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Effective Professional Development Implementation and the Outcome on Student Progress

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by

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ABSTRACT

Professional development is a topic that has been researched in length. Researchers have spent time determining the most effective practices to increase student achievement. Although the research exists studies show professional development is still not consistently effective. Teacher's views have been shown to contribute to the ineffectiveness of professional development practices. There is a need to determine what teachers' opinions are as far as what professional development practices are useful for them within the classroom and what adaptations they make to these professional developments to use them in their classroom or with a particular group of students they serve. The study will be organized by the following central ideas: teachers' views of professional development, teachers' views of professional development and the effect on student outcomes, what re-inventions participants made, and the effect re-inventions had on student outcomes.

This study's purpose is to apply Roger's Diffusion Theory to present professional development and determine student outcomes based on how the teacher views and re-invents professional development. The study uses mixed-method research to collect data and analyze results. The study results showed there was a positive correlation between re-invention and student outcomes. Based on the size of the sample, no conclusion on the effect of professional development on student outcomes could be made. The major theme of the study is the need for professionals to be adaptable and sustainable. The study highlights the need for the administration to have a plan of sustainability for each of the professional development trainings presented to teachers. Future research on the topic should be large-scale and include longitudinal studies.

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CHAPTER 1: Introduction

Introduction

All teachers and support staff can access professional development opportunities during the school year. The opportunities are chosen by the administration of the school district to meet the requirements set by the state and federal government for educators. These opportunities were offered following the 1997 reauthorization of the Individuals with Disabilities Education Act. The act was passed to ensure both special education and regular education teachers were provided with educational opportunities that would give them the tools they needed to support the students they teach regardless of their disability. The hope was if the teachers increased their skills the students with disabilities would have more opportunities to access the general education classroom (Professional Development for Teachers, 2000).

While professional development opportunities are provided to be helpful for teachers, the question lies, do the teachers who are provided opportunities find professional development worthwhile? and what are the requirements for the teachers to use professional development in the classroom? Rogers (2003), believes the answer to these questions can be found within his diffusion theory, which he has worked on creating for decades. He has proven that teachers adapt new techniques at different rates based on numerous factors. These factors will be discussed in detail in the literature review chapter. Applying Roger's theory to understanding how teachers implement professional development can lead to a deeper understanding of how people in a society adopt innovative ideas, allowing for changes to be made to the professional development opportunities teachers are given.

Problem

Professional development is a topic that has been researched in length over the years. Researchers have spent time determining the most effective practices and presentations to

positively affect students' education. Even though all this research exists in professional development most training being offered to teachers is not adapted to the findings. Professional Development is being offered that has little to do with what is already going on in the classroom, school, or school district. Leaving professional development opportunities that have little to no connection to the teachers and the support they need (Richardson, 2003). Professional development is designed to be a valuable educational experience for teachers. Even with the best intentions professional development will not be successful if there is no plan for implementation and sustainability following the training (Darling-Hammond, 2017).

The question is, why are these practices not being implemented if the background knowledge of effective professional development exists? Cost plays a significant role in why research-based professional development is not available to teachers (Richardson, 2003). Most school districts are run on tight budgets that may not allow for high-quality professional development opportunities. The cost of high-quality professional development is typically twice what the school spends per teacher per year on continuing education opportunities (Birman et al., 2001).

Next is time, professional development takes time to properly implement following the initial training. Teachers' responsibilities are vast, leaving little time for new practices to be properly implemented (Richardson, 2003). Teachers do not want to commit to something that will need a commitment during the summer or other scheduled days off. Teachers usually prefer opportunities during the school year (Birman et al., 2001).

"Differences in communities of school administrators, teachers, and students uniquely affect professional development processes and can strongly influence the characteristics that contribute to professional development's effectiveness" (Guskey, 2003, p. 47). Professional

development is not meant to be a one-size-fits-all practice, but school districts continue to present large trainings that are not relevant to the teachers. Research shows for professional development to be successful it needs to be targeted towards teachers in particular settings (Guskey, 1995).

The opportunities provided to teachers during the school year are typically driven by state and federal standards. The professional development (PD) days outlined in the school year schedules are tightly scheduled with training and lectures chosen by the administration. The teachers often do not have the option to choose their opportunities. Research has shown that the professional development the teachers receive is not regularly implemented in the classroom. The research must continue to determine the factors that lead to the lack of implementation. The Diffusion Theory being applied to the process of implementation and innovations will provide insight. If the teachers do not believe in the effectiveness of the opportunities being presented, their time is being wasted when they attend the scheduled PD. The professional development needs to be offered in a way that is implemented in the classroom.

Existing Research

Diffusion Theory and Professional Development

A review of several professional development programs suggests that "the content of in-service programs does indeed make a difference, and that programs that focus on subject-matter knowledge and student learning of particular subject matter are likely to have larger positive effects on student learning than are programs that focus mainly on teaching behaviors" (Kennedy, 1998, p. 9). Kennedy (1998) showed a connection between professional development practices and student outcomes. He made it noticeably clear that these results were only seen

when professional development was provided with the strategies determined to be effective through years of research (Kennedy, 1998).

Fisher (2005), completed a study related to Roger's Diffusion Theory and innovations in staff development. He studied how a new initiative introduced by the No Child Left Behind Act was diffused throughout the school system he was studying. The research was like the research presented in the current study, the difference being the current research focuses on how innovations and teachers' views of professional development influence student outcomes. Fisher's (2005), research focused on the teacher as the individual participant not considering student outcome. He focused on the teachers and how they implemented what they were taught during staff development in the classroom. He wanted to look at the innovations that were made by the teacher and how they were sustained over time (Fisher, 2005).

The teachers in the study found the staff development introduced as worthwhile. They determined the professional development provided helped them present relevant material that was going to have lasting effects on the teaching strategies they used in the classroom. Teachers were willing to complete staff development opportunities when it was likely to improve their classroom interventions and allow them to collaborate with peers. Teachers made changes to the professional development they were taught to meet individual students' needs not with the idea of re-invention. Teachers were less likely to implement the newly taught practice if they did not believe they had the skill set or support they needed to properly implement (Fisher, 2005).

Significance of Study

There have been a few studies done related to the theory of diffusion to professional development opportunities provided to teachers. The theory being applied to the way teachers implement professional development can provide needed insight to improve the opportunities we

are providing to our teachers. The study will give a general idea of teachers' opinions of professional development opportunities, how they go about implementing new professional development ideas, and whether the way they choose to implement the intervention improves the outcomes for the students.

Delimitations

The study will take place between March 2023- June 2023. The research will take place in a rural Western Pennsylvania school district with roughly 800 students enrolled. The sample will include teachers who receive professional development in Check and Connect and become mentors for a set group of students. The students who receive mentors are in grades 6-12 with an emotional disturbance diagnosis. The student's records will be reviewed to determine the effectiveness of the intervention. The study will gather information to gain insight into why professional development provided to teachers is not provided to students consistently.

Definitions

Adoption- "a decision to make full use of an innovation as the best course of action available" (Rodgers, 2003, p. 21).

