Klehm, 2014; Palak & Walls, 2009, Shani & Herbel, 2016). Moreover, research indicates the most effective way to teach students with disabilities can be found in specifically designed instruction using a direct instruction approach (De La Paz, 2013; Kanfush, P. M., 2014; Kinder et al., 2005). A disconnect exists in the methods supported to teach students with mild intellectual disabilities and those of non-disabled counterparts (Botha & Herselman, 2015; Chao & Chou, 2017; Palak & Walls, 2009). However, research consistently supports the notion that instruction for all students must meet the needs of the changing world around them (Botha & Herselman, 2015; Chao & Chou, 2017; Salas-Pilco, 2013).

Most of the research conducted on innovation in the classroom and student-centered learning takes place in the mainstream classrooms with little discussion of the impact of developing engagement of students with disabilities, and more specifically, students with mild

intellectual disabilities (De La Paz, 2013; Kanfush, 2014; Kinder et al., 2005). Many researchers have developed studies that focus on taking a whole-student and holistic approaches to education while others still insist specifically designed instruction using a direct instruction approach is the best way to develop skills in students with mild intellectual disabilities (Botha & Herselman, 2015; De La Paz, 2013; Kanfush, 2014; Kinder et al., 2005; Palak & Walls, 2009, Shani & Herbel, 2016). Students with mild intellectual disabilities have not been a major topic in research conducted concerning student engagement within student-centered mainstream classrooms (Hollingshead et al., 2018; Kurth & Keegan, 2012; Schaddelee & McConnell, 2018). However, understanding the effects of a student-centered learning on the engagement of students with mild intellectual disabilities in the mainstream classroom has little research that produces enough information to provide a solid understanding within education.

At present, building missing skills for learning is the focus for students with mild intellectual disabilities (Kanfush, 2014; Kinder et al., 2005; Palak & Walls, 2009, Shani & Herbel, 2016). Non-Disabled peers receive instruction that is preparing learners to enter a world requiring 21st-century skills and digital literacy (Heidin, 2016; Kanfush, 2014; Palak & Walls, 2009, Shani & Hebel, 2016). Without needed skills, students will not be prepared to meet the demands of current job markets and educational institutions preparing students for the job market. Twenty-first century learners must be as literate in a digital sense as they are in reading and writing. Twenty-first century skills are required in the world current students are growing up in and will be necessary when students leave the educational setting and enter the work-force (Kanfush, 2014; Palak & Walls, 2009, Shani & Hebel, 2016; Trilling & Fadel, 2009).

The one main way to build missing skills in students with mild intellectual disabilities is to help them become engaged in the learning process (Bouck, 2017; Carini et al., 2006;

Hollingshead et al., 2018). Student engagement in the classroom allows students to actively take part in the learning process. When students become engaged in the learning process, learning deepens and becomes more meaningful (Bouck, 2017; Carini et al., 2006; Hollingshead et al., 2018). Students are then able to apply what they have learned in different ways and will show their level of learning with greater creativity. Students of the 21st century rely on technology as part of their lives and appreciate the use of technology in the process of learning (Carini et al., 2006; Hollingshead et al., 2018; Schaddelee & McConnell, 2018). However, not all students have this opportunity as most research discussing student engagement and mild intellectual disabilities focuses on behavioral engagement and not academic engagement through technology and student-centered learning (Hollingshead et al., 2018; Schaddelee & McConnell, 2018).

Additionally, middle school is a difficult time in the lives of many students because it is a transition period from childhood to adolescence (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016; Kheyrikhah et al, 2013; Shirzadi et al., 2016). During this period of transition, many students experience struggles with physical, cognitive, and emotional changes. The changes discussed affect a student's growth and development in most academic setting (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016; Kheyrikhah et al, 2013; Shirzadi et al., 2016).

Another area effected by the transition period of adolescence is how students respond to different social situations. The classroom is not only an area of academics; students learn social behaviors during their time in the classroom as well. Student's social development is an important part of the learning process as well. This transition period known as adolescence affects all students whether they have a disability or not (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016; Kheyrikhah et al, 2013; Shirzadi et al., 2016). Therefore, students with disabilities struggles with adolescence as well as their disability while trying to learn (Barkhordari-Sharifabad et al., 2020;

Choi & Kim, 2016; Hollingshead et al., 2018; Schaddelee & McConnell, 2018). The purpose of this study is to look at how technology in the mainstream classroom effects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild intellectual disabilities.

Background

Scholars have researched what student engagement is for many years and still have conflicting ideas of the definition process (Botha & Herselman, 2015; Hollingshead et al., 2018; Shani & Hebel, 2016). Additionally, developing a process that will allow students to become more engaged in the learning process (Botha & Herselman, 2015; Hollingshead et al., 2018; Shani & Hebel, 2016). Areas that scholars do agree on is that engagement happens in behavior, cognitive, and emotional states (Finn & Zimmerman, 2012; Hollingshead et al., 2018). This, however, has been typically used with students who do not have disabilities. Students with mild intellectual disabilities have only been the focus of behavioral engagement and cognitive engagement. However, emotional engagement has not been addressed in depth when discussing student engagement (Finn & Zimmerman, 2012; Hollingshead et al., 2018).

Education must look at the whole child, no matter the ability or skill level, to determine the best practices to be used within the classroom (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Chao & Chou, 2017; Salas-Pilco, 2013; Shani & Hebel, 2016). Society has moved from an industrialized system into a technological phenomenon. Education however, while it tries to keep up, is trailing the trends of society (Chao & Chou, 2017; Duncan, 2010; Trilling & Fadel, 2009). The world has gone through many changes and the need for critical thinking, and problem-solving skills has increased. Moving from traditional human interface to

a digital realm that connects people in ways they could not be connected 30 years ago (Chao & Chou, 2017; Trilling & Fadel, 2009). Research conducted just over ten years ago, when technology was beginning to make major advances, showed that schools did not equally have access to technology and even when access was present, did not use technology regularly (Chao & Chou, 2017; Owen & Waxman, 1995; Trilling & Fadel, 2009). Education cannot afford to fall behind the shift that is occurring in the world with the fast-moving pace of technology and the needs of society that are developed by the influx of technology (Aslan & Reigeluth, 2013; Bouck, 2017; Trilling & Fadel, 2009).

One of the main issues to developing technology in the classroom, outside of access is how teachers are trained and supported (Botha & Herselman, 2015; Brown, et al., 2008; Stephenson, & Carter, 2015). Technology in the classroom is becoming more prevalent in mainstream classrooms, but many students with mild intellectual disabilities still do not have access to this technology. This is in part due to a lack of training teachers receive concerning technology and support for the development of 21st century learning strategies in students with mild intellectual disabilities (Bouck, 2017; Brown et al., 2008; Stephenson, & Carter, 2015).

Traditional practices for students with special needs has historically followed a direct approach using specifically designed instruction to build necessary missing skills (De La Paz, 2013; Kinder et al., 2005; Kurth & Keegan, 2012). The Council for Exceptional Children (2004) discuss how the 2004 reauthorized Individuals with Disabilities Education Act (IDEA) show the preferred and most practiced method of instruction for students with disabilities is specifically designed instruction to fill in the gaps those students experience (The Council for Exceptional Children, 2004). However, students with mild intellectual disabilities also enter many mainstream classrooms everyday where non-disabled peers use technology to build necessary

21st century learning skills. While specifically designed instruction is effective in building missing foundational skills, this strategy limits students with mild intellectual disabilities in accessing other learning abilities and achieving 21st century skills (Brown et al. 2008; Chao & Chou, 2017; De La Paz, 2013; Stephenson & Carter, 2015).

Students with disabilities have a right to the same education as non-disabled peers and must be allowed to share in equitable educational experiences under IDEA 2004 (The Council for Exceptional Children, 2004). Teacher preparation and support is essential in developing the skills teachers need in the classroom to implement innovative ways to help students with disabilities. Also, in helping to access the skills of 21st century learning and to eliminate the traditional practices of fixing gaps so a holistic approach can be developed (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Brown et al. 2008; Chao & Chou, 2017; Kurth & Keegan, 2012; Stephenson & Carter, 2015). The theoretical framework introduced in this study discusses the Transformational Teaching theory. The theoretical framework will help connect current theories of learning to the stated problem and show a relationship to the research questions.

As technology continues to become a major element in the classroom, students with mild intellectual disabilities should have the same exposure and access to the skills being taught with technology. Students with mild intellectual disabilities often do not receive the same opportunities as non-disabled peers (De La Paz, 2013; Bouck, 2017; Salis-Pilco, 2013). Schools must be prepared to build 21st-century skills in all students to include those students with mild intellectual disabilities (Aslan & Reigeluth, 2013; Bouck, 2014; De La Paz, 2013; Bouck, 2017; Salis-Pilco, 2013). For this to happen, classrooms, policies, schools, and curriculum must be re-invented so the learning outcomes for students with mild intellectual disabilities are changed to not only include learning of life skills but how to become successful in a culture expecting

students to know how to work with one another, problem-solve, and be critical thinkers (Bouck, 2017; Botha & Herselman, 2015; Brown et al. 2008; Chao & Chou, 2017; Kurth & Keegan, 2012).

Academic success is measured by many different things in a school setting but the most important is the level of student engagement in the learning process (Hollingshead et al., 2018; Lei et al., 2018; Schaddelee & McConnell, 2018). Students who are engaged in the learning process develop skills beyond just copying what the teacher is doing. Engaged students develop critical thinking skills that allows them to problem-solve situations, apply knowledge to real-life situations, be more creative, and communicate with one another in meaningful ways (Hollingshead et al., 2018; Lei et al., 2018; Schaddelee & McConnell, 2018). Engagement of learning in students with mild intellectual disabilities is not a topic that has received a lot of research (Hollingshead et al., 2018; Kurth & Keegan, 2012; Schaddelee & McConnell, 2018). This study will look at student engagement in students with mild intellectual disabilities from the perspective of the teacher.

Research Questions

Student engagement is an indicator of academic achievement of students (Bouck, 2017; Brown et al. 2008; Carini, Kuh, & Klein, 2006). General education classrooms continue to seek ways to engage students in the learning process in order to develop the necessary skills needed to become engaged citizens (Bouck, 2017; Carini et al., 2006; Finn & Zimmerman, 2012; Hollingshead et al., 2018). Increased advances in technology has enabled teachers to become more innovative in developing learning strategies that allow students to take more control of the learning process. Typical developing students have access to more resources than ever before,

and resources have added a much-needed depth to how students learn and develop (Bouck, 2017; Finn & Zimmerman, 2012; Hollingshead et al., 2018).

Students with mild intellectual disabilities do not receive the same opportunities in the process of their education as non-disabled peers (Bouck, 2017; Botha & Herselman, 2015; De La Paz, 2013; Salas-Pilco, 2013). Students are required to meet the demands of the 21st century as well as meeting the expectations of their communities and the world around them (Brown et al. 2008; Chao & Chou, 2017; Kurth & Keegan, 2012). To address specific needs, student must be actively engaged in the learning process (Bouck, 2014, 2017; Brown et al. 2008; Salas-Pilco, 2013). Technology and innovation have become a huge part of education in mainstream classrooms, but many teachers still lack skills in engaging students with mild intellectual disabilities in the lessons (Bouck, 2017; Brown et al., 2008; Moreno, Luria, & Mojkowski, 2013; Stephenson, & Carter, 2015).

Since the development of Individuals with Disabilities Education Act (IDEA), which developed laws that guide the education of students with disabilities, a shift in the educational process has left a void in the education of students with disabilities (Bouck, 2017; Brown et al., 2008; Stephenson, & Carter, 2015). The following questions were developed to help determine if student-centered classrooms that utilize technology increase the engagement of students with mild intellectual disabilities. Accordingly, the research questions addressed by this study are:

1. How does student-centered learning, implemented through the use of technology, impact the level of engagement for middle school students with mild intellectual disabilities being educated in the mainstream classroom?

2. What are the perceptions of teachers on how middle school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in the mainstream classroom?
3. As perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle school students with mild intellectual disabilities impact an equitable and inclusive learning environment?
4. What types of challenges do middle school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment?

Description of Terms

When information is shared, having a common language allows that information to take meaning (Creswell, 2013; Lum, 2005). Specific terminology helps to identify key information that allows a common understanding of the information that has been presented (Creswell, 2013; Lum, 2005). The terms and definitions listed below were established to aid with context throughout this research investigation:

21st Century skills. Defined as collaboration, digital literacy, creativity, communication, critical thinking, and problems solving skills developed through the use technology and innovation (Heidin, 2016; Salas-Pilco, 2013).

Critical thinking skills. An ability to take in information, objectively analyze it, and make reasonable judgements (Salas-Pilco, 2013).

Digital literacy. An ability to use technology and communication to find, develop, assess, and communicate information (Hedin, 2016).

Direct instruction. In education, direct instruction is the explicit teaching strategy for developing specific skills. This is a teacher-directed strategy where teachers lead the learning instead of students leading the learning process (Kanfush, 2014).

General education classroom. This is a classroom using a program of education designed for typical developing children to meet state standards or common core standards if adopted (Serdyukov, 2017).

Holistic. In education, holistic seeks to understand and develop the whole child in connecting learning to the world around each child (Tan, 2015).

IDEA. Individuals with Disabilities Education Act is a law created to make free appropriate public education accessible to students with disabilities who have met eligibility requirement and ensures special and related services for eligible children.

Innovation. The implementation of new ways to develop educational needs of students. Taking previous practices and connecting those practices to technology in a way that helps students build skills that will benefit them within the world (Mureno, Luria, Mojkowski, 2013; Serdyukov, 2017).

Intellectual disability. A disability of significant intellectual functioning and an individual's adaptive behavior to his/her surroundings (Stephenson, & Carter, 2015).

Mainstream classroom. An educational classroom that is predominately made of typical developing children but includes students with special education services (Bouck, 2017).

Mild intellectual disability. Individuals with mild intellectual disabilities have slower processing in all areas of conceptual development, social, and daily living skills who have an IQ score range of 50 to 70 (National Center for Biotechnology Information, 2018).

Phenomenological qualitative research. The experiences of others are examined through responses based on an individual's understanding of experiences they have concerning a specific topic (Smith, Flowers & Larkin, 2009).

Student-centered instruction. The teacher provides instruction and access to technology that allow students to develop how they learn what is being presented in a meaningful way. The student controls how he/she will show what they have learned using technology (LINCS, 2010)

Student-centered learning. An approach to learning where students controls the what, why, and how they learn thus engaging students in the learning process (LINCS, 2010).

Student engagement. The degree of attention and interest a student shows and the level of motivation they show in the learning process. The level students become vested within classroom processes (Clarke, Haydon, Bauer, & Epperly, 2016).

Technology. Technology can be many different things from smart board to calculators but for the purpose intended is one-to-one laptop devices students use in innovative ways (Serdyukov, 2017)

Significance of the Study

The exploration of the research questions within this study will help build an understanding of the problem and may help drive policy-making decisions on best practices when working with students who have mild intellectual disabilities. Examining the effects of student-centered strategies could show a benefit to helping students with mild intellectual disabilities connect to the world in which they live on a higher level than simply building learning skills and abilities (Bouck, 2014; Kanfush, 2014; Palak & Walls, 2009, Shani & Herbel, 2016; Trilling & Fadel, 2009). Helping students with mild intellectual disabilities make a

connection to the world could help drive the development of teacher preparation programs that would provide more detailed instruction in working with students who have special needs.

Many teacher preparations programs do not provide enough training for working with students who have special needs (Selanikyo, Yalon-Chamovitz, & Weintraub, 2017; Shani & Hebel, 2015; Sharma & Sokal, 2016). Learning the impact of student-centered instruction through the use of technology on the level of engagement in students with mild intellectual disabilities could help provide information that would assist pre-service teachers understand the needs of students with mild intellectual disabilities in developing appropriate and strong educational practices in the classroom. Current practices do provide strong development of skills in dealing with students who have mild intellectual disabilities (Selanikyo, Yalon-Chamovitz, & Weintraub, 2017; Shani & Hebel, 2015; Sharma & Sokal, 2016). In addition, many teachers do not feel comfortable implementing technology in instruction (Palak & Walls, 2009, Shani & Hebel, 2016; Trilling & Fadel, 2009). This study will allow colleges and universities to develop stronger practices that will help pre-service teachers develop skills in both technology and working with students that have mild intellectual disabilities.

Moreover, this study may help drive current policy for teaching students with mild intellectual disabilities since most of the current traditional practices do not meet the needs of the 21st century (Bouck, 2017; Botha & Herselman, 2015; De La Paz, 2013; Salas-Pilco, 2013). Developing policy that meets current needs is necessary because the world is changing, and education must meet the needs created by those changes. Additionally, this research can help teachers, schools, and districts understand what is needed in the development of students with mild intellectual disabilities. This can be done through the development of specific policies concerning curriculum being used, strategies that will be used, and professional development

designed to meet the needs of the teachers implementing student-centered practices and technology in the mainstream classrooms.

Theoretical Framework

The theoretical framework of a study is essentially the blueprint of the study. Much like architects use blueprints to build houses and buildings, the theoretical framework helps to build on the research and provides the principle, concepts, constructs, and tenants of the research (Grant & Osanloo, 2014; Luse, Mennecke, & Townsend, 2012). For this study, the Transformational Teaching Theory was established as the theoretical framework (Slavich & Zimbardo, 2012). The Transformational Teaching Theory looks at learning in the classroom as active learning, student-centered learning, collaborative learning, experimental learning, and problem-based learning (Duncan, 2010; Nicholson, 2018; Slavich & Zimbardo, 2012). The classroom is transformed from a teacher-centered strategy to a student-centered environment. Students begin to take charge of the learning process and even take part in the development of what is being learned in the classroom. Strategies of 21st century learning is building collaboration, communication, problem-solving, critical thinking, and creative development skills which all students must be able to achieve (Duncan, 2010; Nicholson, 2018; Slavich & Zimbardo, 2012). The Transformational Teaching Theory is at the very core of creating a student-centered learning environment that uses innovation to become engaged in the process of taking ownership in how each student learns in the classroom (Bouck, 2017; Duncan, 2010; Nicholson, 2018; Slavich & Zimbardo, 2012).

Post-secondary learning institutes as well as many jobs throughout the world are requiring the same 21st century skills (Bouck, 2017; Duncan, 2010; Nicholson, 2018). Students with mild intellectual disabilities must be provided equal opportunities to build necessary skills

that will allow them to become engaged and productive members of the society they will enter. The transformational learning theory provides the opportunity for all students, including those with mild intellectual disabilities to build skills (Duncan, 2010; Nicholson, 2018; Slavich & Zimbardo, 2012).

Overview of Research Methods

The methods used for research is the foundation on which a specific research study is built (Creswell, 2013; Ivankova et al.,2006). This qualitative study uses a phenomenological design approach to collect data to develop a strong understanding of any phenomenon that may exist (Creswell, 2013; Ivankova, Creswell, & Stick, 2006). The phenomenological design allows the study to include multiple methods such as interviews and to provide the researcher with necessary information targeted in answering the research questions (Creswell, 2013; Ivankova et al.,2006). Using the phenomenological design allows participants to share perceptions of the experiences they have with the level of engagement in students with mild intellectual disabilities while using technology as a student-centered learning strategy.

Purposeful sampling was used to select five teachers of middle school classrooms. The criteria for the purposeful selection of participants was to ensure each uses and have been using technology as a student-centered learning strategy in the classrooms for a minimum of one year. Additionally, those participants selected must currently have students in the mainstream classroom who have mild intellectual disabilities. Semi-structured interviews were used to bring depth to the qualitative data through the perceptions and opinions of the participants.

Following the semi-structured interviews, the data collected were then transcribed and coded. Codes were then put into different categories to determine what themes from the interview questions have developed. Once themes were developed, those themes were then

reported back to the participants to determine their validity. Finally, once verified, the themes were used to possibly answer the research questions presented.

Chapter II

Review of Literature

Introduction

Education is no longer an industrialized process as the development of educational practices has begun to integrate technology into the classroom (Brown et al., 2008; Duncan, 2010; Bouck, 2014, 2017; Salas-Pico, 2013). Many classrooms have moved from teacher-centered instruction to student-centered to help develop the necessary skills students need to enter higher-education as well as the workforce (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Srivastava, 2017). Many schools, however, still do not have the experience or resources needed to successfully develop students with mild intellectual disabilities (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Srivastava, 2017). This would suggest that many students with mild intellectual disabilities may not be engaged in the learning process within a technological classroom (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Bouck, 2017; Serdyukov, 2017; Srivastava, 2017). The purpose of this study was to look at how technology in the mainstream classroom effects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild intellectual disabilities.

The literature reviewed will serve as an overview of information targeted toward research in educational practices, perceptions, and how education is progressing related to the engagement of students with mild intellectual disabilities. Current classroom practices, perceptions of learning, and a need for reform in developing students with special needs will be explored by examining the following: 1) traditional practices in special education, 2) teacher perceptions and

development, 3) holistic student development, 4) 21st century learning practices, 5) learner-centered support, 6) framework for 21st century learning (Pierce & Cleary, 2016). The intent of this review is to develop an understanding of the current research available and to ascertain gaps in the research that will justify the need for the focus of the current study.

Theoretical Framework

Transformational teaching is a theory that teachers or instructors can guide students in developing self-discoveries that aid in shaping what they believe about themselves (Slavich & Zimbardo, 2012). The theory of transformational teaching looks at the development of mastery learning through learning-related beliefs, values, attitudes, and skills (See Fig 1.). This theory is rooted in the social cognitive theory (Bandura, 1986) as well as the constructivist theory (Piaget, 1926; Vygotsky, 1978). The social cognitive theory discusses how individuals have influence over how they function in events of their lives through their own actions (Bandura, 1986; Slavich & Zimbardo, 2012). The constructivist theory looks at the development of knowledge through based on experiences (Piaget, 1926; Vygotsky, 1978).

Contemporary methods in the classroom includes collaborative learning, problem-solving, and higher order of thinking (Duncan, 2010; Nicholson, 2018; Slavich & Zimbardo, 2012). The Transformational Teaching Theory looks at learning in the classroom as active learning, student-centered learning, collaborative learning, experimental learning, and problem-based learning. Styles of 21st century learning that build collaboration, communication, problem-solving, critical thinking, and creative development skills. To accomplish this, teachers must develop strategies that allow students to learn and discover new ways of building their skills. Collaborative learning is essential in developing valuable skills students will need to become

engaged members of the community (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010, Slavich & Zimbardo, 2012).

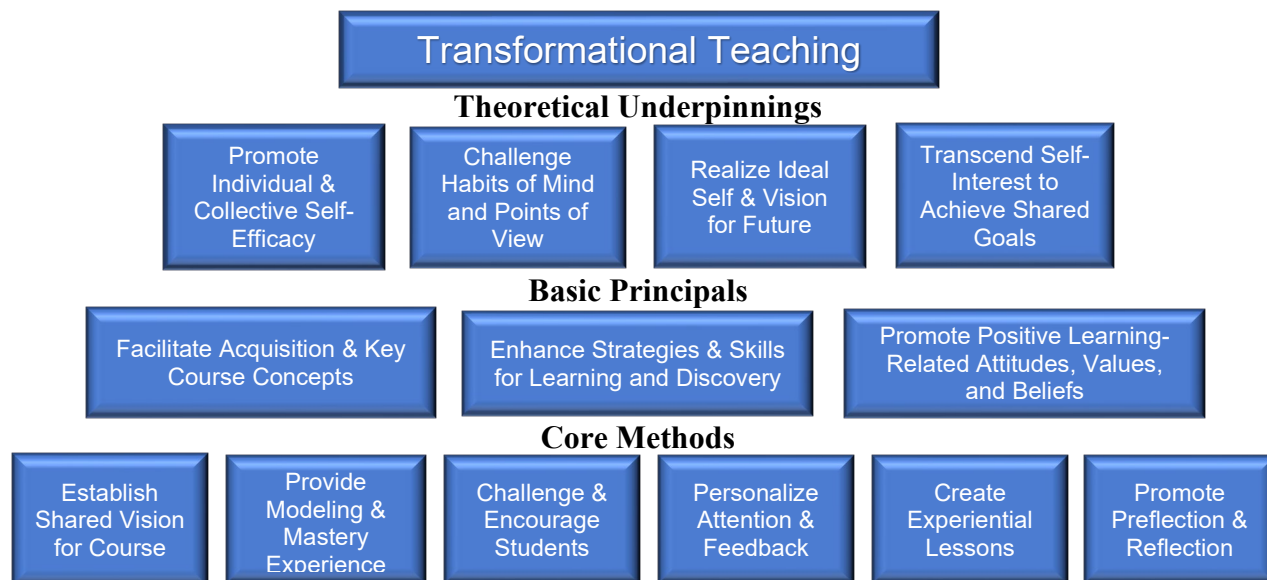


Figure 1. Underpinnings, principals, methods of the core areas of transformational teaching theory. Adapted from Slavich, G. M., & Zimbardo, P. G. (2012) “Transformational Teaching: Theoretical Underpinnings, Basic Principles, and Core Methods.” *Educational Psychology Review; New York* 24(4), 569–608.

The transformation of students is critical in meeting the needs of the world in which they live (Nicholson, 2018; Slavich & Zimbardo, 2012). Students need to be more involved in the learning process. Currently, teachers often take the lead in the learning process, but students do not have a full understanding of what learning is when a teacher is telling students what to do. Instead of learning what they need to do they face challenges that inhibits the learning process. Teachers must develop strong skills that will help students face and overcome those challenges as they begin to take charge of their own learning. Transformation learning allows students to transform by increasing the students’ (a) academic self-efficiency, (b) self-regulatory capabilities, (c) self-directed learning skills, learning-related attitudes, values, and beliefs, and (d) to use the knowledge they gain meaningfully within their lives (Slavich & Zimbardo, 2012).

Education should be inspiring not informing and educators should be ensuring students have the skills (problem-solving, critical thinking, creative thinking) and attitudes (positive, willing to try, and growth mindset) (Rosebrough & Leverett, 2011; Slavich & Zimbardo, 2012). Instructors/educators can guide students by helping them develop new beliefs about their abilities. The well-being of a country's social and economic status depends on the level of education its citizens are receiving, and education today is required to be both efficient and effective to meet the demands of society (Serdyukov, 2017). Teachers need to look at reinvention of innovation in the classroom to help students develop skills that will aid them in becoming engaged in the world around them (Kinder et al., 2005; Moreno, Luria, Mojkowski, 2013; Sansom, 2017; Serdyukov, 2017).

Looking at education holistically, education must be viewed as interrelated and interdependent as education is a system that follows the values, traditions, principles, and laws of society (Kanfush, 2014; Kinder et al., 2005; Serdyukov, 2017). When looking at education the world over, a common theme is the strength in teaching can be found in how learning environments are developed. Teacher education and professional development are two areas where building innovative skills are needed so those skills can be transferred to the learning process of students (Kinder et al., 2005; Serdyukov, 2017). The United States must have effective innovation to develop meaningful learning outcomes which can start by innovating programs in secondary schools and universities which will foster a reform within education (Kinder et al., 2005; Pierce & Cleary, 2016; Serdyukov, 2017).

Society must be ready to support innovation and professionals must learn to develop self-efficiency skills to build positive attitudes for innovative ways to help students learn. The education system needs to be revitalized, and systems must be implemented that will build the

skills students will need within society. Development of critical thinking skills, problem-solving, creativity, and self-efficacy in our school cultures will provide students with a better chance of success. Otherwise, education without innovation will fail as our world continues to grow in more innovative ways (Kanfush, 2014; Kinder et al., 2005; Moreno, Luria, Mojkowski, 2013; Serdyukov, 2017).

The American Classroom: Then and Now

Teacher and students are facing many challenges in the world today, and educational practices have been limited and still hold true to many of the industrialized models of the past (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010). At the time, the education system was created to compliment what was happening in the country. The industrial revolution took hold, and the education system followed suit to help students meet the demands of the changing society. Students packed into classrooms, sat in a seat and listened as the teacher told them what they needed to know. Today, students need to meet the new demands on the changing world around them, and that world is one of technology (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010). US Secretary of Education Arne Duncan (2010) stated:

So, what do I mean when I talk about transformational productivity reforms that can also boost student outcomes? Our K–12 system largely still adheres to the century-old, industrial-age factory model of education. A century ago, maybe it made sense to adopt seat-time requirements for graduation and pay teachers based on their educational credentials and seniority. Educators were right to fear the large class sizes that prevailed in many schools. But the factory model of education is the wrong model for the 21st-century (para. 22).

Education has remained in an industrial age for far too long, but the world has moved on to find itself in the information age (Aslan & Reigeluth, 2013; De La Paz, 2013; Gurria, 2011; Trilling & Fadel, 2009). Education has not moved into the information age at the rate the world has causing a need for a shift in educational practice (Aslan & Reigeluth, 2013; De La Paz, 2013; Gurria, 2011). Discussed, were the roles of those leading technology within schools. This helps define what support are needed to implement innovative ways to teach students and sustain those practices within schools (Aslan & Reigeluth, 2013; De La Paz, 2013). Research supports innovative practices implemented in the special education classroom help build skills in students with mild intellectual disabilities, not just schools (Aslan & Reigeluth, 2013; Gurria, 2011). There is a strong need for a shift within education as a whole and a need to begin to look at a holistic approach to developing all students regardless of perceived best practices (Aslan & Reigeluth, 2013; Gurria, 2011; Trilling & Fadel, 2009).

One of the main concerns has been to develop an understanding of technology integration versus technology transformation (Aslan & Reigeluth, 2013; Gurria, 2011). Technology integration involves adding the use of computers, laptops, and iPads within projects and activities in the classroom (Aslan & Reigeluth, 2013; Gurria, 2011). Transformation, however, transforms classrooms into 21st-century classrooms designed to meet global needs for students to function within the world. In support of the research, further research discusses the evidence of transforming classrooms from a teacher-centered, standardized program to a learner-centered, customized paradigm to maximize student learning (Aslan & Reigeluth, 2013; Gurria, 2011; Trilling & Fadel, 2009).

A review of effective practices for students with learning disabilities from the perspective of practices used in teaching shows that traditional practices are to focus on basic

skills (De La Paz, 2013; Gurria, 2011; Trilling & Fadel, 2009). This, however, is not the practices reviewed in this research as the author suggests that special education researchers and teachers must do more than just provide traditional practices in learning vocabulary and developing reading skills if students with learning disabilities are going to have the same opportunities as those peers within general education classrooms (De La Paz, 2013; Gurria, 2011; Trilling & Fadel, 2009).

Special education reform must be developed by understanding the goals for learning and developing reform-based practices that will allow special education teachers to continue to build specifically designed instruction in more innovative ways (De La Paz, 2013; Pierce & Cleary, 2016; Salas-Picio, 2013). Specific ways to reform practices is to move teacher modeling to collaborative group learning to build self-regulation strategies and procedural scaffolding to strategy steps to help develop a master of each step. Using classroom discussions, debates, structure strategy steps, inquiry instruction, and introducing innovation into lessons, students with learning disabilities were able to develop mastery skills much like their general education peers. All of which was done using the same curriculum as those general education peers (De La Paz, 2013; Gurria, 2011; Salas-Picio, 2013).

The world of technology is creating a demand for students to have a strong connection to technology and idea of being life-long learners because students need to learn to communicate and be knowledgeable about the world around them and how the world advances (Gurria, 2011; Pierce & Cleary, 2016; Salas-Picio, 2013). References are made to developing policies that support learning in the 21st century. Critical thinking and problem-solving are skills that have been a part of education for decades but are critical competencies of 21st-century learning. As 21st-century learning skills are becoming increasingly important, many educational systems still

follow many of the traditional practices due to a lack of teacher development as well as access to technology (Bouck, 2017; Gurria, 2011; Pierce & Cleary, 2016; Salas-Picio, 2013).

Students with intellectual disabilities have been ignored for some time and a new vision for future research is needed to create a stronger learning experience for students (Bouck, 2017; Salas-Picio, 2013). Students with mild to moderate intellectual disabilities typically have an IQ between 50 and 70 and exhibit impairments in adaptive skills. Impairments can cause tremendous difficulties in the educational setting (National Center for Biotechnology Information, 2018). The information presented within this section discusses the need to re-invent learning outcomes of the educational experiences for students with mild intellectual disabilities that will support best practices supported by research-based strategies. The goal is to raise the learning outcomes so students with mild intellectual disabilities can meet the needs they will be faced with once they leave school (Bouck, 2017; Gurria, 2011; Salas-Picio, 2013).

Post-educational outcomes typically revolve around three main areas for students with mild intellectual disabilities which are employment, post-secondary education, and independent living (Bouck, 2017; Gurria, 2011). Students with mild intellectual disabilities must focus on both functional and academic learning but in recent years, the functional aspect of learning has become a less explored method of learning. This functional learning is what students will need to be successful outside the classroom. Students who fall into the mild intellectually disabled category must be able to meet the needs of the world they enter, and education experiences need to be refocused on adult life outcomes for students (Botha & Herselman, 2015; Bouck, 2017; Gurria, 2011;).

The major focus of Transformational Teaching is to provide information concerning the framework and competencies of 21st-century learning as well as national organization

information in how performance indicators are described (Salas-Picio, 2013; Trilling & Fadel, 2009). An analysis of the framework to determine why the elements of the framework are important and how those competencies are used to build 21st-century learning skills. Research conducted helps develop a better understanding of 21st-century learning and bring to light current trends and how students can cultivate the learning of competencies (Salas-Picio, 2013; Trilling & Fadel, 2009). The idea of 21st-century learning is not new, but many teachers are still not comfortable with a 21st-century learning strategy because, just like students, the idea needs to be cultivated within them (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Salas-Picio, 2013; Trilling & Fadel, 2009).

The world has gone through many changes and the need for critical thinking, and problem-solving skills has increased from the human interface to a digital realm that connects people in ways it could not just 30 years ago (Botha & Herselman, 2015; Salas-Picio, 2013; Trilling & Fadel, 2009). Different areas listed in the source information section help build an understanding of needed change to the face of modern-day educational practices. More specifically, how learning has become more about student-centered learning and less about teacher-centered instruction, practice, and independent work. The text also discusses learning research, and the five key findings deal with (a) authentic learning, (b) mental model building, (c) internal motivation, (d) multiple intelligences, (e) social learning (Botha & Herselman, 2015; Bouck. 2014; Salas-Picio, 2013; Trilling & Fadel, 2009).

Twenty-first century learners must be as literate in a digital sense as they are in reading and writing (Botha & Herselman, 2015; Bouck. 2014). Twenty-first century skills are required in the world current students are growing up in and will be necessary when students leave the educational setting and enter the world (Botha & Herselman, 2015; Bouck. 2014; Trilling &

Fadel, 2009). Without digital literacy, many students will not be prepared for what they will face and will be at a disadvantage if they do not become digitally literate. Finally, the support system for 21st-century learning is critical to the successful implementation of such teaching strategies. The support system deals with developing and implementing specific (a) standards, assessments, (b) curriculum and instruction, (c) professional development, (d) learning environments (Botham & Herselman, 2015; Bouck, 2014; Palak & Walls, 2009; Salas-Picio, 2013; Trilling & Fadel, 2009).

Teachers who build skills in developing 21st-century learning within the classroom have additional resources they can draw on to develop skills within students (Botham & Herselman, 2015; Palak & Walls, 2009; Trilling & Fadel, 2009). Multiple sources discuss the need for reform within schools that will begin to develop needed 21st century skills in the classroom (Botham & Herselman, 2015; De La Paz, 2013; Palak & Walls, 2009; Salas-Picio, 2013; Trilling & Fadel, 2009). As the effects of changes within the world are now driving what students must know and what skills are showing most prevalent in society (De La Paz, 2013; Palak & Walls, 2009; Trilling & Fadel, 2009). To build effective classroom strategies and determine what is needed concerning skills, four thoughts are presented as follows:

- Think about the world 20 years from now after the student has left school and is finding their place in the world (Botham & Herselman, 2015; De La Paz, 2013; Palak & Walls, 2009; Salas-Picio, 2013; Trilling & Fadel, 2009).
- Think about the world and what skills your students will need to be successful (Botham & Herselman, 2015; De La Paz, 2013; Palak & Walls, 2009; Salas-Picio, 2013; Trilling & Fadel, 2009).

- Think about things you have learned and what were the conditions that helped you learn in those situations (De La Paz, 2013; Palak & Walls, 2009; Salas-Picio, 2013; Trilling & Fadel, 2009).
- After thinking about all the things discussed, look at how you would design the learning experiences for your students (Botham & Herselman, 2015; Salas-Picio, 2013).

Teachers must think about things to help students make the most of their learning experiences that will help them integrate into society effectively (Botham & Herselman, 2015; De La Paz, 2013; Palak & Walls, 2009; Trilling & Fadel, 2009).

Challenges of Adolescence

The transition into adolescence can result in many different challenges (Alimohammadi, Samani, Khanjari, & Haghani, 2019; Kheyrikhah Mokarie, Neisani, & Hoseini, 2013).

Adolescence are faces with both physical and cognitive changes that affect many aspects of their lives. The effects of physical and cognitive changes can cause individuals going through adolescence to struggle with their identity and their development (Alimohammadi et al., 2019; Kheyrikhah et al., 2013). Many students are unaware of the changes they will go through prior to changes occurring causing them to be uncertain of what is happening and what will happen (Alimohammadi et al., 2019; Kheyrikhah et al., 2013).

In most cases, the changes adolescents go through occur during grades five through seven (Alimohammadi et al., 2019; Kheyrikhah et al., 2013). Grades six and seven are two of the main grade levels students are in during their middle school academic careers. The changes adolescents face can cause an array of difficulties with the academic and social development of students (Barkhordari-Sharifabad Vaziri-Yazdi, & Barkhordari-Sharifabad, 2020; Choi & Kim, 2016). During late-elementary and middle school years, students begin developing a sense of self

and that sense of self can often be skewed or distorted by the physical, cognitive, and emotional changes. Some students look at others who may have already gone through puberty and have a stronger sense of self as a model for their own behavior (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016).

Adolescence is a period of transition that encompasses physical changes, unexpected reactions of others, and is a critical stage of growth (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016; Kheyrkhah et al, 2013; Shirzadi, Asghari-Jafarabadi, Nadrian, & Mahmoodi, 2016). During this period of transition, students are trying to determine who they are and how they fit into society. This transitional period affects many different aspects of the student's life to include both the student's academic growth as well as his or her social development (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016; Kheyrkhah et al, 2013; Shirzadi et al., 2016). The more difficulties a student has during adolescence impacts how he or she performs in the classroom as well as in the numerous social situations of middle school (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016; Kheyrkhah et al, 2013; Shirzadi et al., 2016). Numerous studies show that students unprepared for adolescence, puberty, and the transition of one's self from childhood to adulthood can have a tremendous impact on the academic development of that student (Barkhordari-Sharifabad et al., 2020; Choi & Kim, 2016; Kheyrkhah et al, 2013; Shirzadi et al., 2016). The more prepared a student is for this transitional period, the better he or she will perform.

Traditional Practices in Special Education

A collection of 45 studies covering direct instructional practices across multiple areas of academics determined direct instruction was the most effective teaching strategy for students with disabilities (Botham & Herselman, 2015; Bouck, 2014, 2017; Kinder et al., 2005). Three of

the studies focused how students progressed being instructed differently than with direct instruction. Eight of the studies also included direct instruction practices with severe intellectual disabilities within students. Of the total 45 studies, the research shows a 90% positive effectiveness rate of direct instruction (Kanfush, P. M., 2014; Kinder et al., 2005). Each of the studies reviewed was chosen to support direct-instruction methods due to the success the method of instruction has had within the special education classroom, but this remains an industrialized approach to teaching student who were born and had grown up in an information age (De La Paz, 2013; Kanfush, P. M., 2014; Kinder et al., 2005).

Over the course of special education, direct instruction for all content areas of education is the most adopted form of instructional practices (De La Paz, 2013; Kinder et al., 2005; Kurth & Keegan, 2012). Direct instruction has been paired with special education because of how successful this method of instruction has been in developing academic skills in students with special needs (De La Paz, 2013; Kinder et al., 2005; Kurth & Keegan, 2012). The Council for Exceptional Children (2004) discuss how the 2004 reauthorized Individuals with Disabilities Education Act (IDEA) which explains how scientifically based instructional practices and programs are the focus of how students with disabilities should be taught and part of the instructional practices is structured direct instruction. Direct instruction meets the basic needs of the IDEA of the specifically designed instruction; this method has been the most developed and most practiced in special education classrooms (Bouck 2014; The Council for Exceptional Children, 2004,).

The perspectives of teachers concerning direct instruction practices on students with severe intellectual disabilities follow the understanding that direct instruction is the most effective strategy for students with more severe disabilities (Browder et al., 2018; De La Paz,

2013; Kanfush, 2014; Kinder et al., 2005;). In a private-licensed school, the researcher used semi-structured open-ended interviews. The second area of data collection was through document analysis. The data analyzed the direct instruction programs used by the teachers in the classroom and the correspondents between teachers and to identify any themes that may have been presented within those correspondences concerning direct instruction practices (Browder et al., 2018; Kanfush, 2014).