Mentor- About the Check and Connect program discussed in the research, mentors are adults who have close working relationships with students. They have a significant role in the program, helping students connect to school and meet their goals. The mentor promotes student success, perseverance, and engagement in school (Anderson et al., 2004)**.**

Check and Connect- The Check and Connect intervention program has the primary focus of promoting student success and increasing their likelihood of graduating using a mentor program. The mentor makes connections with both students and families to support the student's goals (Anderson et al., 2004).

Diffusion- "Diffusion is the process in which innovation is communicated through certain channels over time among members of a social system" (Rodgers, 2003, p. 5). "Diffusion is a special type of communication in which the messages are about a new idea" (Rodgers, 2003, p.6).

Intervention- "Educational interventions provide students with the support needed to acquire the skills being taught by the educational system and should address functional skills, academic, cognitive, behavioral, and social skills that directly affect the child's ability access an education" (Lestrud, 2013, p.1061).

Implementation- "Implementation takes place when an individual puts an innovation to use" (Rodgers, 2003, p. 20).

Innovation- "Innovation is an idea, practice, or object that is perceived as new by an individual or other unit adoption" (Rodgers, 2003, p. 7).

Survey- "Survey research uses surveys to collect data. Those data are reported and used by decision-makers to improve the student experience. As its name implies, survey research uses a survey as a data collection tool. All surveys start with one common mission: collect data to help answer an important question that available data cannot address (Jones, 2018, p.1).

Phenomena- an observable event or physical occurrence (American Psychological Association, n.d.).

Rejection- "a decision not to adopt an innovation" (Rodgers, 2003, p. 21).

Re-invention- "re-invention, defined as the degree to which an innovation is changed or modified by a user in the process of adoption and implementation" (Rodgers, 2003, p. 17).

Summary

The remainder of the study is organized into five chapters. The study will also include a bibliography and appendices. The second chapter will provide a review of relevant literature. The literature chosen will be relevant and provide groundwork as to why the study is necessary. Chapter three outlines the process of the study including the process and practices. The data will be analyzed in chapter 4. Chapter 5 will contain the summary and conclusions determined by the study results.

Chapter 2: Literature Review

Professional Development

Teachers experience many different continuing education opportunities throughout the school year. The experiences are provided to help the teacher increase their personal, social, and emotional growth. These experiences can be presented in numerous ways (Desimone, 2009). No degree can prepare a teacher for the ever-growing education profession. Continuing education is the process of teachers increasing their knowledge of the latest research and educational practices to be responsive and flexible (Weingand, 1984).

The standards for our students have changed over the years, discussed below is recent legislation. These changes have made it crucial for teachers to continue their education to properly support the students they serve in the classroom (Odden et al., 2002). Professional development has been researched over the years and effective professional development practices have been determined. However, research has shown that school districts are still struggling to implement professional development that has a significant impact on students (Odden et al., 2002). Relating the Diffusion Theory to professional development could give educational professionals a more in-depth understanding of why professional development fails even when presented with fidelity (Rogers, 2003).

Effective Professional Development

Learning has been viewed as having both sociocultural and individual features (Borko,2004), "learning should be viewed as both a process of active individual construction and a process of enculturation into the practices of a wider society" (Cobb, 1994, pp.13). Educational researchers have developed a list of 21 characteristics that make up effective professional development. The list has been shortened to a more precise list that helps school districts choose

professional development effectively. Enhancing teacher content and teaching pedagogy was found to be the most used criteria for choosing professional development (Guskey, 2003).

In addition to these two characteristics, the importance of teacher communication and willingness to collaborate was noted. Each teacher brings a specific set of skills to the professional development experience. When teachers are willing to come together, share their ideas, and work with other teachers there is more likely to be a positive outcome from the training, affecting positive student outcomes (Guskey, 2003).

It has become well known among the education community, specifically teachers, who rarely apply what they learn from workshop-style professional development to their practices within the classroom. Regardless of this fact, millions of dollars of federal and state funds are put into workshops each year. The teachers were willing to regularly attend these professional development workshops, earn their credits, and return to their classrooms with little student impact. Knowing such practices are not effective, why are they continually being used? Research has suggested it is because they are efficient for the school districts to organize and present to staff members (Lumpe, 2007).

Professional Development Legislation

The 1997 reauthorization of the Individuals with Disability Act made it required that all teachers, not just those who specialize in special education have the skills necessary to educate these children with differing abilities and needs within the regular education classroom (*Professional Development for Teachers*, 2000). Following the act being passed it became clear that "unless professional development is an integral part of a school district's strategic plan, it is unlikely to meet the needs of all students" (*Professional Development for Teachers*, 2000, p.2). Following the passing of this act, the National Committee of Learning

Disabilities made it their mission to guarantee all personnel who worked with students had the professional development they needed to assist students in their success including administrators, school board members, classroom assistants, and offering opportunities to the parents of the students (*Professional Development for Teachers*, 2000).

Another important legislative act was the passing of the No Child Left Behind passing in 2001. The legislation highlighted the concerns that were found regarding the progress students were making in the public schools within the United States. A change came to the idea of "teacher readiness," before the legislation was passed teachers were perceived to be prepared to teach in the classroom following the completion of a university-accredited program. Now, many new requirements have been put into place requiring a lifetime of learning for the teacher (Torff et al., 2005).

The requirements for Pennsylvania teachers continuing education are outlined on the Pennsylvania Department of Education (PDE) website. Act 48 was passed in 1999 and is now used in all schools across Pennsylvania. Teachers must earn six-semester credits at a college level, six continuing education credits approved by PDE, or 180 hours (about 1 week) of professional development hours. The 180 hours can be earned through professional development programs, activities, or learning experiences. Any combination of the choices mentioned above to earn Act 48 credits. These credits must be earned within a five-year term to keep teaching certificates active in the state of Pennsylvania ("General Act 48 FAQ", n.d.).

Teachers are sent regular status of their certificates. The certificate status is maintained and updated in the Teacher Information Management System (TIMS). Teachers are responsible for making changes to their certificate within the TIMS system to ensure it is up to date. The state also has a site set up for teachers to track their Act 48 credit totals. The Professional

Educator Record Management System (PERMS), provides teachers with a cumulative total of the number of credits they have earned allowing the teacher to know what professional development hours they need to keep their certificate active ("General act 48 FAQ", n.d.)

Due to these new regulations for professional development, The National Committee of Learning Disabilities and The National Staff Development Council authored an article titled *Professional Development for Teachers* (2007), which outlined key principles for effective continuous professional development:

1. Supports the ongoing acquisition of new skills for ALL students (p.4).
2. Requires strong leadership supported by the entire educational community (p.4).
3. It is funded and is an integral part of the school's strategic plan (p.5).
4. Provides sufficient time during the workday for staff members to learn and work together (p.5).
5. Requires an understanding of the change process (p.5).
6. It is based on principles of adult learning (p.5).
7. Provides planned follow-up (p.5).
8. Requires ongoing evaluation (p.5).
9. Increases the understanding of how to create school environments and provide instruction that is responsive to the needs of the students (p.5).
10. Prepares teachers in the effective use of appropriate academic modifications (p.5).
11. Facilitates the development and implementation of positive school climate, classroom management, services, and strategies to maximize student learning (p.5).