Each of the teachers involved in the study liked the direct instruction practice used for the educational programs for students with severe intellectual disabilities (Browder et al., 2018; Kanfush, 2014). None of the teachers had any formal training with direct instruction but liked the scripted curriculum and how the curriculum moved from one skill to the next. The results from the parents where they did not understand the direct instruction process being used but were satisfied with the direct instruction program and the results of that program on their children (Browder et al., 2018; Kanfush, 2014).

How do educators make adaptations to the curriculum to foster learning for students with disabilities and how effective those adaptations were in fostering learning (Kanfush, 2014; Kurth & Keegan, 2012)? The researchers chose three different school districts from urban to rural and conducted educator reflections to determine what adaptation were made and how that adaptation effected learning. Educators were also given a self-rating scale on how effective the adaptations were for the students. The results of the study covered domain of adaptations, how individualized education plan goals were addressed in the adaptations, curricular and instructional adaptations, and what changed and what stayed the same (Kurth & Keegan, 2012).

Educators considered student needs to develop the most appropriate adaptations, the ease of use for the students, and how well the adaptations made the sore curriculum accessible

(Cadette et al., 2016; Kurth & Keegan, 2012). Educators also expressed a higher success rate for students with adaptations when delivered with direct instruction and focused learning. The direct instruction method is widely used because of the tremendous success rates but is limited in how students learn and respond. All adaptations should be focused on needs, delivered directly, and age and culturally appropriate for each student. This is a common theme for students with special needs concerning adaptations to the core curriculum and to provide instruction in a direct manner that allows the student to follow and be guided through practice (Cadette et al., 2016; Kurth & Keegan, 2012).

A study directed at the effectiveness of direct instruction on students with Autism was conducted at a charter high school for students with Autism to determine how effective the direct instruction method was and how well students responded to this method (Cadette et al., 2016). The study involved just three secondary students diagnosed with Autism, and none of the students had any prior experience with the direct instruction method. The data was collected using the "WH" Question Comprehension Test. Data was collected in the form of verbal responses from the students and categorized as 1 (Correct), 2 (Incorrect), or 0 (No response). The results of the data should reflect a significant improvement to mastery of the "WH" (who, what, where, when) questions when using a scientific research-based curriculum. Students develop skills as they are taught using direct instruction in a small group setting (Cadette et al., 2016; Kanfush, 2014). As the group size increases, the direct instruction may become less effective (Cadette et al., 2016; Kanfush, 2014; Kurth & Keegan, 2012).

Student-Centered Learning

Student-centered learning is a process that allows the student to connect new information to previous acquired knowledge and build skills and knowledge through problem-

solving (Choi & Rhee, 2014; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chun Chun Chen, 2019; Schaddelee & McConnell, 2018). Instead of presenting information to students that teachers expect them to absorb in one specific way, students are provided new information and are expected to connect that information to real-world situations. Students must problem-solve how the information they have learned can be applied and develop solutions that do not always adhere to standard expectations but allows students to collaborate with one another and be creative in how they present their solutions (Choi & Rhee, 2014; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chun Chun Chen, 2019; Schaddelee & McConnell, 2018).

Student-centered learning practices have been a predictor to the academic development and success of students (Carini et al., 2006; Peng & Chun Chun Chen, 2019; Schaddelee & McConnell, 2018). In student-centered learning environments, students are more engaged in the learning process because they are actively involved in the process of learning. Students in this type of environment are expected to develop information gathering skills and use that information to problem-solve how, what they have learned, can be used in various real-world problems and situations (Carini et al., 2006; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chun Chun Chen, 2019; Schaddelee & McConnell, 2018).

The role of the teacher in a student-centered classroom changes in that teachers and students share authority in the learning process (Basu and Barton 2010; Juntunen and Aksel, 2013; Keiler, 2018). Essentially, student and teachers become partners in the process of learning. Teachers provide guidance and student take information and learn how that information can be applied to real-life situations. Teachers no longer dominate the classroom as they become a resource for students (Basu and Barton 2010; Juntunen and Aksel, 2013; Keiler, 2018). Teachers no longer lecture, and present information based on specific curriculum guidelines. Teachers

begin assessing the student's prior knowledge, what students information students understand from the learning experience, and how to guide students in the directions they need to go in developing knowledge in the learning process (Basu and Barton 2010; Juntunen and Aksel, 2013; Keiler, 2018).

Student Engagement

Student engagement in learning shows a high level of learning and development because students are engaged more with the material and topics they are learning and this lends to success in the learning process (Carini et al., 2006; Hollingshead et al., 2018; Schaddelee & McConnell, 2018). Student engagement in the classroom allows students to take part in the learning process. Lessons are developed with activities that allow students to not only practice what they are learning but they work together, develop a critical understanding of the lesson objects, and are able to apply that understanding to real life problems (Carini et al., 2006; Hollingshead et al., 2018; Schaddelee & McConnell, 2018). This makes the learning process meaningful in a way that allows student to put into practice what they have learned (Carini et al., 2006; Hollingshead et al., 2018; Schaddelee & McConnell, 2018).

Student engagement in the classroom is only one arena of how students learn, and studies show that engaged students all show a depth of learning that does not always come from the traditional practices (Carini et al., 2006; Daniel & Cooc, 2018; Hollingshead et al., 2018; Schaddelee & McConnell, 2018). Student-centered learning environments allow students to take more control over the learning process. Lessons that allow students to take the lead on the learning process allow students to develop skills that will help them become more engaged (Daniel & Cooc, 2018; Hollingshead et al., 2018). Critical thinking, collaboration, problem-solving, creativity, and communication are the skills needed which allows students to be more

cognitively and emotionally engaged in the process of learning (Carini et al., 2006; Daniel & Cooc, 2018; Hollingshead et al., 2018; Schaddelee & McConnell, 2018).

Classroom engagement is a critical factor in how students learn what is being presented and will determine whether students are learning in a positive or negative way (Ayçiçek, & Yanpar Yelken, 2018; Hollingshead et al., 2018; Schaddelee & McConnell, 2018; Wang, Bergin, & Bergin, 2014). When students are engaged in the process of learning, they have higher levels of learning achievement and when engagement is low, lower levels of achievement are exhibited (Ayçiçek, & Yanpar Yelken, 2018; Hollingshead et al., 2018; Wang et al., 2014). Engagement must not specifically look at the cognitive aspect, engagement should also affect behaviors to develop a well-rounded learning environment (Ayçiçek, & Yanpar Yelken, 2018; Hollingshead et al., 2018; Wang et al., 2014).

To show that statements were in fact, correct, Wang et al. (2014) conducted research that consisted of two engagement inventories (pre- and post-) that were administered to a control group and an experimental group. The control group had not student-centered learning strategies implemented over the course of the study. The experimental group did have student-centered learning strategies implemented in their instruction over the course of the study. No significance between the two groups was reported, however, the score of the post-inventory were higher in the experimental group. The study did not conclusively show that student-centered practices to engage students in the learning process was better than traditional strategies, but with an increase in the engagement inventories, student did show overall, they were more engaged in the learning process (Wang et al., 2014). Numerous studies show that creating a student-centered learning environment allows students to become more engaged in how they learn and how much they

learn (Ayçiçek, & Yanpar Yelken, 2018; Hollingshead et al., 2018; Schaddelee & McConnell, 2018; Wang, Bergin, & Bergin, 2014).

Student engagement in the learning process has been shown to be a necessary element of learning (Ayçiçek, & Yanpar Yelken, 2018; Hollingshead et al., 2018; Schaddelee & McConnell, 2018; Wang, Bergin, & Bergin, 2014). One issue with engagement is that many students with mild intellectual disabilities do not receive the same education that non-disabled peers receive within the mainstream classroom (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Lei, Cui, & Zhou, 2018; Martin & Collie, 2018; Srivastava, 2017). Students with learning disabilities need to have a sense of belonging in any educational setting to help build confidence in developing skills and abilities (Haydon, MacSuga-Gage, Simonsen, & Hawkins, 2012; Nagro, Hooks, Fraser, & Cornelius, 2018; Wang, Bergin, & Bergin, 2014). Traditionally, small-group integrated instruction has been effective in developing skills but whole-group instruction is the predominate model of instruction in most inclusive classrooms (Haydon et al., 2012; Nargo et al., 2018).

Teachers must be able to develop a learning environment that allows students with learning disabilities to become part of the classroom and feel accepted in that environment (Haydon et al., 2012; Nargo et al., 2018). To do this, teachers must develop new methods of accessing the needs of students with learning disabilities (Haydon et al., 2012; Nargo et al., 2018; Simonsen, & Hawkins, 2012). Proactive strategies using whole-group response methods allows students with learning disabilities to be part of the group and not feel singled out because they did not know the answer or because they did not understand what was being asked of them (Haydon et al., 2012; Nargo et al., 2018; Simonsen, & Hawkins, 2012). Whole-group activities allows the inclusive setting to actively engage students with learning disabilities and allows those

students to develop skills through peer-to-peer interactions and access to learning through collaboration and communication. This leads to higher level of thinking and developing skills that build creative problem-solving skills (Haydon et al., 2012; Nargo et al., 2018; Wang, Bergin, & Bergin, 2014).

Teacher Perceptions and Development

An important aspect of education surrounds how teachers perceive instructional practices and how those practices are developed in the classroom (Botha & Herselman, 2015; Brown et al., 2008; Stephenson, & Carter, 2015). To determine the importance of instructional practices, how teachers perceive what is most effective, and the development of skills, a recent study focused on technology, traditional practices, access to technology and pedagogical strategies (Botha & Herselman, 2015; Brown et al., 2008). The focused was on classroom procedures, teacher training and professional development, teacher experience, attitudes, and support. Additionally, access to technology and the development of Teacher Tablet Toolkits which are developed resources for teachers to use that include technology and pedagogical and technological strategies that can be used in multiple ways to use in addressing various classroom issues (Botha & Herselman, 2015; Brown et al., 2008).

Creating of such a resource as a “Teacher Tablet Toolkit” is the not the final step in developing best practices in the classroom but such a resource for teachers helps develop necessary tools teacher can draw on and mix-and-match to address various needs within classroom instruction (Botha & Herselman, 2015; Brown et al., 2008). Initial results determined teachers who had a toolkit were able to develop critical skills within students and made instruction more meaningful. Teacher preparation programs and teacher professional development would benefit to developing technology in practice, so teachers can build a toolkit

that will allow instruction to be more meaningful and allow students to build skills that move them toward developing learning (Botha & Herselman, 2015; Brown et al., 2008; Stephenson, & Carter, 2015).

Teacher preparation programs are foundational cornerstone of building skills needed to work effectively with students who have special needs and to design appropriate instructional practices in the classroom that will meet the needs of the students (Botha & Herselman, 2015; Brown et al., 2008). Integrated teacher preparation programs at universities are designed not to replace specialists in the field of special education but rather to build skills in teachers when dealing with students how to have special needs. Results did show there is a better effect in teacher abilities in dealing with students who have special needs by developing better interventions and appropriate techniques that will aid in helping students with special needs access the curriculum. Data collected shows teachers who had integrated training helped those teachers develop ways for students with special needs to access various areas of the curriculum (Blândul & Bradea, 2016; Brown et al., 2008; Serdyukov, 2017). Additionally, concluded that one stand-alone course within a teachers' preparation program was not enough to effectively help mainstream teachers develop skills needed to develop proper interventions and more course embedded are needed throughout the program. Teacher candidate reflections showed with proper development; they were more prepared to help create new ways for students with special needs to access the curriculum and take more control over learning (Brown et al., 2008; Serdyukov, 2017; Stephenson, & Carter, 2015).

Teachers are knowledgeable about the role new technology plays in modern education but many lack trainings in using technology in the classroom with students who have special needs (Blândul & Bradea, 2016; Brown et al., 2008; Serdyukov, 2017; Stephenson, & Carter,

2015). Research has been presented that many cases of the use of technology with students who have special needs has been successful, the lack of training is an obstacle many mainstream teachers face in the classroom. Teachers must receive the appropriate training on creating opportunities for students with special needs in using technology to build the modern 21st century skills mainstream students receive. This would not only allow students with special needs to receive equal education but would increase the chances of those students integrating into mainstream learning opportunities (Blândul & Bradea, 2016; Brown et al., 2008;).

Previous and current research shows that students can learn to regulate learning but advance that further by looking at the perceptions and behaviors of teachers concerning self-regulated learning (Ewijk & Van Der Werf, 2012). Semi-structured open-ended interviews were used to determine teacher's beliefs concerning the impact of student engagement as well as the implementation of student-centered learning through the use of technology. Additionally, the behaviors of the teachers in how strategies are created and used to develop self-regulated learning within the classroom. A constructive-oriented beliefs scale and a beliefs of primary education scale was used to collect data to determine if the teacher's beliefs correlated with the behaviors for constructive or self-regulated learning strategies (Ewijk & Van Der Werf, 2012).

Teacher beliefs were determined to favor constructive learning over self-regulated learning as well as having more knowledge with constructive learning than that of self-regulated (Ewijk & Van Der Werf, 2012). In addition, teacher's behaviors show elements of self-regulated learning even though beliefs that constructive learning was better. The prediction of teachers choosing a constructive over self-regulated style is not conclusive. Implications within this study show teacher knowledge are lacking in the area of self-regulated learning strategies and that

teachers stay with what they know and what is more comfortable in the classroom (Ewijk & Van Der Werf, 2012; Klehm, 2014; Palak & Walls, 2009).

Technology in the classroom is important to developing a student-centered environment, but teacher perceptions concerning technology does not always follow this thought process (Palak & Walls, 2009; Shani & Hebel, 2016; Trilling & Fadel, 2009). Interviews and surveys exhibit data that express whether there are positive or negative attitudes toward technology by teachers, those attitudes had no bearing or influence on student technology use in creating a student-centered learning environment. The findings of the study concluded that technology may still be used to conduct teacher-centered strategies for instruction and even with access to technology, those tools do not necessarily mean teachers will use technology to create more collaborative or project-based learning environments. The study also determined that training in technology should be conducted to show how technology can be integrated into instruction instead of focusing on isolated training to aid teachers in developing student-centered pedagogy (Palak & Walls, 2009; Trilling & Fadel, 2009).

Technology is also not alone in developing students with mild intellectual disabilities in the 21st century as many teachers do not always feel prepared in teacher training programs to fully deal with the special needs of some students (Ewijk & Van Der Werf, 2012; Klehm, 2014; Palak & Walls, 2009, Shani & Herbel, 2016). In a recent study concerning the development of skills and strategies to deal with student who have special needs, three themes were identified that included training and components of theory, teachers' perceptions of own abilities, and school context that concerns inclusion of pupils with special needs in an inclusive setting (Shani & Herbel, 2016). Interviews and reflections were used to develop data to determine the effects of the three themes in how teachers are trained in teacher preparation programs within an

integrative program. The data collected was used to inform schools concerning updating current practices and preparing teachers both general and special education.

One main area revealed was general education teachers were not prepared for work with special needs pupils in an integrated program (Shani & Hebel, 2016). Many general education teachers felt they were not prepared to deal with the needs of some pupils. The information collected discovered the main areas that can be used to evaluate the effectiveness of any integrated programs. Teachers need to identify their role and responsibilities with students who have special needs, teachers must also build relationship and know the attributes of students, and teachers need to understand the elements of the context that support or hinder inclusion (Johnson, 2013; Klehm, 2014; Palak & Walls, 2009; Shani & Hebel, 2016).

Do teachers have positive attitudes toward the use of technology in special education classrooms to develop growth in students with special needs (Johnson 2013)? The focus in various content areas was used to determine, how appropriate technology use was for students with special needs, and the advantages and disadvantages of using technology in the special education classroom. The results of the study showed teachers and teacher assistants were very positive about the use of technology (iPads) in the special education classroom. The technology was targeted toward core curriculum areas of literacy and math. Student motivation and engagement was at the top of the advantages of using technology and had high rates of positive responses. The main disadvantage was shown in student confusion and aligned with a lack of understanding how to implement technology into lessons by the teachers (Ewijk & Van Der Werf, 2012; Johnson, 2013; Klehm, 2014).

Innovation in the special education classroom is not always looked at as being supported by sound educational practices so this study was to determine the perspectives of those

using technology to determine the effectiveness of technology within the special education classroom (Ewijk & Van Der Werf, 2012; Johnson, 2013; Klehm, 2014; Palak & Walls, 2009). This can be in part due to teacher knowledge of technology and the expectations of teachers toward students with disabilities. The research focused on students with disabilities (SWD), and the performances on high-stakes testing (HST) showed a significant difference in the expectations of teachers both general and special education (Ewijk & Van Der Werf, 2012; Johnson, 2013; Klehm, 2014).

Surveys were taken from 218 respondents, of which 34 were from special education and categories derived from the surveys were found in teacher attitudes toward the abilities of students with disabilities (SWD) and high-stakes testing (HST), attitudes toward fairness and reliability of SWD on HST, and differences in expectations of general and special education teachers (Johnson, 2013; Klehm, 2014). One additional element had to do with contrasts between teacher attitudes and practices in the classroom. Teachers have high expectations for learning but lower expectations for SWD being proficient on HST. This resulted in teachers attitudes that SWD require mastery re-teaching and the use of more direct approaches to developing necessary skills. Additionally, the lack of expectations drive how students in the classroom were instructed and the level of development (Johnson, 2013; Klehm, 2014; Palak & Walls, 2009). All of which, comes down to support and how support is developed in schools for students with special needs.

More information gained of students with special needs when supported by the administration; data shows professional development for special education teachers, the perceptions of instructional expertise by administrators, and what special education teachers needed to develop more effective skills in instructional practices and other areas of professional development (Klehm, 2014; Van Boxtel, 2017). The elements covered within the study consisted

of district demographics, teacher preparation, common-core standard and IEP alignment, and instruction and collaboration.

Collaboration practices between general education and special education teachers happened rarely but interactions are more frequent when initiated by teacher in special education (Klehm, 2014; Palak & Walls, 2009; Van Boxtel, 2017). Additional areas concerning common core standards and instructional expertise were answered by showing that common core expertise toward interventions and English language learners was lower in implementing evidence-based practices. The highest results fell within proficiency in teaching and instruction shifts in adapting to grade-level content. The final area in aligning common core standards to an IEP suggest that administrators agree special education teachers need to be skilled in aligning elements (Van Boxtel, 2017). To develop programs that allow students with special needs to access what their general education peers have access to takes careful development of policies and practices that help students with special needs access the same quality education presented in mainstream classrooms that will allow the same opportunities to learn (Klehm, 2014; Palak & Walls, 2009; Van Boxtel, 2017).

Holistic Student Development

To determine a probable predictive relationship between self-determination skills taught by special education teachers and the academic performance of students with disabilities from junior high schools a recent study looked how teachers were transferring self-determination skills in the classroom and the effects on student development (Botha & Herselman, 2015; Chao & Chou, 2017; Salas-Pilco, 2013). A correlation and a probable prediction between teachers being taught self-determination skills and the development of students with disabilities in junior high school. The teachers were given the self-determination scale to determine teachers taught in the

classroom and students were provided with the basic learning competency assessment to determine development (Botha & Herselman, 2015; Chao & Chou, 2017).

The results of the study showed a positive correlation between the teacher's self-determination skills in instruction and the overall development of the students with disabilities (Chao & Chou, 2017; Salas-Pilco, 2013). Additionally, teaching psychological empowerment helps build predictions toward student achieving a higher level of learning. The data obtained in this study showed through research that psychological empowerment and self-initiative abilities skills more often overlooked among special education teachers in creating student growth. This study also decided that whether the findings can be applied to other students with learning disabilities or sensory impairments is not clear but suggests that further clarification could be the focus of further studies (Botha & Herselman, 2015; Chao & Chou, 2017; Salas-Pilco, 2013).

Developing a holistic approach to student development in appropriate teacher preparation programs for dealing with students who have disabilities must address the teachers sense of self-efficacy in integrating students with disabilities and develop teaching methods that promote integration and inclusion (Palak & Walls, 2009; Shani and Hebel, 2016). Teachers must have the needed skills and the ability to use those skills in the classroom that will promote integration and inclusion for students with disabilities. Understanding each student concerning abilities skills is necessary to determine what practices in the classroom will promote efficient learning and development (Chao & Chou, 2017; Klehm, 2014; Palak & Walls, 2009, Shani & Herbel, 2016).

Research collected supports information from the study being conducted concerning a holistic approach to education in building 21st-century skills and developing learner-centered classrooms for students with special education needs (Shani & Herbel, 2016; Slade & Griffith,

2013). The development of holistic tenets used to develop educational and societal attributes within the 21st-century are essential for reforming current practices. Information collected deals with a needed paradigm shift in creating classrooms that focus on the building 21st-century skills within students and developing stronger learner-centered instruction (Palak & Walls, 2009; Slade & Griffith, 2013).