Professional development policies have grown as the education system in the United States continues to develop. Along with a national level, each of the fifty states has its outline and requirements for continuing education. Pennsylvania has its outline of professional development that each certified teacher must follow. Each of the policies created has one ideal in common, educate teachers to give them the tools they need to help educate and support students to the best of their ability. While professional development creation and requirements come from a positive place teacher have mixed emotions on the topic.

Teachers' Views on Professional Development

Teachers have varying views on professional development which can cause difficulties for administration when choosing professional development activities. Teachers who have years of experience may have a level of cynicism when working on professional development, causing them to not implement innovative ideas presented to them (Grant, 2001). Grant (2001) stated, "Teachers often believe instructional improvement does not require sustained effort and as a result of that belief, school professionals learn to marginalize interventions, treating them like peripheral ornaments rather than opportunities for significant learning and change" (p.9). The administration needs to be aware of the feelings and views of their teachers to encourage change and transform teaching strategies to increase student achievement (Grant, 2001).

Teachers are often lukewarm about the professional development opportunities that are provided to them. Teachers have many more responsibilities than just teaching a particular subject. Following a professional development session, many teachers found it easier and more time-efficient to continue using the same practices they had been doing before the training. Highlighting the issue that professional development is provided to teachers but the time it takes to implement innovative ideas in the classroom with fidelity is not considered (Hill, 2009). While

school districts value teacher feedback they must use their critiques to make positive changes to professional development practices.

At-Risk Students

Students who are "at-risk" are less likely to graduate high school. These students must be identified as young as possible. Studies have shown that when a student is identified as at-risk at an early age, they are less likely to drop out before graduating high school (Kagan,1988). Students who are at risk of dropping out typically struggle with academics and making social connections within the traditional school setting (McMillian & Reed, 2004). Following the reading of research, academic underachievement, socioeconomic status, discipline records, and attendance are the largest red flags.

The most obvious characteristic of an at-risk student is academic underachievement. These students struggle to meet the academic requirements of school which in turn lowers their self-confidence (Kagan,1988). A student who is not meeting academic requirements leading to retention is less likely to graduate high school (Sansone &Baker, 1990). Underachieving students have been linked to families who have a single parent, inadequate money to support the family, and a non-supportive home environment. When the household does not view academics as a priority the students are less likely to be invested in their education (Kagan,1988). There is a relation between students who have academically underachieved and behavioral dysfunction. These students may be socially withdrawn or overly disruptive (Kagan,1988). Students' poor grades and behavior can be related to factors within the home.

The student's socioeconomic status and family life can also be a contributing factor in labeling a student at risk for not completing school (Kagan,1988). A study completed by Rouse & Barrow (2006), shows the effects that low socioeconomic status can have on students.

Summary of Comments on Dissertation_FINAL.pdf

Page: 17

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Should this say doesn't?

Children who are raised in a low-income home have struggles in educational outcomes including test scores, grade retention, and high school graduation. They also may go on to have low-income jobs into adulthood (Rouse & Barrow, 2006). A study conducted by Betrend (1962) validates this point as he found a direct relation between socioeconomic status and high school dropouts. Table 1 continues to solidify this relation.

Table 1

National Dropout Rate Based on Family Income, October 2001, Grades 10-12

Characteristic	Dropout Rate (Percent)	Number of Event Dropouts (Thousands)
Low Income	10.7	131
Middle Income	5.4	323
High Income	1.7.	51

Source: U.S. Department of Commerce, Census Bureau, Current Population Survey, October 2001.

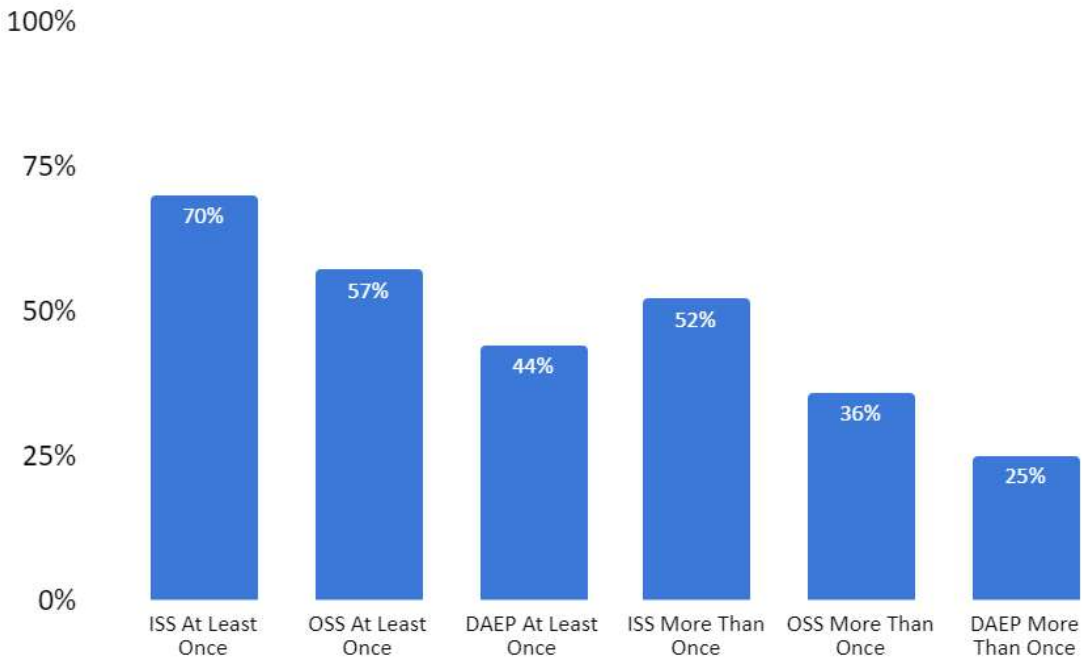
Attendance is also a factor in identifying students at risk. In a study completed by Sansone and Baker (1990), many students flagged for excessive attendance were due to treatment or problems associated with substance abuse. Attendance may also include being late to class, wandering the hallways, and being tardy to school.

Discipline can be a huge indicator of a student dropping out of high school and/or becoming part of our justice system. Students who are expelled or suspended are three times more likely to drop out of school and become a part of the juvenile justice system (Fabelo et al., 2011). A study completed by Noltemeyer et al. (2005) found a direct relation between students

who were given out-of-school suspension and drop-out rates. When students have their first suspension before the ninth grade, they increase their chance of dropout by 20% (Balfanz et al., 2014). Discipline options in most school districts are as follows: in-school suspension (ISS), out-of-school suspension (OSS), and discipline alternative educational program (DAEP).

Table 2

Texas Four-Year Graduation Rates by Discipline Type



Note. Students who were disciplined once or more in Texas schools about dropout rates from the years 2011-2015. The percent indicates the likelihood of a student graduating. Adapted from Graduation Outcomes for Ninth Graders Placed in ISS, OSS, or DAEP Once or More received from TEA on January 24, 2020, in response to the Texas Public Information Act.