Additional support findings, which focused on a national and global perspective concerning the need for 21st-century skills, shows, teachers, and curriculum must meet the new standards of the 21st-century learner and can only be done by focusing on the whole person instead of just academic achievements (Palak & Walls, 2009; Shani & Herbel, 2016; Slade & Griffith, 2013). Districts must develop school, and district-wide policies include every student in developing the whole child within every environment. Developing necessary policies that focus on the whole student is imperative in developing a holistic approach to learning as the implemented policies guide districts and schools in providing resources, creating cultures, administrative support practices, build awareness to promote student development (Palak & Walls, 2009; Shani & Herbel, 2016; Slade & Griffith, 2013).

Student support systems are part of most K-12 schools across America which have shown to reduce negative outcomes and increase positive outcomes of student develop but most programs are often limited to small groups of students (Brion-Meisels, 2014; Slade & Griffith, 2013). Student support systems in the development of a holistic approach are challenged in identifying the most effective means of support across domains, periods, and context while determining each student's unique needs. In support, age is not some assumption educators can make concerning abilities and skills. Support needs to be developed in more ways than just from an academic standpoint (Brion-Meisels, 2014; Shani & Herbel, 2016).

Student support must be looked at from different perspective to include the constructs of the student because the voice of the student must part of the development of supports in a school-based setting (Brion-Meisels, 2014). School-based supports must meet the needs of the student from an academic view as well as a social view. This must also include allowing students to bring their outside world into the school and to have supports in place that will help each child face the world in which they live. Knowing the constructs of the student will help develop a strong and effective system of support that will address the whole student and help educators provide efficient learning experiences both academically and socially (Botha & Herselman, 2015; Brion-Meisels, 2014; Chao & Chou, 2017).

Student-Centered Support

Support of student-centered environment focuses on the various practices that best fit this type of learning environment because the methods used in the classrooms and the policies of the schools determine how effective those practices will be implemented for students with severe needs in an inclusive setting (Czerkawski, 2016; Kurth, Lyon, & Shogren, 2015; Palak, & Walls, 2009; Varier et al., 2017; Zou, Mickleborough, Ho, & Yip, 2015). Studies use data observation tool to pull out descriptive information of students with severe needs in an inclusive setting. Demographic, physical setting, and observation notes about activities were collected to determine if activities and practices provided support for students with severe special needs. Qualitative methods were used on the collected data to analyze the findings. The information was then categorized based on the three fields specified above, and categories of findings were coded together if the information correlated with each other (Kurth et al., 2015; Palak, & Walls, 2009; Varier et al., 2017).

Students with severe special needs received a lot of support from teachers, activities were appropriate, and teachers collaborated with one another to differentiate instruction to specific skills levels (Czerkowski, 2016; Kurth et al., 2015; Palak, & Walls, 2009; Varier et al., 2017; Zou, Mickleborough, Ho, & Yip, 2015). The students observed was conducted in multiple states, and the findings show an overall, high-level of support for students with severe special needs. The findings determined that seven broad themes existed from the data which were:

- Teaching arrangements
- Engagement demonstrated during activities
- General classroom supports
- Types of supports
- Type of work provided
- Interactions between students and class
- Choices provided to students

Above, the main areas posed by analyzing the data and are all areas of concern when developing a system of support for learner-centered environments (Czerkowski, 2016; Kurth et al., 2015; Palak, & Walls, 2009; Varier et al., 2017; Zou, Mickleborough, Ho, & Yip, 2015; Kurth et al., 2015).

Support from outside sources is just as important as support within a school as one study looked at parental involvement (Bierman, Okado, & Welsh, 2014; Fishman & Nickerson, 2015). Parent involvement is a key element to student learning and can enhance programs created to aid student growth by creating a line of communication from the school to the home (Bierman et al., 2015). In this study, Parent Involvement Surveys were mailed out to parents of special needs students in two separate school districts that included eight scales, a demographic

section of a specific disability, family, and gender (Bierman et al., 2015; Fishman & Nickerson, 2015). Also, a section of approximate socioeconomic status was provided to determine if income levels made a difference in involvement. Conditions for the participants were the parents had to be parents or guardians of current students with special needs who were currently receiving special education services at an elementary level. All results from the surveys were reviewed by three professionals with expertise in special education. Limitations of the study represented in the form of the generalizing of the findings and future research should include different areas of demographics such as urban and rural areas (Fishman & Nickerson, 2015; Kurth et al., 2015).

The results of the study suggested the parents who had stronger perceptions of their roles and self-efficacy will select activities to support (Kurth et al., 2015; Fishman & Nickerson, 2015); Kurth et al., 2015. The study also suggests that socioeconomic status (SES) does point to the motivation of parental involvement. This information, however, may cause some conflict in how teachers view parents and their willingness to be involved due to experiences and perceived misconceptions of parents of lower-socioeconomic status. What this study suggests is that teachers need to take a more active role in understanding the parents and the family dynamics of the student to determine the best possible ways to help motivate students and parents on their terms in participating in school-based activities (Bouck, 2014; Fishman & Nickerson, 2015).

A study researched to determine the involvement of parents in their child's education from being presents at meetings to follow through with parental suggestions by the school (Blatz, Elbaum, & Rodriguez, 2014; Fishman & Nickerson, 2015). This study used a grounded theory approach, and the data received from this study was coded using a constant comparison method developed by Glaser and colleagues. Data was taken from 96 parent participants who have students with special needs ranging from elementary school up to high school. Results were both

qualitative and quantitative in that numbers were used to categorize responses, and information received from the interviews help develop an understanding based on the numbers. The limitation of the study was that parents were all volunteers and not selected randomly which leaves the study open for further future research. Eight major themes arose from the data collected in this study (Blatz et al., 2014; Stephenson & Carter, 2015). The eight major themes presented are:

- Parent-school collaboration
- Parent involvement depends on student progress
- Parents initiate involvement
- Frequency, variety, and effectiveness of communication vary
- Transitions and schoolwork can be stressful
- Parent's level of trust in schools vary
- Parent's experience and knowledge affect views of schools
- The individual teacher and professional matters

The schools' attempts to develop parent involvement is received well by most parents, but also show that schools who try to build a stronger community (Blatz et al., 2014; Stephenson & Carter, 2015). Parents typically became involved when schools did not seek or tried to exclude their involvement. The study also showed that from the parent's perspective, the schools only became interested in involvement when parents took the initiative to get involved. When schools and parents work closely together, students can make tremendous progress, and the richness of the learning in the classroom is enhanced (Blatz et al., 2014; Stephenson & Carter, 2015).

Studies show the planning process and administrative support to determine if the quality of the planning, development, and support over a 4-year period affected the short and long-term

goals, instructional objectives, and teaching and monitoring procedures Stephenson & Carter, 2015). The purpose of this study was to look at how technology in the mainstream classroom effects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild intellectual disabilities.

The group of 12 students selected was chosen by teaching staff at the school the study was conducted, and the curriculum used was selected by the teachers based on those goals and objectives. The study showed that the improvements could represent a whole-school improvement. Additionally, the study did show that professional learning on the part of the teachers does improvement the quality of documentation for goals and objectives (Blatz et al., 2014; Stephenson & Carter, 2015).

Developing student programs improved with teacher training and if student development improved as teacher's documentation of programs improved (Blatz et al., 2014; Stephenson & Carter, 2015). Additionally, when administrative support was given, teacher documentation of student programs had proven to be more effective than other studies where administrative support of teacher training and student development was lacking. One area of weakness across the board in this study was the limited initial assessment information driving the quality of the program documentation. Over the 4-year period, the school did make good progress in documentation of programs for students and the study showed that sustaining strong program documentation and administrative support of program development is possible (Blatz et al., 2014; Stephenson & Carter, 2015).

Conclusion

The literature supports the need for 21st century learning skills, student-centered learning strategies, and needed support in training and develop of professional skills for teachers to implement innovative practices that engage students with mild intellectual disabilities in the learning process (Aslan & Reigeluth, 2013; Blatz et al, 2014; Bierman et al., 2014; Botham & Herselman, 2015; De La Paz, 2013; Duncan, 2010; Gurria, 2011; Salas-Picio, 2013; Stephenson & Carter, 2015; Trilling & Fadel, 2009). Research does not indicate exploration of developing student engagement in mainstream classrooms for students with mild intellectual disabilities (Bouck, 2017; Hollingshead et al., 2018; Schaddelee & McConnell, 2018).

Chapter III

Design and Methodology

Introduction

The purpose of this study was to look at how technology in the mainstream classroom affects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild intellectual disabilities. Individuals with mild intellectual disabilities have slower processing speeds in areas of conceptual development, social, and possibly, daily living skills with a typical IQ score range of 50 to 70 (National Center for Biotechnology Information, 2018). Students with mild intellectual disabilities can and do learn, often at a different pace than non-disabled peers (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010; National Center for Biotechnology Information, 2018). Students with mild intellectual disabilities may need to have instruction broken down into easier steps, modeling tasks that need to be done, modifications to how they show what they have learned, and alternative assignments and tasks (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010).

The world has gone through many changes in the past 100 years and education has not followed those changes closely. The changes have begun to affect what is needed within the classroom to prepare students to meet challenges of changes (Aslan & Reigeluth, 2013; Bouck, 2017; De La Paz, 2013; Duncan, 2010). Yet, many mainstream educational classrooms still hold onto the traditional practices that were developed for a different world (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010; Gurria, 2011; Trilling & Fadel, 2009). Many middle schools reported using innovation in a student-centered mainstream classroom to the best of

abilities, but resources are not equally distributed and often, mainstream classrooms do not have the necessary resources for developing student-centered learning (Duncan, 2010; Owen & Waxman, 1995). Even ten years ago, inequities in the use of technology depended on where the school was located (Duncan, 2010; Gurria, 2011; Owen & Waxman, 1995).

Student-centered learning involves a transforming of the classroom that allows students to develop and take responsibility for what is being learned (Bouck, 2017; Brown et al., 2008; Stephenson, & Carter, 2015). Teacher provides a highly structured lesson and from there, students develop ideas to expand on the information presented, develop activities, and build skills in problem-solving, critical thinking, collaboration, and creatively apply what they have learned. Student-centered learning develops a holistic approach to building the whole child and not just specific areas of academics within the child (Bouck, 2017; Brown et al., 2008; Stephenson, & Carter, 2015). In a student-centered environment, teachers use technology within lessons and activities to help students develop skills. Additionally, lessons include projects that require students to use what they have learned and apply that knowledge to the concepts of the instruction ((Bouck, 2014; Bouck 2017; Brown et al., 2008; Palak & Walls, 2009).

The transformational learning theory is a theory that provides information on active learning, student-centered learning, collaborative learning, experimental learning, and problem-based learning (Duncan, 2010; Nicholson, 2018; Slavich & Zimbardo, 2012). Transformational learning theory is designed to transform the student, the teacher, and the classroom. This transformation was developed to increase student engagement in the learning process by taking a different view on what learning by allowing the teacher to focus on student needs instead of lesson content. This will allow teachers to develop the lesson content around the needs of the students (Bouck 2017; Nicholson, 2018; Slavich & Zimbardo, 2012).

Existing research suggests, to make necessary changes to enable students to build engagement comes from multiple areas such as support, professional development, policies, and holistic approaches (Bouck, 2014; Bouck 2017; Palak & Walls, 2009; Salas-Picio, 2013; Trilling & Fadel, 2009). Most of the research that has been conducted to date involves the typically developing students and some students with disabilities, however, when discussing mild intellectual disabilities, whether mild to severe, research has not developed a strong presence. One area that lacks development of student-centered learning was found in students with mild intellectual disabilities (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010; Hollingshead, 2018). Students with mild intellectual disabilities will be expected to become engaged members of society and will be expected to have the same skills as non-disabled students. Holistic approaches to developing skills in students with disabilities have come a long way, but reform within special education services must be pursued to develop student-centered learning practices within the classroom (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010).

Special education research shows teachers need to learn to develop skills within students who have disabilities and that traditional practices will not provide those students with the same opportunities as their general education peers (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010). Taking a student-centered approach to developing skills in all students will help teacher develop those skills and will meet the needs of students with disabilities (Botha & Herselman, 2015; Chao & Chou, 2017; De La Paz, 2013; Salas-Pilco, 2013). Therefore, student-centered learning and innovation in the classroom is necessary for developing the same skills in students with mild intellectual disabilities as it is with none disable peers (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010). Research, however, does not discuss this approach

within the area of students with mild intellectual disabilities (Bouck, 2017; De La Paz, 2013; Duncan, 2010; Salas-Pilco, 2013). The purpose of this study is to look at how technology in the mainstream classroom effects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild intellectual disabilities.

Chapter III reviews the design and methodology of the research used in the process of accumulating and evaluating the data surrounding student-centered learning and engagement of students with mild intellectual disabilities in mainstream classrooms. The specific areas that have been discussed are (a) research questions, (b) research design, (c) participants, sites, (d) data collection, (e) analytical methods, (f) limitations, and (g) role of the researcher.

Research Questions

1. How does student-centered learning, implemented through the use of technology, impact the level of engagement for middle school students with mild intellectual disabilities being educated in the mainstream classroom?
2. What are the perceptions of teachers on how middle school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in the mainstream classroom?
3. As perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle school students with mild intellectual disabilities impact an equitable and inclusive learning environment?

4. What types of challenges do middle school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment?

Research Design

Two important aspects of research are the research questions and the research methodology. The research questions are developed to address a specific problem that must be answered. The methodology is the foundation of the research that will guide how those questions will be answered (Aspers & Ugo, 2019; Creswell, 2013; Smith et al., 2009). This study used a phenomenological research design to address the research questions stated previously.

Phenomenological qualitative research design is used in many different disciplines and aids in showing the what participants think and feel (Creswell, 2013; Smith et al., 2009). The phenomenological research design allows the participants to show perceptions and opinions on a situation or phenomena based on experiences of those participants and environments (Creswell, 2013; Flynn & Korcuska, 2018; Smith et al., 2009; Sutton & Austin, 2015). Additionally, the phenomenological research design also uses coding methods that are categorized to show possible themes that may arise (Creswell, 2013; Flynn & Korcuska, 2018).

The purpose for using the phenomenological design was because this research design can be applied to many different phenomena and because the research seeks an understanding from humans who have their own perspectives of situations and phenomena based on personal experiences (Giorgi, 2012; Flynn & Korcuska, 2018). In addition, some of the main characteristics that aided in guiding the choice of using phenomenology research for this study were:

- Seeks to understand how people experience a specific situation or phenomena.

- Small sample sizes of 10 or less participants.
- Semi-structured interview questions are open-ended so participants can share experiences.
- Data collection process is qualitative and allows to seek out themes or develop generalization concerning specific phenomena.

Participants

Purposeful sampling was used in this study to select specific participants based on a set criterion. Purposeful sampling is used in research when the research must be deliberate and specific in the selection of participants (Creswell, 2013; Palinkas et al., 2015). Additionally, snowball sampling was also used in this study. Snowball sampling is a process of participant recruitment of other individuals the participants may know who have experiences in the same situations or phenomena (Goodman, 1961). The selected participants had to meet the following criterion:

- Teacher participants must have been trained using student-centered learning strategies in the classroom.
- Teacher participants must currently work with students with mild intellectual disabilities.
- Teacher participants must be teaching in middle school educational locations.
- Teachers use innovative Web platforms with given lessons.
- Students have 1:1 use of devices in the classroom daily.
- Teacher participants provide highly structured lessons then students use 1:1 devices and innovative Web platforms for given classroom tasks.

Teacher participants have set up the classroom conducive for promoting student-centered learning. Teachers provided highly structured lessons and provided students the use of

technology (laptops) to work in collaboration with one another as they problem-solve in developing work that represents the knowledge gained from the lesson. Participants who met the criteria were contacted via email and invited to participate in the research study. Once an individual consented to participate, a member checking letter (Appendix D) and an Informed Consent Form (Appendix B) were sent via email. No collection of data was conducted until a signed Informed Consent Form was returned to the researcher.

Data Collection

The methodology chosen for this research was a phenomenological design. This allowed the researcher to review and understand the perceptions of the teachers based on individual experiences (Hoffding & Martiny, 2015; van Manen, 1990). Characteristics of the phenomenological design include epoche, intuition, and description (Moustakas, 1994; van Manen, 2014). Epoche is a strategy the researcher used to set aside personal views, judgements, and prejudice while conducting data collection. Intuition was another strategy used to become immersed in the study which allowed the researcher to be completely open to the experiences of the phenomena described by the participants (Aspers & Ugo, 2019; Moustakas, 1994; Rimando, 2015; van Manen, 2014).

Approval from Northwest Nazarene University Institutional Review Board (IRB) was received, the researcher began contacting potential participants at each of the four middle schools within the school district. Potential teacher participants were contacted via email and selected based on specific criterion as a participant for this study. Once selected as a participant, the researcher then scheduled a time to meet to conduct the semi-structured interview at the participants' perspective middle schools within the district. All interviews were conducted in the classrooms of participants and recorded.

The researcher then used semi-structured face-to-face interviews as a process of collecting the experiences of the participants to develop the phenomenological study. Phenomenological interviews allow the autonomous subjects (researcher and participants) to interact in a conversation that continued to develop as information is shared (Hoffding & Martiny, 2015; van Manen, 1990). Discursive knowledge is shared by the participants during the interview process. However, at the same time, tacit knowledge, the way discursive knowledge is shared through inflection, body language, and facial expressions, is gained (Hoffding & Martiny, 2015). This helped the research develop information that guided each of the following questions in the semi-structured interview process. The responses gained from the interviews allowed the researcher to then analyze the responses that could be generalized in pursuing responses to the specific research questions (Hoffding & Martiny, 2015; van Manen, 2014).

The interviews and data collection procedures were conducted over a one and a half-month period. The interviews targeted the lived experiences of the participants for the specific situations and phenomena to develop rich themes (Creswell, 2013; van Manen, 1990). Each interview was conducted within a 45-60-minute timeframe and consisted of semi-structured opened questions.

Interviews

A semi-structured face-to-face interview was conducted with each teacher participant. Interviews are effective in qualitative research and can add depth through understanding behaviors, preferences, attitudes, and opinions (Creswell, 2012, 2013; Hoffding & Martiny, 2015; Marshall & Rossman, 2015). Using the one-on-one semi-structured interview (Appendix A), participants could exhibit perceptions and beliefs about the level of engagement in students with mild intellectual disabilities in a student-centered mainstream classroom. The researcher

also took notes on the level of engagement with the participants, and when needed, asked the participants to elaborate on answers to enrich the answers further. All participants had signed informed consent before completing the semi-structured open-ended interviews. All participants were informed that responses would remain confidential. The responses were recorded by the researcher and transcribed, coded, and themes were created. Each participant was asked 12 questions during the interview.

Participants were free to decline to answer any question which resulted in them feeling uncomfortable. Participants also were instructed they could decline the interview without any development of negative consequences. The participant's classrooms were used for each interview to assist in making the participant more comfortable during the interview process. Interviews were recorded so they could be transcribed later. Individual interviews were stored electronically in a file and password protected. The electronic files will be destroyed within three years after the completion of the study in compliance with the Federal Wide Assurance Code (45 CFR 46.117).

District Consent

The district of the middle schools was contacted to gain permission to allow teachers to participate in the study. The administrators were contacted based on direction from the district and the study was explained to administrators, and all copies of all documents and information were provided. Once all requirements were met by researcher to the district, a site approval letter was generated and signed by the school district (Appendix B).

Data Analysis

For this phenomenological study, a qualitative data analysis was used. The collected data went through five stages of analysis: (1) transcribing from recorded interviews, (2) hand-

coding the data looking at developing patterns, (3) categorizing the developing patterns, (4) interpreting patterns and categories into generalized themes, (5) compiling themes into representative composite descriptions (Creswell, 2013; Moustakas, 1994; Saldana, 2016; Sutton & Austin, 2015). Qualitative data has no statistical test to build reliability and validity; Lincoln and Guba (1985) suggest the four criteria for trustworthiness in qualitative research are (1) credibility, (2) transferability, (3) dependability, and (4) confirmability (Creswell, 2013; Marshall & Rossman, 2016; Sutton & Austin, 2015). Responses of participants were not changed in any way and member checking emails were sent to ensure that all the data represented within the research was presented accurately.

Once the data was collected from the semi-structured open-ended interviews, the information went through the above qualitative process. The data collected was previously recorded during the interview process and hand transcribed into word documents. The next step was coding the information which consisted of inductive coding while seeking patterns that led to developing categories (Creswell, 2013; Marshall & Rossman, 2016; Moustakas, 1994; Saldana, 2016; Sutton & Austin, 2015; van Manen, 2014).

Generalized codes were used to determine common verbiage within the data collected. This is the stage at which the data is interpreted, categories are developed, and generalizations are created directed toward answering the questions developed within the research (Creswell, 2013; Marshall & Rossman, 2016). The final step in the process of organizing and coding the data for themes is reporting and discussing the results. Through coding for themes, researchers naturally find generalized information which can be used in the reporting process (Creswell, 2013; Sutton & Austin, 2015). The results were then written and discussed. The reporting process is the “story telling” of the entire paper and allows the research to bring to life the

literature, the participants, the methodology, and the discussion (Creswell, 2013; Sutton & Austin, 2015).

Validity and Reliability

Specific actions took place to ensure the validity and reliability of the findings of presented by the researcher. The semi-structured interview questions were submitted to a panel of three individuals for face validity. The questions of the interview were reviewed, and suggestions were used to make appropriate changes and to simplify the language. Follow-up questions were also developed to create clarity within the responses.

A content validity index was used for the researcher developed interview questions. The questions were reviewed by a seven-person expert panel and that panel sent back recommendations on alignment to the research questions. A few recommendations were received, and those changes were made and sent back to each panel member. Questions were then scored by the panel members passing with a 90%. A pilot semi-structured open-ended interview was used to develop an understanding of the process of conducting the interview as well as determine if any problems may exist within the protocol (Creswell, 2015; Marshall & Rossman, 2016). The pilot interviews provided awareness of the protocol's ability to answer the research questions. Additionally, they allowed the researcher to look at various ways to understand what was being communicated and how to clarify responses.

After the organization of the data and coding to discover themes was conducted, the researcher sent member checking emails to the participants. The member checking emails were used to allow the participants to review the data and the developed themes to ensure the legitimacy of the interpretation of the data and allow for possible additional data to be collected through participant verification (Birt et al., 2016).

Limitations

Limitations in research must be acknowledged so other will know how to address various areas in duplicating the research (Creswell, 2013; Marshall & Rossman, 2016). Limitations show information that the current study did not address and may allow for future potential studies. Limitations also exhibit any possible restrictions the study may have that the research does not have control over (Creswell, 2012; Price & Murnan, 2004). The main categories of limitations in research are internal and external validity or accurate result for the intent of the measures and accurate sample results for an entire population (Creswell, 2012; Price & Murnan, 2004).

The qualitative phase of the current study allows perceptions and beliefs as part of the data collection and are used to develop themes within the data creating possible bias. How individuals perceive situations or phenomena is subjective based on individual morals and beliefs (Price & Murnan, 2004; Sutton & Austin, 2015). Additionally, another limitation of this study was the sample sized used which cannot represent the entire population found in all middle schools. Only five participants responded and were selected for the study which for the purpose of qualitative research methods, is appropriate but the responses of the participants cannot be generalized to encompass the perceptions of all middle school teachers who work with students who have mild intellectual disabilities in the mainstream classroom.

The researcher also used purposeful and participants selected had to meet a specific criterion. Therefore, those participants may have had a predisposed stake in responding to the semi-structured open-ended interviews. Snowball sampling was also used to gain participants for this study. Participants who recruited other participants not formally selected at the beginning of the study may not have entirely met the specified criterion as a participant for this study. Additionally, the research is a special education teacher and while all steps were taken to

eliminate bias, subject bias is a possible limitation. Epoche was used which allowed the researcher to be aware of personal experiences and perceptions so those experiences and perceptions could be set aside during the data collection process and as well as in the data analysis.

Role of Researcher

While this study was being conducted, the researcher worked as a special education teacher who worked with students who have disabilities. Attempts to eliminate bias have been made, even though this researcher held beliefs that students with disabilities do not always receive the same education as non-disabled peers. Understanding participant beliefs, this researcher has made every attempt to express his beliefs to the all who participate in this study and semi-structure interview questions reviewed to ensure bias within each question was eliminated as much as possible to ensure reliability and validity of the data.

One way to do this was to use bracketing which is a way to reduce the influences of the researcher in the data collection and analysis of data procedures (Chan, Fung, & Chien, 2013; Hoffding & Martiny, 2015; Tufford & Newman, 2012). Bracketing allowed the research to be aware of personal experiences and perceptions of the research topic and to put those experiences and perceptions aside. This was conducted using a reflective log taken during the interview process that allowed the researcher to go back and understand how the participants felt during specific responses. Additionally, during the data collection and analysis sections of this study, the reflective log allowed the researcher to eliminate personal influences on the information and brought forth the personal experiences and beliefs of the participants (Chan, Fung, & Chien, 2013; Tufford & Newman, 2012). The researcher of this study allowed those perceptions and

experience to enhance his own understanding of the topic to develop a clear vision that was developed throughout the data collection and analysis process.

Chapter IV

Results

Introduction

Throughout the years, special education has provided services to students with disabilities and disorders using specific practices that focus on the development of missing skills (Botha & Herselman, 2015; Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015). Strategies focus on using teacher-centered practices using a direct instruction approach (Botha & Herselman, 2015; Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015). For students with mild intellectual disabilities, traditional practices are the focus for developing those missing academic and social skills (Botha & Herselman, 2015; Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015). Special education practices for teaching students with mild intellectual disabilities directly contradict the student-centered and innovative practices that are being used in the general education classrooms for developing student engagement (Bouck, 2017; Kinder et al., 2005; Palak & Walls, 2009; Trilling & Fadel, 2009).

Education has made some tremendous changes from the industrialized teacher-centered learning practices of traditional learning to the 21st -century practices incorporating student-centered learning and using technology to develop meaningful in many schools around the world (Aslan & Reigeluth, 2013; De La Paz, 2013; Nicholson, 2018; Peng & Chun Chun Chen, 2019; Shani & Hebel, 2016; Varier et al., 2017). Engagement in the learning process is essential in developing strong and positive student experiences (Choi & Rhee, 2014; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chen, 2019). Through engagement, students develop a deeper understanding of information and build a strong knowledge foundation that is easily

connected to situations in the lives of the students (Choi & Rhee, 2014; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chen, 2019).

In addition, special education services also have begun to incorporate some of the same practices to help students with disabilities access a higher level of learning that meets the needs of society (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Srivastava, 2017). Even though research shows technology and holistic practices to teaching have infiltrated the special education classroom, research is still sparse concerning what happens with students who have mild intellectual disabilities in the mainstream student-centered classroom (Brion-Meisels, 2014; Serdyukov, 2017; Slade & Griffith, 2013; Van Boxtel, 2017). With the lack of research concerning the engagement of students with mild intellectual disabilities in student-centered mainstream classrooms (Hollingshead et al., 2018; Kurth & Keegan, 2012; Schaddelee & McConnell, 2018), this study was created to show, how the use of technology in a student-centered mainstream classroom, the positive effect on the engagement of middle school students with mild intellectual disabilities.

Emergent Themes

The purpose of this study was to look at how technology in the mainstream classroom effects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild intellectual disabilities. The goal of this study was to show the experiences and perceptions of general education teachers working with students who have been diagnosed with mild intellectual disabilities in the mainstream classroom. Slavich and Zimbardo's (2012) Transformational Teaching Theory provided the framework for the impact of student-centered learning, through the use of technology, on middle

school students with mild intellectual disabilities. Chapter 4 will present the significant findings from the supported evidence obtained from the five participants selected for this study.

This study sought the impact of student-centered learning, through the use of technology, on middle school students with mild intellectual disabilities in the mainstream classroom. The researcher's goal was to provide insight into the experiences and perceptions of the five participants concerning the impact of technology and student-centered learning on the engagement of middle school students with mild intellectual disabilities. Five general education middle school teachers representing four different middle schools contributed to experiences and perceptions to this research study. Five teachers, purposefully selected, are a representation of the 54 general education middle school teachers who work with students who have mild intellectual disabilities in the mainstream classroom among the four different middle school. The results of those interviews are within this chapter and are in accordance with the following four questions:

1. How does student-centered learning, implemented through the use of technology, impact the level of engagement for middle school students with mild intellectual disabilities being educated in the mainstream classroom?
2. What are the perceptions of teachers on how middle school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in the mainstream classroom?
3. As perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle school students with mild intellectual disabilities impact an equitable and inclusive learning environment?

4. What types of challenges do middle school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment?

In Chapter 4, the themes that emerged were obtained through a semi-structured interview with each of the participants. Eleven open-ended interview questions were aligned to the four research questions that allowed the participants to express perceptions and opinions based on experiences in a student-centered mainstream classroom. Interview questions were created that allowed the participants to discuss perceptions on the use of technology in student-centered learning environments, on the engagement of students with mild intellectual disabilities within those environments, and how students with mild intellectual disabilities respond. The questions allowed the themes of increased engagement, production, and participation to develop within the responses.

In addition, participants were asked to share experiences in the classroom working with students who have mild intellectual disabilities. In particular, the resources used, how progress is measure progress, and the what tasks are assigned. Participants shared that students with mild intellectual disabilities were able to develop more confidence in their ability to learn as well as increased growth. Because students had more access to knowledge, the general belief of the participants was that technology and resources allowed students with mild intellectual disabilities to level the learning playing field with non-disabled peers. The questions that focused on the areas also supported the increase of participation, production, and engagement.

Another area the participants were exposed to within the semi-structured interviews was perceived challenges with technology and with students who have mild intellectual disabilities using the provided technology. Participants shared experiences of students dealing with

distractions because of the increased access to knowledge and how distractions caused challenges for students with mild intellectual disabilities. Additionally, participants discussed the need for extra support in helping students with mild intellectual disabilities access information and remain on-task. Extra support was not always necessary in each of the classrooms but emerged as an overall theme from the sets of questions.

The organization of the categories and themes used was research question alignment. Research question alignment aids in developing codes influenced by what is being asked in the research question (Saldana, 2016). Two main types of research question alignment are ontological and epistemological. In this study, an epistemological approach was beneficial exploring the perceptions of the participants looking at descriptive words and pattern coding, as well as, theming the data (Saldana, 2016). Table 1 shows two themes and categories per each research question.

Table 1

List of Themes and Categories

Research Questions	Themes	Categories
Question 1	Increased Engagement Active Participation	Response in class increased Increased learning Invested Increased student response Tasks more complete On-Task
Question 2	Confidence Growth	Better understanding Same projects as peers Increased creative Increased problem-solving Higher scores Decreased struggles
Question 3	Increased Production Levels Learning	Increased access to learning Decreased limitations Completed tasks are better quality Aids learning Involvement in Student-led activities
Question 4	Extra Support Distractions	Redirects Increased choices Increased support Student struggles Classroom management

Table 1. Themes and categories aligned with each research question

Each participant provided vital information from the individual interviews conducted that brought meaning to the responses based on each participants' experience working with students who have mild intellectual disabilities. One final question was presented that allowed each participant to add any additional opinions and beliefs concerning the use of technology building engagement for middle school students diagnosed with mild intellectual disabilities.

Research Participants

A range of participants were solicited from four different middle schools within one Idaho School district. The experiences of the participants also range from just a few years to over 20 years. All of the participants have had professional development using technology in the classroom and have had a minimum of one year of experience using technology (laptops, online, curriculum, web platforms) for lessons, create classroom assignments and projects, and assess learning. The teachers interviewed reported that all students at each of the schools have been provided with a laptop that is assigned to them by the school and students take those home with them every night.

Two of the five teachers both taught at the same school. One taught social studies and the other taught English. At each of the other three schools, one teacher taught social studies, one taught computer applications, and the last one taught science. Each of the participants were selected because they currently teach students with mild intellectual disabilities attending mainstream classes and uses 1:1 device in the classroom for all assignments, curriculum, web platforms, and assessments. In addition, each participant had over one year of experience using technology in the classroom and is currently using technology with students who have been diagnosed with mild intellectual disabilities.

All five participants have had previous experience working with students who have mild intellectual disabilities. In the past, when technology was introduced into the classroom, all the participants shared many of the same concerns with technology and the progression of learning. Concerns were deeper for students with mild intellectual disabilities because they believed those students would struggle more than non-disabled peers. As they became more experienced using technology in the classroom to deliver instruction and present various tasks to

gauge learning, they understood more ways technology was able to help learners of all types within the classes they taught. Table 2 provides range of gender, years teaching, grade level, and subject.

Content validity index was used for the researcher developed interview questions. The questions were reviewed by a seven-person expert panel and that panel sent back recommendations on alignment to the research questions. After a few recommendations, changes were made and sent back to each panel member. Questions were then scored by the panel members passing with a 90%. A pilot semi-structured open-ended interview was used to develop an understanding of the process of conducting the interview as well as determine if any problems may exist within the protocol (Creswell, 2015; Marshall & Rossman, 2016). This process aided in ensuring the interview questions were valid and would produce reliable information.

Table 2

Participant Profile Information

Participant Pseudonym	Gender	Teaching Years	Grade Level	Subject
Jenny	Female	20-25	7 th	Social Studies
Becca	Female	15-20	8 th	Social Studies
Betty	Female	10-15	7 th – 8 th	Computer Applications
John	Male	0-5	7 th	Science
Dee	Female	10-15	7 th	English

Table 2. Experience, subjects, and grade levels of the participants.

Jenny, Becca, Betty, and Dee make up 80% of the participants who have over 10 years of experience in the classroom. The teachers have seen the transformation from teacher-centered teaching to student-centered learning. John, on the other hand, had been teaching less than five

years and his training was with student-centered strategies. Each of the participants currently use student-centered practices in the classroom and spend time developing student-centered practices through, training, collaboration, and researching new resources to help students succeed. In addition, 90% of the classroom resources the students used in the learning process were digital and accessed through 1:1 device the district has provided them. All of the participants have students use devices to complete assignments from highly structured lessons and connect the presented information to specific life situations and projects designed to allow the students in classroom to develop creative ways to show what they have learned from the lessons.

As part of a phenomenological study, participants shared knowledge, feelings, and views from professional and personal experiences (Moustakas, 1994). The emergent themes and categories shown in Table 1 are derived from the experiences and perceptions of the five teacher participants during the face-to-face semi-structured interviews. Each of the themes and categories were aligned with the four research questions which will be described in detail throughout this chapter.

Results for Research Question One: Impact on the Level of Engagement

The preferred strategy for teaching students with mild intellectual disabilities is a direct-instruction approach in a teacher-centered learning environment to help those students focus on building specific skill (Botha & Herselman, 2015; Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015). Research does support the use of practices in developing skills for students with mild intellectual disabilities (Donne & Lin, 2013; Kinder et al., 2005; Palak & Walls, 2009; Shani & Hebel, 2016). However, research also supports the development of a holistic approach in developing all students, regardless of ability (Botha & Herselman, 2015; Brown, Welsh, Hill, &

Cipko, 2008; Hollingshead, Williamson, & Carnahan, 2018; Salas-Pilco, 2013; Slade & Griffith, 2013; Tan, 2015).

The first research question of this study asked: How does student-centered learning, implemented through the use of technology, impact the level of engagement for middle school students with mild intellectual disabilities being educated in the mainstream classroom?

To answer the first question, participants were asked to share the structure of the student-centered learning environment as well as perceptions on the use of technology, participation, engagement, and how students with mild intellectual disabilities respond in the classroom. Each participant used 1:1 device with students as well as multiple digital resources in the process of presenting lessons and assigning tasks. Four of the five participants expressed, students with mild disabilities were more engaged in the learning process. This was seen through increased participation, production, completed tasks, and learning within classrooms. Eighty percent of the participants shared, students with mild intellectual disabilities were more on task during assigned tasks and had increased responses during class discussions which showed they were more invested. The categories discussed show, students with mild intellectual disabilities had increased engagement and participation within student-centered learning environments and the learning process. Each interview question provided 15 to 20 different codes which were aligned to each of the research questions to provide a viable answer. The codes produced by each of the interview questions provided six main categories that fit within two overall themes that aided on answering the first research question, how does student-centered learning, implemented through the use of technology, impact the level of engagement for middle school students with mild intellectual disabilities being educated in the mainstream classroom?

Table 3

Themes for Research Question One

Themes and Categories	Frequency of Description
Increased Engagement Increased Learning Invested On-Task	5 of 5 participants 4 of 5 participants 5 of 5 participants
Active Participation Increased student responses Increased production More completed tasks	4 of 5 participants 5 of 5 participants 4 of 5 participants

Increased production and completed tasks. All five participants expressed that students were more engaged in the classroom as a result of the student-entered environments each created. The use of 1:1 device allowed the students to be more productive in the learning process. In addition, 80% of the participants expressed that students with mild intellectual disabilities were completing more of the tasks given to the students in the classroom. The participants were asked how they measure the level of engagement of students with mild intellectual disabilities as part of the interview process. Dee stated:

You know, I honestly don't know that I've ever really stepped back to measure that we just kind of push forward and I guess maybe my biggest measure is work completion. I

know if they have completed their work, then that means that they're staying engaged with what we're doing and they're following instructions.

Three of the other participants also shared work completion being one of the ways they measure engagement from students with mild intellectual disabilities in classrooms. The participants all reported that the students with mild intellectual disabilities began the year not producing as much as they were currently producing. Dee and Betty both explained that assignments were more complete and many of the students went beyond the expectations of the project or assignment. Jenny Becca, and John expressed similar scenarios in the classrooms. Betty stated:

The little things that I'm looking for are, can they do what was asked, what is the quality, how much did they do, and other small things showing me that they are following along.

It might not look the same which is fine, but they are be able to produce work.

When technology (laptops) was introduced into the classroom, the students with mild intellectual disabilities felt like more a part of the class and want to do the same things non-disabled peers were doing because many of them have had some experience with technology outside of school.

Increased learning. As projects and assignments are given in the classroom, all five of the participants expressed that they have seen increased learning from students with mild intellectual disabilities. When asked about the learning of their students, 5 out of 5 shared that students with disabilities are learning more in the classroom. Jenny explained, "They're doing the work themselves and then also thinking about what they are learning." The students want to learn and want to show what they can do in the classroom. Becca also stated something similar, "They're doing the work themselves and then also thinking about what they are learning." Like many students, students with mild intellectual disabilities take time in developing skills. Betty shared, "You'll notice the students at the beginning of the year will be really slow but towards

the end of the semester they were more confident in their abilities and the amount of information they are learning increases.” This is shown in the projects they create by using information that was presented in instruction within those projects and how assignments are more completed. The students with mild intellectual disabilities are meeting more of the objective presented with each lesson in the work they are producing and are more engaged in the process learning through the creation of their projects and the level of work. John shared:

My students with mild intellectual disabilities are given many of the same problems but they aren't just regurgitating information, they actually have to apply the knowledge they gained and are able to synthesize all of that and spit out a product that that makes sense.

In all five classrooms, students with mild intellectual disabilities are increasing their learning because they have more access to information that allows them to apply their knowledge to the information and concepts that are being presented.

Invested. The interview questions aligned with research question one provides information that suggested students with mild intellectual disabilities were invested in the learning process. All five of the teacher participants explain in one way or another that students become more invested in the learning process when they feel they are empowered. Part of this empowerment comes from building relationships with the students and inspiring those students to go beyond what they believe they can do. When the classroom is student-centered, the students take more control over the learning in the classroom helping them to become invested in learning. Jenny has over 20 years of experience and has seen the transformation of the teacher in the classroom. Jenny explained, “Teachers need to move away from monopolizing the learning

in the classroom and develop the minds of the students by allowing them to take more control and become invested in the learning process.”

Increased Student Responses. Within the five classrooms of the participants, each teacher has created a student-centered environment. 4 of the 5 participants expressed students with mild intellectual disabilities began the year more reserved but as the first quarter progressed, they became more comfortable in the student-centered environment. Students with mild intellectual disabilities engaged in more conversations with non-disabled peers and they participated more in classroom conversations. Dee stated, “During class discussions students with mild intellectual disabilities are actively involved in the discussion regardless of ability, so I can see these kids participating in conversation.” When the participants moved about the room and asked questions about the work, the students with mild intellectual disabilities were able to explain what they were doing and how the information from the lessons was being applied in student work. John said, “It always amazes me how much information I get back from students during class discussions no matter what abilities they have.”

On-Task. Eighty percent of the participants reported that students with mild intellectual disabilities were more on-task in the student-centered classroom. All five also expressed with the implementation of technology using laptops in the classroom, the students want to do more because they feel like they can do more. Jenny stated, “My students are more on-task with technology than they use to be without technology.” Students log in when they come into class, they go where they have been directed to go, and they work on assignments and projects with less redirects. Each of the participants also believe classroom management is easier because, not only the students with mild intellectual disabilities, but all students are more engaged in the lessons, tasks, projects, and group work. Becca explains, “I have less issues with classroom

management in a student-centered classroom because my students collaborate with one another which takes away the need to just talk when they are supposed to be working.”