Students may have one, none, or all of these struggles in their educational and personal lives. Any one of these factors can contribute to their likelihood of graduating high school. Identifying these students as early as possible and providing interventions can increase the student's chances of success.

Check and Connect

The completion of education is crucial for children to have a successful and fulfilling life. The world's markets and competitive workforce play into the importance of students within the United States graduating from high school and being prepared for life after high school. The current rate of dropouts continues to be a large economic and social problem (Maynard et al., 2013). Interventions are needed within the public-school system to prevent at-risk students from dropping out prior to graduation.

As defined on the What Works Clearinghouse site, Check and Connect is an intervention put in place to decrease the dropout rate of students within the public-school setting. The program focuses on students diagnosed with emotional, learning, or behavioral disabilities starting the intervention in middle school. The program consists of the "Check" and "Connect" model. The monitor and student work together to complete both aspects (Check and Connect, 2015).

The mentor has a specific role within the program. As defined by Christenson, "the monitor's job is to create a person-environment fit between the student and his or her school and home contexts that enhances the students' engagement with school. Recognizing the importance of students' multiple environments – home, school, and community – monitors work to create positive relationships in all three environments" (Christenson, 2018). The mentor must follow through with each part of the check and connect for the program to be successful.

Page: 20

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Capitalization?

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They just rolled out an elementary version of Check and Connect.

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Mentor?

The "check" portion of the program involves both the student and the mentor. Together they check the three main components of the "ABC" system for students (Check and Connect, 2015). The "ABC' model was determined by the Early Warning System (EWS), the system is used to find students who may be considered at-risk for not graduating from high school. The A is for attendance, the B is for behavior, and the C is for coursework completion. If a student, particularly one in special education, is not proficient in these areas, they are more likely to be a dropout (Forum Guide to Early Warning Systems, 2018).

Connecting to the students is also a significant role of the mentor. Research has shown that making connections with adults in the school building may have the greatest impact on the students (Lindt & Blair, 2017). Check and Connect has a primary focus on mentors developing relationships with both the student and the family (Check and Connect, 2015). Students achieve better grades, establish goals, and increase their self-esteem with the help of their mentors. The mentor can be any supportive adult within the school building. It does not have to be a teacher. It could include a custodian, bus driver, counselor, cafeteria worker, etc. (Clasen & Clasen, 1997). The connections the mentors develop with the students can have long-lasting positive effects throughout their lifetime.

"Educational achievement and school completion are basic components of the healthy development of children and youth of the success of young adults across their lives" (Maynard et al., pp. 296, 2013). Students need academic or transitional success to be competitive in global markets, and local and state markets (Maynard et al., 2013). The Check and Connect program is an intervention to help students meet their academic and post-secondary goals through the support of an adult located within the school environment.

Page: 21

Number: 1 Author: Mariha Shields Date: 10/13/2023 10:37:00 PM -04'00'
Mentor?

Diffusion Theory

Rogers's Diffusion Theory will play a key role in the conceptual framework for the study. The researcher will be focusing on Rogers Innovation-Decision Process. The Diffusion Theory with its final draft written in 2003 is a theory outlined by Everett Rogers that theorizes the way the latest information is spread through a social system (Orr, 2003). Rogers walks the readers through his life and the development of the diffusion theory in a text titled "A Prospective and Retrospective Look at the Diffusion Model." The text is written with a first-person account of his life and the innovations occurring around him to help develop the Diffusion Theory (Rogers, 2004).

He describes how he was first influenced by a hybrid seed study conducted by neighboring farmers, Ryan, and Goss. Ryan was inspired to complete the study to determine the non-economic factors that contribute to chosen farming practices. He applied diffusion to determine the factors that led to farmers' participation in innovative agriculture practices. The first factor was determined to be farmers had to leave old practices behind to adopt the hybrid seed model, meaning the farmers had to get out of their comfort zone which was no easy feat for them. It took 13 years for the new practices to be completely adapted. The second influence was the opinions of other farmers. If a neighboring farmer chose not to adopt the idea the farmer next door was less likely to change to the hybrid seed model (Rogers, 2004).

Rogers continued to go on and study diffusion following his service in the military ending in 1954. He authored his doctoral dissertation in 1957, where he continued to study agricultural diffusion in Iowa and review other literature on diffusion. He reviewed two studies, one on the diffusion of kindergarteners and driving training among schools and the spread of an antibiotic among doctors. He found common themes in his studies, determining that it did not

matter what type of innovation was being studied but the adopters, place, and culture. Leading him to believe that social factors played a predominant role in whether an innovation will be successfully diffused through the social system (Rogers, 2003).

Diffusion was defined by Rogers (2003) "as the process in which an innovation is communicated through certain channels over time among the members of a social system" (p.5). The communication used in the Diffusion theory is specific and defined as "a process in which participants create and share information with one another to reach a mutual understanding" (Rogers, 2003, p.6). Each of these terms works in congruency to reach a goal of innovation.

He continued to argue for a generalized diffusion model through research. He authored a book titled "Diffusion of Innovations," in 1962. The book laid out the common arguments developed by Rogers used to explain the Diffusion Theory. He chose to get rid of the variety of terms that were used to describe the theory and use the word "innovation." Kreps (2017) found that Rogers described innovation as "a new idea, a new technology or product, or even a set of new behaviors that a health communicator might want certain groups of people (such as at-risk population members, patients, family caregivers, healthcare providers, or even health care system administrators) to learn about accept, adopts, and utilize". It is important to note that this is one take on how innovation can be used. As proven by Roger innovation can be applied to many ideas and topics.

Those who are innovators do not all adopt these innovations at the same rate. Rogers attached names to each of the innovators based on when they chose to implement a new idea. He called them "adopter categories." Increased innovativeness of a person is the main goal when any innovation is introduced to a group of people in a social system. Rogers classified these people as innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003).

Innovators are seen as venturesome, which means they are obsessed with innovating innovative ideas. These people may have close social networks that all share similar ideas. There are specific traits that innovators must have to fall under Roger's classification. Rogers (2003), classified the following traits:

1. Control of substantial financial resources helps absorb losses from an unprofitable innovation (p.282).

2. The ability to understand and apply complex technical knowledge (p.282).

3. The ability to cope with a high degree of uncertainty about innovation at the time he or she adopts (p.282).

4. Willing to accept an occasional setback when a new idea proves unsuccessful (p.282).

Early adopters

According to Rogers (2003), individuals are more likely to adopt innovations if they have the following traits:

1. Relative advantage is the degree to which innovation is perceived as better than the idea supersedes. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption will be (p.15).

2. Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. An idea incompatible with the values and norms of a social system will not be adopted as rapidly as an innovation compatible (p. 15).

3. Complexity is the degree to which an innovation may be experimented with on a limited basis. Innovative ideas that can be tried on installment plans will be adopted more quickly than innovations that are not divisible (p.15).

4. Trialability is the degree to which an innovation may be experimented with on a limited basis (p.15)

5. Observability is the degree to which the results of an innovation are visible to others (p. 15).

When a person adopts an innovation, they are likely to make adaptations that make the innovation fit into their lifestyle to benefit them. Adaptations made can also be called re-invention. Re-invention was defined as, "the degree to which an innovation is changed or modified by a user on the process of adoption and implementation" (Rogers, 2003).

Innovations can cause uncertainty for those they are presented to; this causes individuals to be motivated to learn and form opinions about the innovation to eliminate the uncertainty. The process by which this information on the innovation is received is typically through a social network. The process can be difficult and take many years to diffuse through the social system. Professionals have completed research to find ways to streamline the process and find ways to increase the rate of the diffusion of innovation. Rogers was able to use this information to define the social process that occurs when an innovation is presented to an individual (Rogers, 2003).

According to Rogers (2003), they are an important part of the social system. They have the highest degree of opinion in most of the systems they are a part of. They are sought out when it is necessary to speed up the adoption process. They are the individuals that the system is most likely to check with before deciding whether to adopt a new idea. They help to trigger the masses to adopt. The adopter is respected by peers and is discrete with innovative ideas. Once an adopter puts a stamp of approval on a new idea it is likely to be adopted within the system (Rogers, 2003).

The adopter goes through a process known as The Innovation-Decision process, involving five steps described by Rogers (2003):

1.Knowledgeable: when an individual learns of the innovation's existence and gains some understanding of how it functions. The information sought by an individual in this stage typically reduces uncertainty about the cause-effect relationships related to the innovation's capacity to solve an individual's problems (p.169).

2. Persuasion: occurs when an individual is encouraged by the information provided to form a favorable (or sometimes unfavorable) opinion or attitude toward the innovation based upon the information provided (p.169).

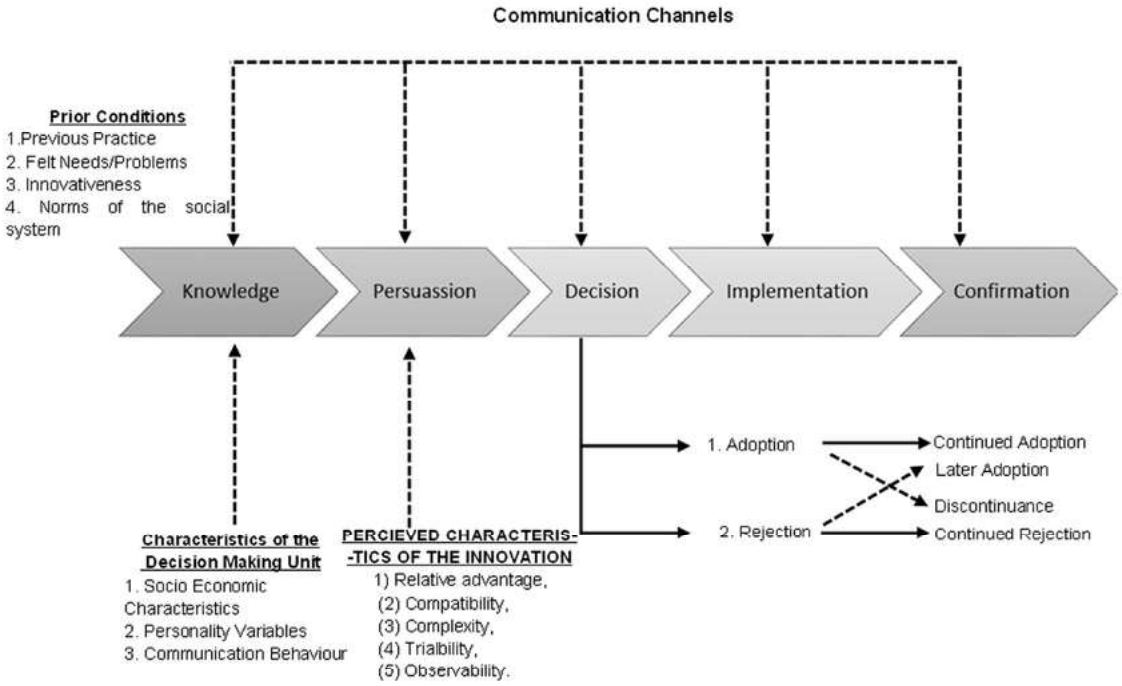
3. Decision: when an individual form a favorable or unfavorable attitude toward the innovation based upon the information provided (p.169).

4. *Implementation:* when the individual is encouraged to engage in activities to adopt and utilize innovation (p.169).

5.Confirmation: knowledge occurs when an individual seeks reinforcement of an innovation decision that has already been made but may be reversed if the individual is exposed to conflicting messages about the innovation. At this point, the individual can decide to make full use of an innovation as the best course of action available (i.e., adoption) or choose not to adopt it (i.e., rejection) (p.169).

Figure 1

Model of Rogers (2003) Five Stages in the Innovation-Decision Process



The Diffusion Theory is used across many academic disciplines to explain how we social beings innovate ideas (Rogers, 2004). The Diffusion Theory continues to hold steady as a current theory that is actively researched. Rogers claims this to mean that he considers the Diffusion Theory as a practice to be used in widespread use, meaning it has become generalized (Rogers, 2003).

What is the Purpose?

This study's purpose is to apply the Diffusion Theory to present professional development and determine student outcomes based on how the teacher views and applies the professional development. The study will be used when a group of volunteer mentors are

Page: 27

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presented with Check and Connect professional development to provide guidelines on how they should work with students and the program's purpose.

Research Questions

- What factors contributed to the teacher volunteering to participate in the Check and Connect professional development?
- How did the teachers view the Check and Connect professional development provided to affect the student's progress?
- What adaptations were made by the teachers to make the professional development fit the student they are mentoring?
- What are the outcomes for the students when mentors choose to apply Check and Connect with fidelity based on the training?
- What are the outcomes for the students when mentors choose to “re-invent” the professional development provided?

Need for the Study

Teachers learn a handful of professional development techniques each school year. All these professional developments are not utilized within the classroom, but others are adapted and used daily. There is a need to determine what teachers’ opinions are as far as what professional development practices are useful for them within the classroom and what adaptations they make to these professional developments to use them in their classroom or with a particular group of students they serve. The hope is the research will help school districts determine factors that go into a teacher’s decision to follow through on the techniques learned in professional development. In return, the teacher's time will be utilized well, and the professional development presented will be more likely to be utilized within the classroom and improve student outcomes.

The researcher works with emotional support students, with a focus on behavior and mental health for the select group of students they work with. The focus of the classroom is specific, leaving the professional development opportunities presented to them on teacher in-service days to be often irrelevant to the students they serve. In return, they do not use all aspects of the learned information in the class but adapt most practices to fit the classroom. If professional development was catered to the area of specialty, they are more likely to increase their knowledge, utilize the strategies learned, and improve the students' outcomes.

Summary

To conclude, Professional development has evolved over the years to provide teachers with the knowledge they need to present students with successful interventions. Legislation has guided the evolution of professional development. There are both national and state-level requirements for school districts and teachers to follow for continuing education. Rogers's Diffusion Theory will help guide the understanding of how professional development works and when a teacher is likely to implement an innovation. The next chapter will detail the methodology the researcher will use to create the connection between Roger's Diffusion Theory and newly introduced professional development.