Research Question Two: Perceptions of Response

As technology becomes an important staple for developing student-centered learning environments, the perceptions of many educators do not follow this belief (Palak & Walls, 2009; Shani & Hebel, 2016; Trilling & Fadel, 2009). Current research shows that many teachers have the perception that technology in the classroom has no influence on the learning process and that technology can also be used just as effectively in a teacher-centered learning environment (Palak & Walls, 2009; Shani & Hebel, 2016; Trilling & Fadel, 2009). Some teachers believe that technology and student-centered pedagogy does not replace good teaching practices (Palak & Walls, 2009; Shani & Hebel, 2016; Trilling & Fadel, 2009).

Therefore, many students with special needs to include mild intellectual disabilities do not always receive the same education as non-disabled peers (Bouck, 2017; Botha & Herselman, 2015; De La Paz, 2013; Salas-Pilco, 2013). Some teachers believe that the integration of technology is critical in developing the skills students need to become engaged members of society (Botha & Herselman, 2015; Brown et al., 2008). While some teachers struggle with the integration of technology in mainstream classrooms, but research does show that many teachers understand the role technology plays in developing skills with students who have special learning needs (Blândul & Bradea, 2016; Brown et al., 2008; Serdyukov, 2017; Stephenson & Carter, 2015).

This led to the development of the second research question of this study which asked: What are the perceptions of teachers on how middle school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in

the mainstream classroom? To answer the second question, the participants of this study were asked to share perceptions about how students with mild intellectual disabilities respond to technology, assigned tasks, participation, and activities. Each participant shared experiences they have had in the classroom and explained what they see daily concerning students with mild intellectual disabilities. The overall perceptions of the participants were reduced to six main categories and two overarching themes. The themes support the second research question, what are the perceptions of teachers on how middle school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in the mainstream classroom?

Table 4

Themes for Research Question Two

Themes and Categories	Frequency of Description
Growth Better Understanding Higher Score Decreased Struggles	 5 of 5 participants 3 of 5 participants 4 of 5 participants
Confidence Same Projects as Peers Increased Creativity Increased Problem Solving	 5 of 5 participants 4 of 5 participants 4 of 5 participants

Better Understanding. Collectively, the participants had numerous years of experience working with students who have mild intellectual disabilities in the mainstream classroom. Each one explained that with teacher-centered learning, students struggled more with understanding the lessons, the curriculum, and the tasks given but with the implementation of technology (laptops, online curriculum, web resources), students are able to access more of the information and better show what they have learned from the presented information. This is also shown in how often students respond to questions presented in class discussions and increased correct responses on formative and summative assessments.

Technology and digital resources in the classroom help students with mild intellectual disabilities access more information and understand what they need to do with assignments. In

speaking of one student, Jenny stated, “He has now Reached the point where he's able to look at the information on his device and he's able to process it himself and then he's answering questions.” 5 out of 5 participants had similar responses concerning the use of technology increasing the understanding of students with mild intellectual disabilities in the classroom.

Same Projects as Peers. In each of the classrooms of the participants, all students are given the same information and same assignments. Betty explained, “Very rarely have I had students with mild intellectual disabilities do something different from peers.” There are, however, some modifications made to the information, instructional levels, and reading levels. In addition, all the participants did explain that some modifications to the assignments are made that will allow the students with mild intellectual disabilities to show mastery of the information and standards within the lessons. For example, John explained that if he requires a task of defining vocabulary, most of his students will be expected to provide vocabulary definitions of 10 words and then use those words in a sentence. For his students with mild intellectual disabilities, he asks for all 10 but will accept a minimum of 5 words. Becca explains, “On assignments requiring a summary of 500 words, she will allow students with mild intellectual disabilities to turn in a summary of 200 words or more.” All participants exclaimed students with mild intellectual disabilities will produce more than what they have too because they have learned more of the information and want to show what they have learned.

Increased Creativity. 4 out of the 5 participants expressed pleasure in how creative technology has allowed students to become in presenting given tasks. “In the past, before all the technology and student-centered learning practices, many of my students with mild intellectual disabilities just produced a portion of the work I asked them to produce,” Jenny explained. Now, she states, “The same students are going beyond the minimum and are creative in showing what

they learned because they have more access to being creative.” Eighty Percent% of the participants all expressed the same perceptions concerning the creative nature of the students with mild intellectual disabilities. Assignments that are produced using technology has more information and students find more exciting ways to present that information. Betty said, “I want the students to be creative because I get more engagement out of them than just answering questions.” Being more creative has allowed the students to show more of what they have learned, as John explained, “The students find creative ways to show me what they have learned from the lessons.”

Increased Problem Solving. The student-centered classrooms of the participants use online curriculum and many different digital resources in the process of learning. All assignments are created on the laptops that have been provided for the students by the school district. Once lessons have been presented and the 80% of the participants feel the students are ready to move forward to the next phase, students are given tasks to complete. 4 of the 5 participants expressed that students with mild intellectual disabilities have more resources and while some guidance, at times, is necessary, many of them work through the lesson activities and find resources on their own to help show what they have learned. John said, “I can give these students information and I see the thought process they went through to create something even if they require a little assistance.” He also explained, “The difference in engagement is definitely the students are far more engaged when they have a problem that they're trying to solve versus just being fed information.” This shows that 80% of the participants in this study have seen increased problem-solving skills from students with mild intellectual disabilities.

Higher Scores. John explained, “Student-centered learning has helped students that typically struggle with information at our “Critical Juncture” assessments and finals achieve Cs

or higher.” Using technology has changed access to learning and has helped develop a stronger student-centered classroom according to the participants in this study. This increased access to learning has allowed the middle school students with mild intellectual disabilities to increase their scores on classroom activities and assessments. Betty’s perception was, “Students with mild intellectual disabilities have increased confidence and growth because they believe they can do this just like everyone else.” 60% of the participants explained the final products of students with mild intellectual disabilities has shown tremendous increased knowledge and all seem to be more confident in what they produce. The other 40% discuss increased scores but not quite the same level as the other three participants but do seem more confident with lessons and assignments.

Decreased Struggles. Along with more confidence in the classroom comes decreased struggles for students with mild intellectual disabilities because they can do more. 4 of the 5 participants expressed students with mild intellectual disabilities do struggle less with some of the lessons and activities within the student-centered classroom. Jenny stated, “I think it gives these students more confidence by being able to use technology to do things in the classroom.” Betty stated, “I really can't express enough how much technology completely leveled some of the playing field for the kids because a lot of them there develop confidence issues.” In addition, those 4 participants expressed that students with mild intellectual disabilities do still have some struggles but overall, they are seeing less struggles with accessing curriculum and completing assigned tasks. In part, this is due to the experiences with technology students with mild intellectual disabilities had in the past and because they enjoy using technology. In addition, as students with mild intellectual disabilities were exposed to technology and digital resources within the student-centered classrooms, 3 of the 5 participants expressed those students were able

to access more information easier and they were able to access more information as the semester continued.

Research Question Three: Equitable and Inclusive Learning

Research shows that developing a holistic approach to educating students is essential in developing the skills students need to be successful (Shani & Herbel, 2016; Slade & Griffith, 2013). Developing the proper student support system has shown to aid in the development of skills in all students, to include those with special needs (Brion-Meisels, 2014; Slade & Griffith, 2013). Such student support systems, such as student-centered learning and holistic approaches to teaching when implemented helps develop skills students with severe disabilities never had access to previously (Czerkawski, 2016; Kurth, Lyon, & Shogren, 2015; Palak & Walls, 2009; Varier et al., 2017; Zou, Mickleborough, Ho, & Yip, 2015).

Study show that many teachers who have high expectations for learning in the classroom, had lower expectations for students with disabilities (Johnson, 2013; Klehm, 2014; Palak & Walls, 2009). Students with mild intellectual disabilities are often the target of decreased expectations because of limited abilities. For this reason, policies have been the focus of some studies showing the development of programs that allow students with special needs to access the same education as non-disabled peers is necessary (Klehm, 2014; Palak & Walls, 2009; Van Boxtel, 2017). The purpose of research question three was to understand the perceptions of the participants concerning equitable and inclusive learning. This led to the development of research question three which is: As perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle school students with mild intellectual disabilities impact an equitable and inclusive learning environment? To develop responses that would answer this question, participants were asked to

share what activities they use in the classroom, methods of measuring engagement, how technology is used, and resources. The responses provided by the participants allowed the researcher to see inside the classroom of the participants. From the responses provided, two main themes and five categories began to emerge and assist in answering, as perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle school students with mild intellectual disabilities impact an equitable and inclusive learning environment?

Table 5

Themes for Research Question Three

Themes and Categories	Frequency of Description
Increased Production Completed Tasks Student-led Activities	4 of 5 participants 3 of 5 participants
Levels Learning Increased Access to Learning Decreased Limitation Aids Learning	5 of 5 participants 4 of 5 participants 4 of 5 participants

Increased Access to Learning. Typically, students with mild intellectual disabilities have less access to the general education curriculum because their disability hinders grade level access (Bouck, 2017). The perceptions of the teacher participants were very clear in their satisfaction of technology creating more access to the curriculum used in the classroom. Betty explained, “In my class, all students use the general curriculum the same way.” All the

participants discussed students with mild intellectual disabilities do the same assignments because they have increased access to resources. “All my students work on the same assignments with the same resources, just that, the end project may be a little different,” explained Becca. Technology and the resources connected with technology has made learning in the classroom easier. Betty stated, “For my kids with intellectual disabilities, it is almost easier now with the technology then it was without just simply because the greater number of resources that it offers me to offer them.” Jenny also stated, “They're doing the work themselves and then also thinking about what they are learning.” Collectively, the participants all felt technology has helped students with mild intellectual disabilities increase learning opportunities.

Decreased Limitations. In the classrooms of the participants, students with mild intellectual disabilities have more access to resources which allows them to be more creative in the learning process. Betty explains, “If I allow the students to be creative, I get more engagement out of them than just answering questions.” Technology allows students to access more information without the limitations of a book. Technology and different resources give students with mild intellectual disabilities more choices that allows them to show what they have learned in different ways that textbooks and handouts ever could. Dee states, “It gives them access to those resources a lot more than hauling home a 50-pound textbook, you know.” Most curriculums purchased for mainstream classrooms only present information in very specific ways that must be differentiated. Most curriculum has only one reading level which limits the students’ ability to access the information, but Jenny explains, “When the reading level is too high, technology lets me use resources where I am able to lower the reading level.” 80% of the participants expressed similar theories concerning technology, access, and resources reducing the limitations on students with mild intellectual disabilities.

Completed Tasks. Each participant used multiple resources that help students complete assigned tasks in the classroom. In the classroom, technology has allowed students to access more information and with that, students with mild intellectual disabilities are able to produce more than they would have with just a worksheet based on the lesson. Becca said, “When I give them a choice, my students will choose using technology and digital platforms over listening to a lecture and filling out a prepared sheet because they like technology and it is more fun.” Technology allows students with mild intellectual disabilities to access more information and to have more choices in how they use that information. Jenny will often assign writing projects with her social studies lessons and she assigns a minimum word count of 500 words. She does, however, modify this slightly for her students with mild intellectual disabilities down to 250 words. She has found, with technology and multiple resources that help her students with mild intellectual disabilities, the same students are consistently producing more than what she expected. Across the board, each participant responded similarly concerning increased work and a higher completion of assignments.

Aids Learning. Each of the participants use the resources paid by the school district in the classroom. In addition, each of the participants has many other resources that have searched out that allow students to have more choices in the completion of tasks assigned. Betty showed the researcher a list of over 30 resources she has found to aid her students in lesson topics and in completing work. In fact, each participant interviewed, uses multiple resources to help students engage in learning as well as aiding them in the learning process. Dee explained that giving students with mild intellectual disabilities access to more technology and digital resources allows them have more information to help them learn.” Becca also stated, “For my kids with mild intellectual disabilities, they find learning easier now with technology than it was without simply

because they have more resources.” Each participant that participated in this study has and uses multiple resources that allows students with mild intellectual disabilities to access information they could not have accessed without someone helping them. Two of the five participants also explained that some of the resources being used is helpful because reading levels are higher than what most of students with mild intellectual disabilities reading abilities. Specific resources discussed allow them to modify the reading levels to help those students access information. Of course, not all of them will provide this help but when they do not, they just seek out other resources that provides similar information allowing students access to what the rest of the class is learning.

Student-Led Activities. In the data collection phase of this study, the researcher purposefully chose participants that work with student who have mild intellectual disabilities within a student-centered classroom. Each participant in this study has created such an environment through incorporating the use of technology (1:1 laptop devices) and multiple digital resources. The technological tools are used in the delivery of lesson information as well as the creation of student-led activities. “Student-led activities allows each student, with or without disabilities to apply information to a problem and to think critically about how the information connects to the situation or problem,” John stated. When asked about the participation of the students who have mild intellectual disabilities, the participants all perceive the students as being more active in the learning process as well as an increased production in student performance with each activity. Becca explained, “Devices offers these students a lot more than what paper and pencil does, and I have noticed that some of these students tend to go where their strengths are.” “When I allow my students to be creative, I get more engagement out of them,” Betty

expressed. She also stated, “I want my students with mild intellectual disabilities to feel like they are part of the class and by doing so, I see more engagement within the activities.”

In terms of increased production and leveling of learning, each participant perceives the use of technology and digital resources provides students with mild intellectual disabilities more opportunities to engage in the learning process. With this, increased access to resources and technology, the students have less limitations on learning because this aids the learning process. Students complete more of the tasks assigned and produce a higher level of completion that what may be expected. Additionally, when activities are student-led, they have more control over what is being learned and can use the information they have gained in more critical and creative ways.

Research Question Four: Challenges Confronted

Education always has challenges that can hinder the process of learning as well as facilitate the development of new processes. Students with mild intellectual disabilities present many challenges with instruction in the classroom as well as meeting educational needs based on skill and ability levels (Botha & Herselman, 2015; Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015; Johnson, 2013). Because of their disabilities, students with mild intellectual disabilities face challenges that make learning difficult (Nicholson, 2018; Slavich & Zimbardo, 2012).

Traditional practices limit the information that is being presented so students with mild intellectual disabilities can focus on specific skills (Botha & Herselman, 2015; Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015). While this is effective in developing specific skills, it also limits the opportunities of the learning. Increasing choices and providing a holistic approach to learning opens access to developing skills students did not have previously. This, however, can also prove to be a challenge in the classroom when teachers are not prepared. Supporting the

learning environment is essential in developing skills. Teacher preparation and support systems as crucial for developing skills in student-centered learning environments developed (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Brown et al., 2008; Chao & Chou, 2017; Kurth & Keegan, 2012; Stephenson & Carter, 2015).

To understand everything that is happening with students who have mild intellectual disabilities within student-centered mainstream classroom, all aspects of the process must be addressed. Therefore, one must also understand what the five teachers who participated in this study face using technology in students centered classrooms. This led to the development of question four which states: What types of challenges do middle school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment? To understand all aspects of developing a student-centered learning environment using technology, each participant was asked specific questions that focused on challenges they face in the classroom. Each participant was asked what challenges they see with the implementation of technology in the classroom. In addition, participants were questioned about the challenges they have experience with students who have mild intellectual disabilities in student-centered environment. Finally, questions on how the challenges that may impact engagement. After coding the interviews and compiling the information five categories stood out creating two main themes that directly connect to the fourth research question, What types of challenges do middle school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment?

Table 6

Themes for Research Question Four

Themes and Categories	Frequency of Description
Extra Support Increased Support Student Struggle	 5 of 5 participants 4 of 5 participants
Distractions Increased Choices Redirects Classroom Management	 4 of 5 participants 4 of 5 participants 5 of 5 participants

Redirects. Whether technology is present or not, students with mild intellectual disabilities do have some limitations. The perceived experiences of all the participants is that students need to be redirected to remain focused and on-task. Students who have mid intellectual disabilities often require a little more redirection. Betty expressed, “One of the main reasons is because these students have so many different choices of resources and that can be distracting.” In fact, each of the participants expressed this same concern. Each participant, as stated earlier, use multiple resources in student-centered classrooms to aid all students in the learning process. Multiple resources can be distracting to some students who have never had the ability to access as much information. Therefore, it is necessary to redirect students with mild intellectual disabilities from time-to-time in helping them focus on specific tasks at hand. Dee stated, “My students with mild intellectual disabilities do need more redirection than most. But I also know that may be part of their disability.” Betty explained, “The devices and resources offer more

choices so this can be distracting for some students.” +0% of the participants in this study shared similar experiences in working with students who have mild intellectual disabilities in the student-centered classroom.

Increased Choices. Each participant was asked about challenges they face with the implementation of technology in a student-centered environment and all have similar responses. Jenny said, “There are so many different choices for the students and this can be distracting.” Sometimes, the amount of choices that are being provided in the participants’ student-centered classrooms can be an issue because when more choices are offered, students can become more off task. When multiple resources are available, the challenge becomes keeping students on-task on projects. Two of the five participants completely let the students choose whatever resource they will use to complete classroom projects. Three of the participants, however, have begun to limit projects to just a few different resources to help students remain more focused on specific tasks. Becca says, “If I give students more than just a few steps and too many resources, this is when I see them being more off task.” Johns explained, “When multiple resources or choices are provided at the beginning, students become over-stimulated.” Overall, throughout the interview process with the participants, when increased choices are given, each teacher participant also sees increased distractions.

Increased Support. Another category of challenges that arose from the interviews was dealt with supporting students with mild intellectual disabilities. Each participant expressed that students with mild intellectual disabilities all use the same resources and the same curriculum (with modifications) that all non-disabled peers use but will often need more support. Technology and digital resources also allow the participants to provide more information that will support the students in ways that would have taken extra staff to do in the past. Jenny stated,

“Many of my resources allows me to adjust reading levels that will help the students access more information.” Many of the resources have different levels that can be modified specifically to the needs of the students. Many of the students with mild intellectual disabilities do not have a one-on-one Paraprofessional to help them in the general education classrooms which makes it more difficult for the teacher in providing the necessary support for each of the students. John and Betty, however, use a lot of peer tutoring in the classroom where students with mild intellectual disabilities are paired with more responsible non-disabled peers. “I pair them with someone that knows what they are doing so together they can step their way through the process,” John explained. Each of the teachers used pair support of some kind and expressed that having a student-centered learning environment helps in the process of providing necessary support because students are working in collaboration with one another more than a teacher-centered environment where students are in collaboration with just the teacher.

Student Struggle. Another area of challenge that came from the interviews was that many of the students with mild intellectual disabilities pose different struggles within the student-centered learning environment. Most people struggle with new things in the beginning and the participants explained during the process of the interviews, some of students with mild intellectual disabilities also struggled with the technology provided as well as some of the resources. Eighty Percent of the participants explained that every student struggle with something but they saw more struggles from students with mild intellectual disabilities when new things are being introduced. Some of the most common struggles reported by each of the participants include:

- Reading levels are too high
- Student frustration with new resources

- Refocus time
- Lack of appropriate resources
- Takes longer to get started
- More re-teaching
- Distracted by too many choices
- Following instructions

In a student-centered classroom, the participants explained students do present struggles, but the struggles presented were more severe at the beginning of the year. As the semester has progressed, the students with mild intellectual disabilities had a tremendous decrease in the struggles they presented. Betty explained, “So I actually have less off-task issues with the computers and the resources than I did at first roll out.” Jenny said, “That might struggle and realizing that they might struggle but that they're not stupid that they can do the work, it just might take them a little bit longer.

Classroom Management. In addition to seeing a decrease in the struggles of students with mild intellectual disabilities, each participant sees behaviors that make classroom management easier for them. Becca states, “When the class is calm, everybody is focused and more engaged.” The participants believe classroom management is easier with technology because students are more engaged in the learning process. Jenny discussed, “I don't really have a trouble keeping kids on task on the devices.” All the participants have developed student-centered learning environments to help students develop and grow academically. Because the students lead the learning and the participants guide the learning, they all deal with fewer behaviors and less off-task behaviors from not only students with mild intellectual disabilities,

but all the students. Betty stated, “The trick is just keeping the class under control which helps with engagement.”

Participant Statements

Shown in Table 7 are statements made by each of the participants during the interview process. The statements allow a voice to the beliefs and perceptions of the teacher participants who work with middle school students who have mild intellectual disabilities. Participant voices were derived from personal experiences which brings depth to this study. In addition, the researcher did not place any of the statements in a specific order or align them with any of the research question. The statements allow the reader to understand what Jenny, Becca, Betty, John, and Dee want people to know when working with students who have mild intellectual disabilities.