Page: 29

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Chapter 3: Methodology

The Purpose of the Study

This study uses the Diffusion Theory to determine how a teacher's view of professional development affects innovation and student outcomes. The study will be used when a group of volunteer mentors are presented with Check and Connect professional development to provide guidelines on how they should work with students and the program's purpose.

QUAL-Quan Method

Qualitative

"Qualitative research is multimethod in focus, involving an interpretative, naturalistic approach to its subject matter" (Denzin & Lincoln, 2005, p.2). It involves collecting information from participants, confirming the quotes, and deciding what they mean. The researcher uses qualitative data to interpret what information was collected. Three diverse types of data can be collected in the study. The categories include stories, observations, and documents (Patton, 2015).

The data collected for qualitative studies comes from fieldwork. The researcher will spend time in the environment, observing, interviewing, and analyzing documents of the participants. The researcher will then take all information collected and analyze it looking for common themes (Patton, 2015).

Quantitative

Quantitative research can be defined as, "explaining phenomena by collecting numerical data that are analyzed using mathematically based methods" (Creswell,1994, p.204). The first feature of quantitative research is explaining phenomena. The researcher is looking to explain why something happens. The next feature is numerical data. Numerical data will be used and

collected to support the researcher in answering the proposed phenomena. The last feature is analyzing the data. The researcher will find a data tool that will present the information in a statistical version making finding connections easier (Sukamolson, 2007).

Mixed Method

Mixed-method research combines both statistics and stories to answer the proposed research questions (Patton,2015). The research calls for a real-life understanding in addition to the collection of numeral data. The method should only be chosen when combining them can pull from the strength of each of the methods of research. The research becomes both philosophical and theoretical ideology (Johnson et al.,2007).

For the research being conducted, the connecting data method will be used. The research connects information from the initial phase and then incorporates the data from the second phase to answer the research question. (Creswell et al., n.d.) There are no set guidelines for conducting mixed-method research, but the following general steps should be considered.

a. Preliminary considerations:
    a. Consider your philosophy and theory (Creswell et al., n.d., p. 6)
    b. Consider if you have resources (e.g., time financial resources, skills) (Creswell et al., n.d., p. 6)
    c. Consider the research problem and your reasons for using mixed methods (Creswell et al., n.d., p. 6)
b. State study aims and research questions that call for qualitative, quantitative, and mixed methods, and that incorporate your reasons for conducting a mixed methods study (Creswell et al., n.d., p. 6).

c. Determine your methods of quantitative and qualitative data collection and analysis (when it will be collected, what emphasis will be given to each, and how they will be integrated or mixed) (Creswell et al., n.d., p. 7).
d. Select a mixed-method design that helps address your research questions and the data collection/analysis/ integration procedures (Creswell et al., best practices, p. 7).
e. Collect and analyze the data (Creswell et al., n.d., p. 7.)
f. Interpret how the combined quantitative and qualitative approaches contribute to addressing the research problem and questions (Creswell et al., n.d., p. 7)
g. Draft the final report making explicit the contribution of the mixed methods approach (Creswell et al., n.d., p. 7)

The convergent design will be utilized by the researcher. A convergent design connects concurrent quantitative and qualitative data to meet the study's purpose (Johnson et al., 2001). The researcher will use both student data and questionnaires to determine a trend between teacher's views of professional development, the parts of the professional development they chose to utilize, and student outcomes.

Setting

The district is in a rural area in Western Pennsylvania. The district consists of an elementary building and a Jr./Sr. High building. The district is small with 781 students enrolled, including both buildings. There are 70 teachers and 13 instructional aides in the district. The Jr./Sr. High Building consists of students in grades 6-12., ranging in age from 10-21, including students receiving extended special education services. The student population is 98% white, 1.2 % multiracial, and .9% Asian. The teacher-to-student ratio is 13:1.

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The average household income within the area is $70,000. 50% of the students who attend the district qualify for free/reduced lunch (Penns Manor Area School District, n.d.). The town within the district continues to see increased crime, drug use, and poverty. In 2022, the violent crime in Clymer, PA was reported to be 17.81% higher than the national average along with aggravated assault at 121% (Crime Statistics for Clymer, PA, n.d.). The declining state of the city is seen in the students who attend the district.

Participants

For this study's purpose, teachers and students in the senior high school will be the focus. Specifically, students in grades 9-12 and are diagnosed with a disability. The Check and Connect website sponsored by the University of Minnesota outlined the criteria a student must meet to participate in the intervention. The criteria are specific to students in Pennsylvania. The students are referred to the Check and Connect program based on the early warning system (EWS). The system is outlined in detail in the literature review portion of the text. In short, the student's attendance, behavior, and academic performance are reviewed before a referral is completed. The academics are specifically focused on science, English, and/or math. Any mental health diagnosis or mental health services being offered to the student are also considered when determining the student's status of participation (*Statewide implementation in Pennsylvania: Check & connect student engagement intervention model: Institute on community integration: University of Minnesota*, 2016).

The school staff may volunteer to be a mentor. The staff can include teachers, instructional assistants, administration, counselors, assistant directors, social workers, and school psychologists. Each mentor may have up to three mentees on their caseload. The mentors are given time within their schedule to consistently meet with their students. They are encouraged to

Page: 33

Number: 1 Author: Mariha Shields Date: 10/13/2023 11:17:00 PM -04'00'
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meet with students within the parameters of the school day (*Statewide implementation in Pennsylvania: Check & connect student engagement intervention model: Institute on community integration: University of Minnesota*, 2016).

Sampling

The sample will be mentor volunteers and the students they mentor. The sample is specifically selected by their willingness to participate in the study and mentor the student. The students will be participating only through a review of their records to determine the effectiveness of the Check and Connect professional development. There will be five qualifying students and five trained mentors participating in the study.

Process

The participants will be presented with the Check and Connect professional development training on February 20, 2023. Following the professional development, the researcher will send an email to all potential participants outlining the study and what is required (Appendix C). Once the participants have replied to the email, they will be sent an informed consent form to be signed (Appendix D). All participants will then be sent the Pennsylvania Department of Education Professional Development survey to be completed within two weeks of the date it is given.

The participants will begin working with assigned students on March 23, 2023. Students are referred to the program based on grades, attendance, and discipline infractions. Once referred the students are asked to choose their top three choices out of a list of mentors. The mentors are assigned based on availability. The mentors must meet with their mentees at least once per week for 9 weeks. When the nine-week period ends, the participants will be given the follow-up innovation survey (Appendix B).

Page: 34

Number: 1 Author: Mild, Toni LDate: 7/15/2022 12:35:00 PM -04'00'
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The researcher will then begin gathering student data. The student's average grades percentages, attendance rates, and discipline infractions for the first three 9-week periods of the 2022-2023 school year will be calculated and recorded using the NVivo software. The same data for marking period four will be collected and recorded. The teacher responses to both surveys (Appendix A & B) will be recorded into the software. The researcher will then analyze the data for trends and come to conclusions outlined in detail.