Table 7

Participant Statements

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- I really can't express enough how much I think that technology so completely leveled some of the playing field for the kids a lot of them there because they develop confidence issues.
 - Well, the first thought that came to me is I think relationships with students are still an important part of that.
 - I think it's overall a huge benefit because of how many doors it opens in other ways for them to learn.
 - It can be a distraction but yeah, overall a huge benefit.
 - I guess I'd like to just add for anybody in general education is to not assume they can't do it.
-

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- I think it has been a great addition to the toolbox.
 - I Really struggled growing up reading it was there I like to read but it was hard for me at first and so that was you know, just sharing that with them and but devices have been awesome for my students.
 - So, for all of them, as much of a distraction as it brings, I still think that it has benefited more than it has distracted.
 - They become lifelong learners, learning those skills that will help them throughout life.
 - They get it and for whatever reason their brains can connect and process those things.
 - I expect them to be doing the same thing on their device that all my other students are doing.
 - So, my one kiddo in sixth period he loves it when we're using the device.
 - It has raised his engagement a lot and he is answering questions, now.
 - In fact, the students pretty much on pace with everything that we do.
 - I allow the students to be creative because I get more engagement out of them than just answering questions.
 - They don't get a specialized assignment.
 - I don't want them to feel like will they get their work and you get yours.
 - They have a better understanding that they're just kids just like everybody else and they want to learn, and they want to do things just like everybody else does too.
 - At the beginning of everything all the students have a hard time.
 - I mean, I don't treat them any different than I would any other student if I've got all my students working on one assignment.
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- I don't really have a trouble keeping kids on task on their devices.
 - It creates that sort of sense of normalcy for and which really sort of helps their confidence and I can do this, and I can finish it.
 - They use technology (devices) and resources pretty much the exact same way my gen kids do.
-

Summary of Results

Research was conducted on the experiences and perceptions of middle school teachers who work with students who have mild intellectual disabilities. The phenomenological research theory directed the interview process. Through the data analysis, eight themes surfaced:

1) Increased Engagement; 2) Active Participation; 3) Confidence; 4) Growth; 5) Increased Production; 6) Levels Learning; 7) Extra Support; 8) Distractions. Each theme that arose from the data analysis was based on the voices of Jenny, Becca, Betty, John, and Dee from daily encounters with students who have mild intellectual disabilities in mainstream student-centered classrooms.

Chapter V

Discussion

Introduction

As education moves away from the standard teacher-centered classroom to a student-centered learning environment, many schools still lack the necessary resources and instructional experience to effectively engage students with mild intellectual disabilities in the learning process (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Srivastava, 2017). Many schools, however, have begun to integrate technology in the classroom opening more resources in the learning environment (Brown et al., 2008; Duncan, 2010; Bouck, 2014, 2017; Salas-Pico, 2013). Many studies across multiple areas of academics still show that direct instructional practices for students with special needs is the most effective way to fill the gaps in learning (Botham & Herselman, 2015; Bouck, 2014, 2017; Kinder et al., 2005). Teacher, however, must understand the needs of each student in the classroom to effectively aid in developing best practices, not just what is thought to be best practices (Botham & Herselman, 2015; De La Paz, 2013; Palak & Walls, 2009; Trilling & Fadel, 2009).

A long-time standard for teaching students with mild intellectual disabilities has been limited to small group settings using teacher-centered environment focused on specific skill deficits of students with mild intellectual disabilities (Botha & Herselman, 2015; Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015). As society moves into the 21st century instruction for students with mild intellectual disabilities has not made the same progression (Dignath-van Ewijk & Van Der Werf, 2012; Fox, 2015; Johnson, 2013). Research continues to explain the need to develop 21st century skills in all students to create a holistic approach in engaging and educating students with the skills they will need to be successful within the 21st century (Botha &

Herselman, 2015; Brown, Welsh, Hill, & Cipko, 2008; Hollingshead, Williamson, & Carnahan, 2018; Salas-Pilco, 2013; Slade & Griffith, 2013; Tan, 2015).

Research covers many different angles of student engagement, technology integration, and developing needed skills for students in the 21st century, however, a tremendous deficiency exists in the same research for students with mild intellectual disabilities within the mainstream classroom. Some of the research does discuss students with disabilities but not specific those students who have been diagnosed with mild intellectual disabilities.

The experiences and perceptions of Jenny, Becca, Betty, John, and Dee were voiced through a semi-structured face-to-face interview using open-ended questions to allow the participants to share personal opinions and beliefs. The final chapter of this study will explore the major findings derived from the collected data and a conclusion based on those findings. Included, will be further research recommendations and suggestions for professional practice when dealing with students who have mild intellectual disabilities in the mainstream classroom.

Summary of Results

The purpose of this study is to look at how technology in the mainstream classroom effects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild intellectual disabilities. A phenomenological qualitative research design was used to examine the experiences of five middle school teachers who all teach in a mainstream classroom. The theoretical framework used in the study was Slavich and Zimbardo's (2012) Transformational Teaching Theory. This theoretical framework aided in guiding the progression of this study that concentrated on the impact of student-centered learning, through the use of technology, on the level of engagement in

middle school students with mild intellectual disabilities. The investigation was guided by the following research questions:

1. How does student-centered learning, implemented through the use of technology, impact the level of engagement for middle school students with mild intellectual disabilities being educated in the mainstream classroom?
2. What are the perceptions of teachers on how middle school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in the mainstream classroom?
3. As perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle school students with mild intellectual disabilities impact an equitable and inclusive learning environment?
4. What types of challenges do middle school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment?

Many classrooms still do not provide the necessary skills students with mild intellectual disabilities need to function in 21st century society (Selanikyo et al., 2017; Shani & Hebel, 2015; Sharma & Sokal, 2016). While research does suggest student-centered learning and technology integration develops necessary skills as a holistic approach century (Botha & Herselman, 2015; Brown, Welsh, Hill, & Cipko, 2008; Hollingshead, Williamson, & Carnahan, 2018; Salas-Pilco, 2013; Slade & Griffith, 2013; Tan, 2015), the literature review conducted shows a lack of information concerning student-centered learning and technology integration with students who have mild intellectual disabilities in mainstream classrooms. Because this study focused on the experiences and perceptions of the middle school educators in student-centered classrooms who

teach students who have been diagnosed with mild intellectual disabilities, a phenomenological qualitative research design was implemented. The results of this type of research allowed the voices of the participants to provide rich detailed information influenced by the lived experiences and developed perceptions of those participants.

A semi-structured, face-to-face interview protocol was implemented to collect the narratives of the five middle school educators within a single school district. Purposeful sampling was used in the selection process of the five participants. This strategy sought out specific educators who were currently working with students who have been diagnosed with mild intellectual disability in a student-centered mainstream classroom using technology (1:1 devices) and other digital resources. The coding process allowed the researcher to build specific categories and use researcher question alignment (Saldana, 2016) to develop themes. The eight themes that arose are 1) Increased Engagement, 2) Active Participation, 3) Confidence, 4) Growth, 5) Increased Production, 6) Levels Learning, 7) Extra Support, 8) Distractions.

Increased Engagement. Engagement is the goal of each of the five participants. As each responded to questions concerning engagement, all reported students with mild intellectual disabilities showed more engagement in the classroom using technology and digital resources. Research suggests that the implementation of technology in the classroom for students with special needs has a positive influence on engagement (Chao & Chou, 2017; De La Paz, 2013; Johnson, 2017).

Active Participation. The five participants expressed an increase in the participation within each of the classroom. Participants described with the implementation of technology in the student-centered classroom, students with mild intellectual disabilities were actively participating in the lessons and activities. In student-centered learning environments students are

more engaged in the learning process as they are actively involved (Carini et al., 2006; Hummel & Randler, 2012; Oleson & Hora, 2014; Peng & Chun Chun Chen, 2019; Schaddelee & McConnell, 2018).

Confidence. Students with mild intellectual disabilities need and seek a sense of belonging in the classroom to aid in developing confidence in the learning process (Haydon, MacSuga-Gage, Simonsen, & Hawkins, 2012; Nagro, Hooks, Fraser, & Cornelius, 2018; Wang, Bergin, & Bergin, 2014). In the student-centered classrooms of the five participants, a shared practice is ensuring the students feel like they belong. They also believe when students with mild intellectual disabilities feel as though they belong and they are part of the class, confidence increases in the learning process because they are able to do what peers are doing and not something completely different.

Growth. Each classroom of the participants in this study is set up as a student-centered learning environment using 1:1 devices and digital resources. This type of environment develops skills in students where standard teacher-centered environment does not develop. The student-centered approach aids teachers in developing growth of necessary skills in students with mild intellectual disabilities just as in non-disabled students (Botha & Herselman, 2015; Chao & Chou, 2017; De La Paz, 2013; Salas-Pilco, 2013). Therefore, student-centered learning environments are necessary for build those necessary skills (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010).

Increased Production. Jenny, Becca, Betty, John, and Dee all reported increase production out of the students with mild intellectual disabilities. The student-centered learning environment has helped students with mild disabilities become more engaged in the process of learning which has increased the production of completed tasks within the classroom. When

students become more engaged in the learning process, the depth of learning increases and allows students to show more of what they have learned (Bouck, 2017; Carini et al., 2006; Hollingshead et al., 2018).

Levels Learning. Students with mild intellectual disabilities engaged in the learning process have lower levels of higher levels or achievement (Ayçiçek, & Yanpar Yelken, 2018; Hollingshead et al., 2018; Wang et al., 2014). The participants all reported that technology and digital resources have leveled learning in the classroom for students with mild intellectual disabilities. The participants also discussed the ease of modifying much of the curriculum to accommodate the needs of the students with mild intellectual disabilities making access to information easier. The students have more access to information they never use to have and are using that information as seen through the higher levels of achievement.

Extra Support. Even though achievement, production, and engagement is increased in the classrooms of the participants, all explain that students with mild intellectual disabilities do require additional support to aid in increases. Student support systems reduce struggles in the classroom and help address a holistic approach in academic development (Botha & Herselman, 2015; Brion-Meisels, 2014; Chao & Chou, 2017). Each participant reports that some level of support is needed for those students with mild intellectual disabilities in the beginning but as the years moves on, the needed support does decrease in some areas.

Distractions. The integration of technology increases the amount of information the participants can implement into a lesson. They explain that with technology and digital resources, there are more options for the students but this can also cause more distractions for some of the students with mild intellectual disabilities. The distractions come from the multiple choices the students have in addition to having access to technology but not always knowing how

to adapt to more access to information. Students with mild intellectual disabilities typically exhibit impairments with adaptive skills which can cause difficulties in academic settings (National Center for Biotechnology Information, 2018).

The Transformational Teaching Theory focuses on the need for teachers in developing strong skills that will help students face and overcome those challenges as they begin to take charge of learning. Transformational teaching allows students to transform by increasing the students' (a) academic self-efficiency, (b) self-regulatory capabilities, (c) self-directed learning skills, learning-related attitudes, values, and beliefs, and (d) to use the knowledge they gain meaningfully within their lives (Slavich & Zimbardo, 2012). The participants in this study all have created learning environments that are student-centered and have implemented technology into daily use for students. This has created a learning environment for the students, to include those with mild intellectual disabilities, to build skills within the four elements listed above within the Transformational Teaching Theory.

Research Question #1: How does student-centered learning, implemented through the use of technology, impact the level of engagement for middle-school students with mild intellectual disabilities being educated in the mainstream classroom?

The data collected in this study from five middle school teachers was significant in showing increased levels of engagement in middle school students with mild intellectual disabilities. Each of the participants who contributed to this study have designed a student-centered learning environment and use technology (1:1 devices) daily as well as other digital resources. The curriculum used in each lesson, whether the subject was computer applications, science, English, or social studies, is a digital curriculum and the additional resources used in the activities are also digital. Student-centered environments and the implementation of technology

increases participation of students with disabilities and aids teacher in keeping those students engaged in the learning process (Botha & Herselman, 2015; Chao & Chou, 2017; De La Paz, 2013; Johnson, 2017; Salas-Pilco, 2013). 100% of the participants in this study shared observations that the students with mild intellectual disabilities were more engaged in each lesson, and actively participated in discussions and activities than they are when not using technology. The students with mild intellectual disabilities started the year slow but as they adapted to the student-centered learning environment and the technology, they became more engaged in learning, increasing the production of classroom tasks, and have shown increased growth. Becca explained, “Actually, at the beginning of everything, all the students have a hard time. So, it's not uncommon for students with mild intellectual disabilities to take a little longer to get used to it. But, eventually, they actually know the program's just as well.” Each teacher interviewed, expressed similar findings with students who have mild intellectual disabilities expressing that as they continue to move forward in class, the students all became use to what they needed to do and where they needed to go on the devices to access information and complete assigned tasks.

In talking about one student with mild intellectual disabilities in her social studies class, Jenny stated,

So, I was really worried about him in particular, the student that I'm thinking about, understanding the information and of me being able to pair him with several different students throughout the year. He has now reached the point where he's able to look at the information on his device and he's able to process it himself and then he's answering questions. He's raising his hand. He's offering

suggestions. He's participating in the groups and I don't see him just sitting back anymore. He's actually participating.

In discussing projects with technology and digital resources used to build student-centered learning and how students with mild intellectual disabilities respond, Betty conveyed what she observes:

They actually thrive in some of the technology platforms in some of those places because again, it levels the playing field. It takes out a lot of the tiny stuff you have to do that you're not good at, you know, like if penmanship is not good. I can't do it. If I do a poster it's going to look terrible, but I can go online and create a phenomenal infographic and use artwork that's available to me there and so I think sometimes they almost enjoy it and thrive better.

This was a common theme among 100% of the middle school teachers that participated in this study. Each one expressed how students with special needs and those with mild intellectual disabilities were more engaged in the learning process and participated more in class overall because they were using technology (1:1 devices) and had more access to information allowing them to be more engaged.

Research Question #2: What are the perceptions of teachers on how middle-school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in the mainstream classroom?

One of the most important parts of teaching is how teachers perceive student learning, lesson progression, and instructional practices to make determinations of what is most effective for every student in the classroom (Botha & Herselman, 2015; Brown et al., 2008; Stephenson & Carter, 2015). Studies show, when teacher implement interventions and strong techniques into

teaching students with special needs, those students have more access to information and can learn on a deeper level (Blândul & Bradea, 2016; Brown et al., 2008; Serdyukov, 2017). Within the student-centered classrooms of the five middle school teacher participants, such things as technology (1:1 devices) and digital resources are being used to develop lessons and provide more information for students to access and use in the completion of given tasks. As perceived by the participants, students with mild intellectual disabilities respond well to the implementation of technology and digital resources in the classroom. Becca explained, “They have a better understanding that they're just kids just like everybody else and they want to learn, and they want to do things just like everybody else.”

Of course, having more access to things can also be somewhat of a distraction as Betty explains, “One of their problems is being distractible.” However, she continues by saying, “But once you move past that I think it's a really beneficial tool for them because with nine times out of ten.” In fact, each participant did express that the increased access to information was a bit overwhelming in the beginning. As the students progressed, however, they became more acclimated to the learning environment and the distractions of technology and increased access to information decreased. Having access to more information for any student allows that student to deepen his or her learning concerning a topic. While each of the participants did express the increased number of tools to be a distraction at the beginning, 80% of the participants also exclaimed how helpful technology and digital resources have been in developing learning for students with mild intellectual disabilities. For example, John says:

For my kids with intellectual disabilities, it is almost easier now with the technology then it was without just simply because the greater number of resources that it offers me

to offer them and that, I think it helps them a lot more than I think I could do all by myself.

Research has shown that students will adapt and learn to regulate learning when teachers understand what is needed to develop a strong learning environment and provide the necessary tools for students to learn (Dignath-van Ewijk & Van Der Werf, 2012).

Research Question #3: As perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle-school students with mild intellectual disabilities impact an equitable and inclusive learning environment?

With the shift from traditional standards that have driven education for so many years to the digital age that now demands more from our students, teachers must develop learning systems that focus on the whole child regardless of ability and skill level (Aslan & Reigeluth, 2013; Botha & Herselman, 2015; Chao & Chou, 2017; Salas-Pilco, 2013; Shani & Hebel, 2016). As society continues to grow with technology, many mainstream classrooms have implemented technology and digital resources use into the daily practices yet, more often than not, students with mild intellectual disabilities do not have access to that technology or digital resources (De La Paz, 2013; Bouck, 2017; Salis-Pilco, 2013). Those practices, however, are a commonplace within the student-centered classrooms of each middle school teacher who participated in this study. Each participant, purposefully selected for student-centered practices and daily implementation of technology (1:1 devices), were asked to share experiences and opinions toward the learning of students with mild intellectual disabilities as compared to those student's non-disabled peers. In Jenny's social studies classroom, she shared concerns about a student with the reading level of the material and the fact they do a lot of reading. She says:

It's hard because we have a high reading level. I mean, we do lots of reading, we do lots of analyzing, and we do lots of notetaking. So, I was really worried about him, the student that I'm thinking about, understanding the information. He has now reached the point where he's able to look at the information on his device and he's able to process it himself and then he's answering questions. He's raising his hand, he's offering suggestions, and he's participating in the groups. I don't see him just sitting back anymore, he's actually participating.

Betty teaches computer applications and she has grasped the understanding that her students with mild intellectual disabilities want to learn as much as non-disabled peers are learning. She stated, "They want to learn just like everybody else, and in fact, they probably want to learn more than everybody else and technology allows them access to learning." She also explained that in her class, students receive the same work regardless of a disability or not. She wants every student in her class to feel as though they belong.

In John's science class, his perceptions on an equitable and inclusive learning environment are, "I think it's overall a huge benefit because of how many doors it opens in other ways for them to learn." John did say that, "Having numerous doors to access learning can be a distraction but understanding that and helping them focus on specific information really allows technology to be a huge benefit." Like John, Becca also believes technology to be a huge benefit in leveling the learning field for her students with mild intellectual disabilities. She states, "I really can't express enough how much I think that technology so completely leveled some of the playing field for these kids." In our discussion, she perceived that most kids with mild intellectual disabilities have confidence issues because they are pulled out of class or have extra support that peers do not receive. In addition, so many students with mild intellectual disabilities

have struggle for so long that they just want to give up. However, implementing technology allows them to access more and learn more. She goes on to say, “I think technology has increased confidence and levels learning, I think it does a lot for kids in the classroom, but I think it really does a lot for them, almost more.” In Dee’s English classroom, she feels that technology and digital resources do provide more learning opportunities for her students with mild intellectual disabilities even though it can be a distraction as well. However, in working through whatever distractions may arises, Dee explained:

I feel like our kids nowadays, because they've had so much tech at home, there's not as many problem with that and I feel like those students with the mild intellectual disabilities, that's kind of their jam, they get it, and for whatever reason their brains can connect and process those things.

Regardless of the subjects taught, each participant expressed technology and other digital resources have helped level learning for students with mild intellectual disabilities and increased production of classroom tasks.

Research Question #4: What types of challenges do middle-school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment?

Over the discussion of the previous three research questions, the participants have reported 1) Increased Engagement, 2) Active Participation, 3) Confidence, 4) Growth, 5) Increased Production, 6) Levels Learning. The purpose of this study is to look at how technology in the mainstream classroom effects the level of engagement of middle school students with mild intellectual disabilities in the mainstream classroom and how teachers of those classrooms perceive the effect of technology on the level of engagement in middle school students with mild

intellectual disabilities. In addition, this study must also address possible challenges middle school teachers may face in building effective and engaging learning environment for students with mild intellectual disabilities. Throughout the face-to-face interviews with five mainstream middle school teachers, two main themes arose concerning challenges they face in student-centered learning classrooms as they implement technology to build engagement in the learning process for students with mild intellectual disabilities.

Each participant observed the two main challenges they face in student-centered classrooms for students with mild intellectual disabilities included the need for extra support and some increased distractions. Jenny expressed that sometimes it is difficult for her in class because she will need to break some steps down more or will need to come back to instruct students with mild intellectual disabilities. She explained:

I have no help, and nobody comes in to help me. I do not have an Aid or anything like that comes in. They might need a little bit more explanation so I might need me to sit down next to them and physically show them.

Even though extra support is needed at times and that technology can be a distraction, she explains, "...I still think that it has benefited more than it has distracted." Betty found that distractions were more prevalent in her classroom over extra support. She does express that redirecting students is part of extra support but more in line with being off task. She said, "The trick is just keeping the class under control that helps with engagement." She also stated:

I'll redirect them to stay focused on what they need to do in that hall and handle the situation. I don't know what may have distracted them, but I try turn it around and make them think that they came up with the idea, you know stuff like that. So that's really

challenging because you don't always know the best way to do it until you pick anyway, and sometimes it's wrong.

During the interviews, many of the participants expressed that sometimes technology can be a distraction for many students but even more so in students with mild intellectual disabilities because they have so many options to choose from in the process of learning and completing tasks. When discussing students with mild intellectual disabilities in his science classroom, John stated, “One of their problems is being distractible, then that tends to be amplified somewhat at times so it takes a lot more if you're not on the right tab or website” During the interview with Betty, she also explained, “They are easily distracted because the device offers them a lot more than paper and pencil does, but providing extra support will help them stay on task.” Each of the teachers interviewed expressed some level of extra support needed as well as students with mild intellectual disabilities having more distractions. In the final interview, extra support was explained by Dee as, “I think the biggest one and I think the hardest challenge is just them needing us to come to them to explain steps and information multiple times.” She also stated:

Yeah, and I think that's the hardest one and there are two of us in the classroom together. But when you have five or six or seven with mild intellectual disabilities, it takes time to get to each student to make sure they understand where to go and what to do.

Students with mild intellectual disabilities will need additional support in the classroom to develop the skills they will build when technology and digital resources are implemented in student-centered classrooms (Aslan & Reigeluth, 2013; Bouck, 2014; De La Paz, 2013; Bouck, 2017; Salis-Pilco, 2013). Schools, classrooms, educational policies, and curriculum must support

the needs of students with mild intellectual disabilities in developing the skills needed to become successful and engaged members of society (Bouck, 2017; Botha & Herselman, 2015; Brown et al., 2008; Chao & Chou, 2017; Kurth & Keegan, 2012).

The Transformational Teaching Theory aligns with research questions one through three within this study. Contemporary methods in the classroom includes collaborative learning, problem-solving, and higher order of thinking (Duncan, 2010; Nicholson, 2018; Slavich & Zimbardo, 2012). The Transformational Teaching Theory looks at learning in the classroom as active learning, student-centered learning, collaborative learning, experimental learning, and problem-based learning (Slavich & Zimbardo, 2012). The elements just discussed follow the elements the participants have created in each of the learning environments. The results of this study showed increased growth, confidence, engagement, production participation, and learning. By creating environments that follow the Transformational Teaching Theory allowed the participants to share experiences about students with mild intellectual disabilities that produced the results of this study. Building the skills discussed in students with mild intellectual disabilities, the participants painted a picture that shows these skills are important a do in fact aid in results discussed that answered the first three research questions.

Final Participant Perceptions

In this study, as part of the interview process, each participant was asks to share any additional thoughts they would like to share concerning building engagement in middle school students with mild intellectual disabilities in student-centered learning environments using technology. This discussion took place at the very end of the interview process to allow the participants to express any feelings they had concerning the overall topic of the effects of student-centered learning environments, through the use of technology, on the engagement of

middle school students with mild intellectual disabilities. The following are the responses of each participant.

Jenny: I think it has been a great addition to the toolbox. Tools that I can use with all of my students, but it is definitely benefited my students with disability. Some of them just flourish when they're using devices, especially when they have to type something, or they have to read something. That's just amazing that you're able to do that. And so and I always share with them that I was a struggling reader growing up and so to have this would have been awesome for me when I was younger. The devices have been awesome for my students. So, for all of them, as much of a distraction as it brings, I still think that it has benefited more than it has distracted.

Becca: I guess I'd like to just add for anybody in general education is to not assume they can't do it. Because a lot of the times they can it's just finding the right person who wants to show them how to do it. Because it's not that they can't they just don't know how or they've never been shown before. So just assuming right off the bat they can't handle it is the worst way to go. For me, if you're going to give a student with mild intellectual disabilities access to technology, show him or her how to use it before you discount it and just say, it's not going to work showing different programs or platforms. I mean there's so many things and a lot of them will hit the same standards so just give them a chance.

Betty: I really can't express enough how much I think that technology so completely leveled some of the playing field for the kids a lot of them there because they develop confidence issues. They're pulled out of classes. Everybody knows that they're getting extra help and this or there it creates a confidence piece for them. So, they doubt their

own ability and then they come into my classroom. Well, I can't do it. Yes, you can because the technology now lets them do that with just like everyone else and there's no question. I think that just building that confidence that they can do it that allows them to tackle some of the more difficult intellectual processes that they need to tackle that they previously wouldn't have done. I can offer them all of the availabilities of technology to help them and they've struggled for so long they've given up or they just don't even want to try anymore. To me, that's frustrating because I'm like, yes, you can. I think technology has increased confidence and levels learning, I think it does a lot for kids in the classroom, but I think it really does a lot for them almost more.

John: I think it's overall a huge benefit because of how many doors it opens in other ways for them to learn. But with all those other doors come distractions that you have to home in on and get them to put the blinders on and stay focused on that one task. It can be a distraction but yeah, overall a huge benefit.

Dee: Well, the first thought that came to me is I think relationships with students are still an important part of that. I think students need to know that you care and that you're going to bust them on stuff because you love them because you care about them and you want them to truly. I think my most engaging moments come when someone has made a poor decision and we must rally and talk about that poor decision and get everybody back on task. Collaboration spaces are not my favorite way to do this. I feel like sometimes you know; they can be one step ahead and they know what they're doing and how things work. They're very smart.

All five participants discussed the abilities of students with mild intellectual disabilities.

The students have tremendous abilities for learning and with the right tools, they can be taught

how to learn. The integration of technology in a student-centered learning environment helps students with mild intellectual disabilities engage in the learning process and allows the students access to the information they need to develop skills in that process. On final thought from Betty sums up the ability of middle school students with mild intellectual disabilities. She said, “So, I was doing some reflecting when we introduced the devices on a trial basis three years ago and my biggest challenge was keeping kids on task, but this year I'm looking at students and think, we're working.”

Conclusion

The student-centered learning environment allows students to build such skills as critical thinking, problem-solving, collaboration, and creativity (Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010, Slavich & Zimbardo, 2012). In addition, the student-centered learning environment sees a shift from direct instruction provided by the classroom teacher to facilitator of the learning process (Ackley, Russell, & Kellerer, 2018; Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010, Slavich & Zimbardo, 2012). Each of the participants involved in this study are middle school teachers who foster student-centered learning strategies in each of their classrooms. Additionally, the teachers implement the use of technology (1:1) devices and multiple digital resources in the process of developing the student-centered learning environments. Transformation Teaching is a theory that focuses on student-centered, active, collaborative, and experimental learning environments (Slavich & Zimbardo, 2012). This theory was selected to help guide the protocol used to collect the data for this study.

Through face-to-face semi-structured interviews, each participant shared lived experiences, perceptions, and beliefs. From the five participants, eight themes arose dealing with student engagement, technology, student-centered classrooms, and challenges. All five

participants all had strong feelings about teaching students who have mild intellectual disabilities and doing so in an environment that was the same for non-disabled peers. While the teachers would make necessary modifications from time-to-time, they believed that lessons, assignments, and expectations should remain as close to the same as possible to help develop the same skills in students with mild intellectual disabilities as are being developed in non-disabled students.

Academic success is measured in numerous techniques, but the most effective way is through the engagement of students in the learning process (Hollingshead et al., 2018; Lei et al., 2018; Schaddelee & McConnell, 2018). All five participants expressed increased levels student engagement in the student-centered learning environment using technology. Also reported were increased production, growth, participation, and confidence. Research shows, students who are engaged in the learning process build necessary skills like problem-solving, critical thinking, collaboration, and applying knowledge to real-life problems (Hollingshead et al., 2018; Kurth & Keegan, 2012; Schaddelee & McConnell, 2018). Like the participants in this study, schools need to be prepared to developing educational systems that include students with mild intellectual disabilities in building all the same skills non-disabled students are afforded (Aslan & Reigeluth, 2013; Bouck, 2014; De La Paz, 2013; Bouck, 2017; Salis-Pilco, 2013).

In addition, the participants were also asked to discuss any challenges they may have experienced concerning mild intellectually disabled students in student-centered learning environments and the implementation of technology in those environments. Each participant did express they do have challenges with students who have mild intellectual disabilities. The first of two main challenges they face is the need for extra support. Some students take longer to learn some of the information and the need to go back over information is necessary. Additionally, 40% of the participants explained not having someone in the room to provide extra support for

students with mild intellectual disabilities slows down the learning process. In addition to extra support, distractions were the second main theme that came from the interview process. All the participants explained the increased access to information through technology can sometimes be distracting for students. Distractions also slow down learning, but each discussed the need to develop clear expectations. Strong classroom management will curb the distractions and students with mild intellectual disabilities will thrive Bouck, 2017; Botha & Herselman, 2015; Brown et al., 2008; Chao & Chou, 2017; Kurth & Keegan, 2012).

Reflection

As a special education teacher, this researcher could see how general education teachers view the learning process for middle school students with mild intellectual disabilities in the mainstream classroom. The semi-structured face-to-face interviews provided a true passion for developing the minds of all students. The participants of this study were asked a final question that allowed them to share whatever they wanted to about student-centered learning using technology with students who have mild intellectual disabilities. In the participant's final statements, they shared their own beliefs and experiences that helped this researcher see an extreme need in changing traditional classrooms to student-centered learning environments.

Recommendations for Further Research

The phenomenological qualitative study, through the experience, beliefs, and observations of five middle school teachers, sought to determine if student-centered classrooms, through the use of technology, affected the level of middle school students with mild intellectual disabilities. The development of students with mild intellectual disabilities is not a major topic in research when discussing student-centered learning environment as well as technology. Most of the research concerning student-centered learning environments that discusses students with

disabilities is very limited, however, makes no mention of students with mild intellectual disabilities. Therefore, the need for research discussing middle school students with mild intellectual disabilities in student-centered learning environment needs scholarly expansion. Within this study, the participants expressed, even with the need for additional supports, increased engagement, growth, increased participation, and more confidence from students with mild intellectual disabilities because learning has been leveled between students with mild intellectual disabilities and non-disabled peers.

Technology is a tremendous part of many different areas of life as the world continues further into the 21st century. In the classroom, technology has become a tool that many teachers use to develop the learning of students. In the four middle schools where the five participants work, technology is an everyday element of the learning environment with a 1:1 ratio of student to device. The teachers interviewed use devices daily for curriculum instruction, assignments, and projects. Plenty of research exists discussing technology, in the form of laptops and digital resources as strategies for developing a holistic approach in teaching students. While holistic strategies cover students of all learning abilities, however, very little research specifically addresses students with learning disabilities and more specifically, students with mild intellectual disabilities are not discussed even if they are considered part of the holistic approach. Research needs to be specific in addressing students with mild intellectual disabilities concerning the use of technology to develop skills and abilities in in student-centered mainstream classrooms.

The participants of this study all agreed that technology and student-centered learning are essential parts of engaging students with mild intellectual disabilities in the classroom. In this study, each participant expressed increased engagement from students with mild intellectual disabilities as well as increased participation. Research explains that direct and specifically

designed instruction are the best strategies for developing learning in students with disabilities. Research does not specifically discuss increasing engagement of students with mild intellectual disabilities through the use of technology. This is an area that further research would benefit the development of students with mild intellectual disabilities.

An important area for future research is understanding the perspective of engagement from the point of view of the student. This research follows the perspectives of the general education teacher on the level of engagement of middle school students with mild intellectual disabilities when technology is implemented in a student-centered learning environment. This limits the understanding of engagement because it did not consider the perspective of the students. Students would add a full understanding of engagement across the board.

Implications for Professional Practice

The findings of this study provide implications for all mainstream classrooms who serve students with mild intellectual disabilities. The five middle school teachers discussed the student-centered classroom, the use of technology, and other digital resources in the process of teaching students with mild intellectual disabilities in the mainstream classroom. While the instruction of the students can be difficult, the perceptions and opinions of the participants aided in developing strong themes that express a need for developing best practices for not only middle school students with mild intellectual disabilities, but all students under this category. Current practices suggest that students with mild intellectual disabilities be taught specific foundational learning skills through strategies like direct instruction, specifically designed instruction, and small group settings. The five participants of this study have shown students with mild intellectual disabilities can learn in the mainstream just as non-disabled peers do when provided the tools necessary for developing engagement, growth, participation, and production.

In addition, teacher preparation programs do not provide the necessary development of pre-services teachers faced with instructing students who have mild intellectual disabilities when included in mainstream classrooms. The participants of this study developed the necessary skills, outside of teacher preparation programs, to assist students with mild intellectual disabilities in developing learning skills through the use of technology and digital resources. In line with the Transformational Teaching Theory, the participants have developed learning environments that promote individual and collective self-efficacy, challenges students, help student realize strengths, and aid in creating strong goals for students to achieve (Ackley, Russell, & Kellerer, 2018; Aslan & Reigeluth, 2013; De La Paz, 2013; Duncan, 2010, Slavich & Zimbardo, 2012). Each participant uses multiple resources to help level the learning environment for students with mild intellectual disabilities. Even when proper levels of support are not present, the resources have provided the participants with the ability to aid students in learning process. This allows the students access to enough information that creates engagement in learning the objectives set forth within mainstream learning environments.

The potential benefit from the findings of this study help in developing best practices in working with students who have mild intellectual disabilities. The major themes of this study have shown the students have:

- Increased engagement
- Increased growth
- Increased participation
- Increased production
- Increased confidence
- Level access to learning

While, this study also addresses a need of additional support in in the learning process, technology and digital resources can aid in providing that support. Educators and policymakers must see that developing strong student-centered mainstream classrooms, through the use of technology, does increase the engagement of students with mild intellectual disabilities. With increased engagement in the learning process, students with mild intellectual disabilities receive a stronger education, allowing them to become more engaged members of society.

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Appendix A

Teacher Interview Questions

1. Describe what student engagement looks like? What does it look like in your classroom?
2. Please describe your student-centered classroom and explain how this impacts the level of engagement of your students.
3. Tell me about some of your activities using technology. Describe how your students with mild intellectual disabilities respond to those activities?
4. What methods do you use, or have you found that best measures the level of engagement of your students? Are those methods the same for your students with mild intellectual disabilities?
5. Describe how your students with mild intellectual disabilities use technology in your classroom. What are the methods of assessing their knowledge do you use for activities?
6. Tell me about the resources you use for building a student-centered learning environment. Do your students with mild intellectual disabilities use the same resources as their non-disabled peers? Any challenges in finding the necessary resources for engaging students?
7. Tell me about your perceptions of students with mild intellectual disabilities when technology is used in learning activities? Explain what it looks like when technology is not being used?
8. Tell me about some of the challenges you face concerning students with mild intellectual disabilities?
9. When you assign a task, what are the needs you see for students with mild intellectual disabilities? Explain how you are able to or not able to meet the needs presented. (4)
10. Explain how participation in class activities increase or decrease the level of engagement of your students. Is this the same for the students with mild intellectual disabilities? (Explain)
11. Tell me about the major challenges you have found when technology is used with students with mild intellectual disabilities. Do these challenges impact the student's engagement, ability to learn, lesson planning, etc?

12. Please tell me anything else you would like to add concerning the use of technology in building engagement for students with mild intellectual disabilities.

Appendix B

Qualitative Method Informed Consent INFORMED CONSENT FORM

A. PURPOSE AND BACKGROUND

Anthony Ewing, M.Ed., and Ed.S., a doctoral student in Educational Leadership at Northwest Nazarene University is conducting a research study related to the student-centered classrooms, the engagement in learning of students with mild intellectual disabilities in mainstream stream classrooms. Discovering how strategies are implemented, teacher perceptions, and what is needed to create the development of engagement for students with intellectual disabilities in the mainstream classroom. You are being asked to participate in this study as a volunteer because you are an educator who works with students who have intellectual disabilities or a student who has disabilities.

B. PROCEDURES

If you agree to be in the study, the following will occur:

1. You will be asked to sign an Informed Consent Form, volunteering to participate in the study.
2. You will answer a set interview questions. Your response(s) will help to provide and give encouragement to helping students with mild intellectual disabilities become engaged in the learning process within mainstream classrooms.
3. There are several questions prepared for this study. I may also ask additional questions for clarification such as, “can you expand on that issue?” or “how it made you feel?” If you are uncomfortable with any questions I ask, please let me know immediately and I will move to the next question. You may choose to end your participation in any part or all this study at any time.

C. RISKS/DISCOMFORTS

1. Some of the questions may make you uncomfortable or upset, but you are free to decline to answer any questions you do not wish to answer or to stop participation at any time.

Appendix B

Qualitative Method Informed Consent (continued)

2. For this research project, the researchers are requesting demographic information. The researchers will make every effort to protect your confidentiality. However, if you are uncomfortable answering any of these questions, you may leave them blank.
3. Confidentiality: Participation in research may involve a loss of privacy; however, your records will be handled as confidentially as possible. No individual identities will be used in any reports or publications that may result from this study. All data from notes, digital, and documents will be kept in a locked file cabinet and the key to the cabinet will be kept in a separate location unless on the researcher's person. In compliance with the Federal wide Assurance Code, data from this study will be kept for three years, after which all data from the study will be destroyed (45 CFR 46.117).
4. Only the primary researcher and the research supervisor will be privy to data from this study. As researchers, both parties are bound to keep data as secure and confidential as possible.

D. BENEFITS

There will be no direct benefit to you from participating in this study. However, the information you provide may help educators and other students with mild intellectual disabilities to better understand what needed to achieve success in becoming more engaged in the learning process for students with mild intellectual disabilities in the mainstream student-centered classroom.

E. PAYMENTS

There are no payments for participating in this study.

F. QUESTIONS

If you have questions or concerns about participating in this study, you should first talk with the researcher. Anthony Ewing can be contacted via email at anthonyewing@nnu.edu, via telephone at 208-258-0066. If for some reason you do not wish to do this, you may contact Dr. Bethani Studebaker, Doctoral Committee Chair at Northwest Nazarene University, via email at bstudebaker@nnu.edu, via telephone at 208-467-8802, or by writing: 623 University Drive, Nampa, Idaho, 83686.

G. CONSENT

You will be given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You are free to decline to be in this study, or to withdraw from it at any point.

Appendix B**Qualitative Method Informed Consent (continued)**

I give my consent to participate in this study:

Signature of Study Participant

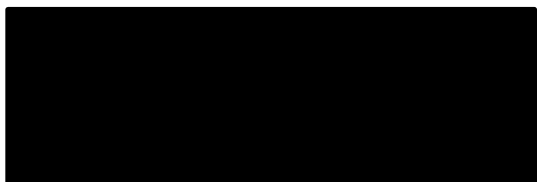
Date

Signature of Person Obtaining Consent

Date

**THE NORTHWEST NAZARENE UNIVERSITY HUMAN RESEARCH REVIEW
COMMITTEE HAS REVIEWED THIS PROJECT FOR THE PROTECTION OF HUMAN
PARTICIPANTS IN RESEARCH.**

**Appendix C
Site Permission Letter**



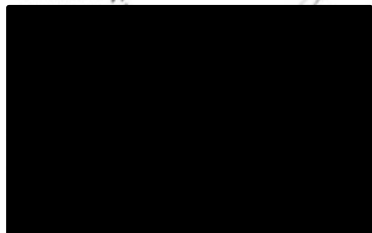
November 1, 2019

To Whom It May Concern:

This letter is written to grant Anthony Ewing permission to conduct research within the 

We have reviewed the purpose and methodology of this study and believe it would provide insights that may be beneficial to the school district. The district would be interested in the findings so it can better understand how student-centered learning can improve outcomes for students with learning disabilities.

Sincerely,



Appendix D

Member Checking Email

Date: January 21, 2020

Dear Participant,

Thank you for your participation in the study this school year. I wanted to let you know some of the themes that resulted from the interview and survey questions of all participants (see below). Please let us know if these accurately depicted our conversation. If you have any suggestion or modifications, please let us know as well.

1. How does student-centered learning, implemented through the use of technology, impact the level of engagement for middle school students with mild intellectual disabilities being educated in the mainstream classroom?
 - a. Active Participation
 - b. Increased Engagement
2. What are the perceptions of teachers on how middle school students with mild intellectual disabilities respond to student-centered activities, implemented through the use of technology, in the mainstream classroom?
 - a. Confidence
 - b. Growth
3. As perceived by the general classroom teacher, how does the implementation of a student-centered learning environment for middle school students with mild intellectual disabilities impact an equitable and inclusive learning environment?
 - a. Levels learning
 - b. Increased Production
4. What types of challenges do middle school students with mild intellectual disabilities being educated in the mainstream classroom confront during the implementation of a student-centered learning environment?
 - a. Distractions
 - b. Extra Support

Thank you again for your help and we look forward to hearing from you.

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