Tentative Timeline

The professional development will be provided to all participants on February 20, 2023, during a teacher in-service day. The Pennsylvania Department of Education Professional Development survey will be passed on to all participants after the training. The mentors will begin working with Mentees on March 23, 2023- June 1, 2023. They are expected to meet with their mentees a minimum of one time per week for the entirety of the dates provided. On June 1, 2023, participants will complete the follow-up survey (Appendix B). At this time, the researcher will begin to review student data, looking for patterns in attendance, behavior, and grades following the completion of the nine-week mentoring program.

Data Collection

The participants were contacted personally by the researcher to obtain their level of interest in participating in the study. The conversation was informally held by the researcher and the possible participant. They were assured all confidentiality measures would be followed. The purpose of the study, how the data would be collected and analyzed, the impacts of the results, and the general outline of the study were reviewed with each potential participant.

An email (Appendix C) was sent out to formally confirm the participant's participation in the study. The participant was sent a letter of consent to be signed and returned to the researcher

(Appendix D). Once the consent was received the researcher made a copy of the form and returned it to the participant. Before the study started, all participants were asked questions. The questions were received verbally and by email communication.

The participants then participated in the initial professional development training. The training was held on a teacher-in-service day, lasting six and a half hours. After the training, the participants were given two weeks to fill out and complete the Pennsylvania Department of Education's Professional Development Survey (Appendix A). The participants were then assigned their mentees. Mentors are chosen by the students. The student was shown a list of available mentors and were asked to choose their top three choices. The mentors were then assigned based on availability. The mentors were expected to meet with their mentees at least once per week.

The participants will meet with the student mentees for nine weeks. When the nine-week period concludes the researcher will provide the participants with a follow-up survey (Appendix B). They will be asked about the changes they made to the initial professional development training along with the rationale of the changes they made. The information will be used to make a correlation between changes in the taught professional development and the student outcome. The researcher will review student data including grades, discipline, and attendance records to make the correlation.

Questionnaire

The mentors will be asked to complete a professional development survey after completing the Check and Connect training. The survey was created by The Pennsylvania Department of Education (Appendix A). The survey collects information following the

Page: 36

Number: 1 Author: Mariha Shields Date: 10/13/2023 11:09:00 PM -04'00'
Mentors?

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This is an interesting way of pairing up mentors and mentees. I like it!

completion of a professional development activity regarding participant satisfaction, impact of professional practice, and comments.

The participants will be asked to complete the follow-up innovation survey (Appendix B). The survey asked the participants about the innovations they did or did not make during the implementation stage of the professional development.

Archival Documents

Student data will be collected from the 2021-2022 school year using a school-wide system called Sapphire. The system maintains all student data for the district. The system will be reviewed for qualifying students' grades, attendance, and discipline infractions.

Data Analysis

The researcher will be using the software NVivo. NVivo is a data system that can be used for qualitative and mixed-method research. The program is useful for sorting, organizing, and analyzing data. Research has shown that using NVivo can increase the quality of the data collected. They offer a variety of tools and resources that simplify analyzing data (Dhakal, 2022). "The audience for NVivo is qualitative researchers, mixed method researchers, and students learning about qualitative mixed methods research data collection, analysis, display, and reporting" (Dhakal, 2022, p. 270). Learning the program's ins and outs may be challenging for beginners, but the program comes along with a user-friendly digital support guide (Dhakal, 2022).

"An ANOVA test is a type of statistical test used to determine if there is a statistically significant difference between two or more categorical groups by testing for differences of means using variance" (Simkus, 2022, p.1). "An ANOVA can only be conducted if there is no relationship between the subjects in each sample. This means that subjects in the first group

cannot also be in the second group" (Simkus, 2022, p.1). ANOVA will be used to compare student results along with the innovations used and the teacher's view of the professional development opportunity provided.

Site Permission

The study's proposal will be presented and approved by the Slippery Rock University IRB (Institutional Review Board) before completing any part of the study. To access the site, permission was obtained via email from the superintendent and building principal. All materials and aspects of the study will be presented to the previously named administration before the study starts.

Presentation of Results

The researcher will share the results with the stakeholders via the publication of the study. The researcher will review the study's results specifically with the administration at the school district where it is being conducted.

LIMITATIONS

There are multiple limitations expected as the research is conducted. The researcher is an employee of the school district, this may give them a biased view of the information collected based on the personal relationship with the staff member. The school district has extraordinarily little cultural diversity. All subjects participating in the study will be white. The sample size will remain small based on the size of the school district and the population to which the professional development is tailored.

Page: 38

Number: 1 Author: Mariha Shields Date: 10/13/2023 11:14:00 PM -04'00'
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SUMMARY

The research process is outlined in the chapter to give the reader a general understanding of how and why the study is being completed. Background knowledge is given in the design of the research being conducted. All procedures are outlined for the reader in detail.

Page: 39

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Chapter 4: Findings

Introduction

As stated in Chapter 1, the study reported here examined teacher's views on professional development, the reinvention/adaptation made, and the impact these factors had on student outcomes. The chapter is organized by the specific research questions posed in Chapter 2. It first reports the teacher's views on the professional development included in the study, adaptations teachers made and the correlations between these topics and student outcomes.

This study uses Roger's Diffusion Theory to determine how a teacher's view of professional development affects re-invention and student outcomes. In Chapter 5 the researcher will make direct relations between the findings of the study and Roger's Diffusion Theory. The study will begin with a group of volunteer mentors being presented with Check and Connect professional development to gain skills and training in mentoring at-risk students.

The study consisted of a mixed-method research strategy. Participants were given two surveys. The surveys were presented on the Google platform using Forms. The surveys were aligned to the first two research questions, "What were the teacher's views on the professional development?" and "What adaptations were made by the teachers to make professional development fit the students they are mentoring?" The researcher used responses from these surveys to conduct a qualitative analysis and answer the research questions.

The researcher used data from the students the participants were mentoring to make connections between the teacher's views on professional development, the adaptations they chose to make and the impact these factors have on student outcomes. The quantitative data analysis will align with the last three research questions, "How did the teachers view of the Check and Connect professional development provided affect the student's outcomes?", "What

are the outcomes for the students when mentors choose to apply Check and Connect with fidelity based on the training?", and "What are the outcomes for the students when mentors choose to "re-invent" the professional development provided?". Analysis of the data and making connections to survey responses allowed the researcher to determine the outcome of student results and determine themes from the study.

Restatement of Research Questions

1. What were the teacher's views on the professional development?
2. How did the teachers view of the Check and Connect professional development provided affect the student outcomes?
3. What adaptations were made by the teachers to make the professional development fit the student they are mentoring?
4. What are the outcomes for the students when mentors choose to apply Check and Connect with fidelity based on the training?
5. What are the outcomes for the students when mentors choose to "re-invent" the professional development provided?

Demographics

The participants in the study were all professionals of the Penns Manor Area School District. Each participant had at least five years of experience in the district. The participants were both male and female ranging from ages 26- 54 years. They all had completed a minimum of a four-year teacher-accredited program. The final number of participants was 8 teacher participants and the 8 students they mentored. The participants participated in the two surveys developed for the study.

The only student participation the researcher reviewing their data from marking period 4 of the 2022-2023 school year before they began the Check and Connect program, and marking period 1 of the 2023-2024 school year, following a nine-week participation in the program. Data was collected using the student data sheets (Appendix C.3). The students were not interviewed or surveyed in any manner. The student sample consisted of 8 students in grades 6 through 12 who were determined to be candidates for the Check and Connect program based on their at-risk status. At-risk students are determined by their grades in Science, Math, and Reading, the number of school days missed (attendance), and the number of discipline infractions obtained.

Views of Teacher's on Professional Development

The participants in the study were given a survey adapted from the PDE (Pennsylvania Department of Education) Professional Development Survey (Professional Development Survey for Educators and School Leaders, 2021) following the completion of the Check and Connect mentor training. Part one of the survey consisted of twelve questions. Each question was phrased as a statement prompting the participant to respond using a Likert scale from 1-5. One was poor and five was excellent. The second part of the survey consisted of four questions. Each question focused on gaining insight into the teacher's view of the professional development provided. Each of the open-ended questions were put into the NVivo qualitative software where each response was coded and used to determine trends and themes throughout the response.

Findings

The response from each participant in part one is provided in Table 3. The responses were consistently positive for seven out of the eight participants. The percentage of results of views of the professional development are outlined in Table 2 by each participant. All the participants were 88% satisfaction or higher except participant A who was dissatisfied with the

professional development at 65% satisfaction. The high volume of positive satisfaction was not predicted by the researcher.

The responses from part 2 of the professional development survey were varied. The responses are outlined in Figure 3. The participants reported the professional development was an effective use of their professional time. They found it helped make connections with the students they were mentoring. They reported the professional development was beneficial in other areas of their careers outside of mentoring. The teachers gained information about the families in the school community, increasing their compassion and empathy for other students in the school. The information gained from the professional development allowed participants to gain strategies they could use with other students outside the mentoring program.

Discussion

The majority's satisfaction with the professional development was unexpected. All but one of the participants scored the PD (Professional Development) at 88 satisfaction or above. The participants in the survey described the positive attributes of the PD. The ability to be able to increase their understanding of the community and students they serve was a response. The Check and Connect program training focus on providing mentor strategies to make connections with families and students through positive interactions. Participants described how the training impacted their overall teaching style. The teacher's described the PD as an effective use of their professional time. Teachers reported that time is limited to them when it comes to professional development opportunities. Participants reported participating in a training that they found value in and felt was a beneficial use of their time increased their desire to spend time using and innovating the program.

Figure 3

Participants Views on Professional Development

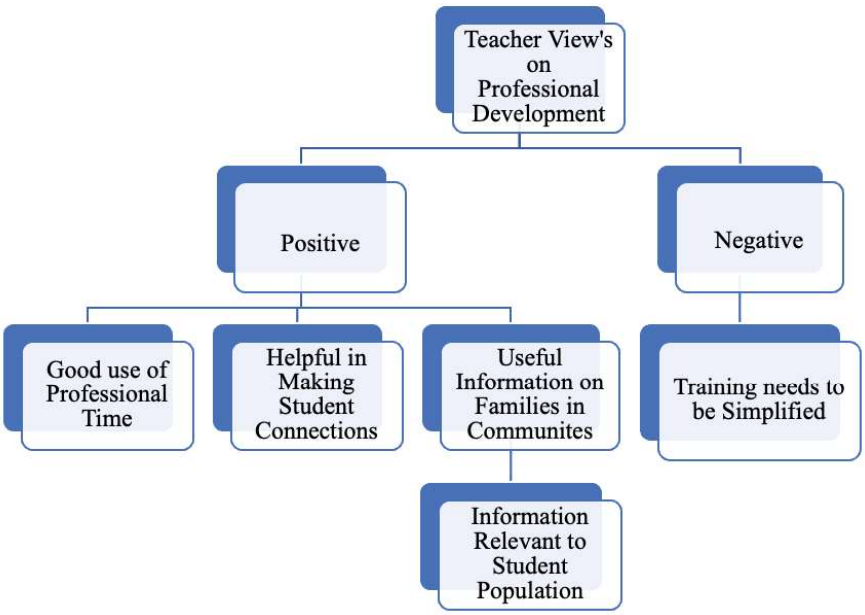


Table 2

Participant Responses to Professional Development Survey

Participant	**C**	**K**	**J**	**B**	**A**	**G**	**E**	**L**
Course/Activity was well organized	5	5	5	5	4	5	5	5
Course/Activity objective were clearly stated	5	5	5	5	4	5	5	5
Course/Activity assignments were relevant to Course/Activities Objectives	5	5	5	5	4	5	5	5
All necessary materials/equipment, and resources were provided or made readily available	5	5	5	5	4	5	5	5
Overall Instructor Performance	5	5	5	5	5	5	5	5
This activity enhanced the educator's/ school leader's content knowledge in the area of certification.	5	5	5	5	2	5	5	4
This activity increased the educator's/school's teaching skills based on research of effective practice.	5	5	5	5	2	5	5	4
This activity provided information on a variety of assessment skills.	5	5	5	5	3	4	5	4
This activity provided skills needed to analyze and use data in decision-making for instruction or at all levels of the school system.	5	5	5	5	2	5	5	4
This activity empowered participants to work effectively with parents and community partners to engage others to pursue excellence in learning.	5	5	5	5	3	5	5	5
This activity provided the participants with the knowledge and skills to think strategically and understand standards-based school reform.	5	5	5	5	3	4	5	4
This activity enhanced the participant's professional growth and deepened your reflection and self-assessment of exemplary practices.	5	5	5	4	3	5	5	5

Table 3

Participants Who Chose to Reinvent (N=60)

Participant	**C**	**K**	**J**	**B**	**A**	**G**	**E**	**L**
Satisfaction of PD	100%	100%	100%	98%	65%	98%	100%	88%

Note. Professional Development (PD). Table 3 shows the percentage of satisfaction of the professional development training provided to participants. The satisfaction survey was out of 60 points.

Teacher's Views on Professional Development and the Effect on Student Progress

Table 4 displays the outcomes for students who worked with mentors who had a positive or negative view of professional development. The positive or negative views were determined by the total responses from the participants out of the total number of points that could be given in the survey based on the Likert scale of 1-5, 1 being poor and 5 being excellent. The total was 60 points. Table 3 displays the total percentage of satisfaction given by each of the participants. Based on these findings, only 1 of the 8 participants had a negative view of the PD.

Findings

The researcher organized the table by each of the categories tracked by the Check and Connect program in relation to student outcomes. The categories included grades in Science, English, and Math along with attendance and discipline infractions. The researcher found the mean growth of each of the two samples of students (positive and negative). Students who

worked with mentors with positive views of the PD (n=7) and those who worked with mentors who had negative views (n=1). There was no clear correlation between the view of professional development by the teacher and the impact on student outcomes. The sample size of the students who worked with a negative view was not large enough to make a correlation.

Discussion

The sample size played a large part in determining if the teacher's views had an impact on the outcomes for students participating in the program. The researcher did not feel confident in the ability to come to any conclusions based on the information that was gathered from the study. The sample of one skewed the results for comparison. The group of positive reviews of professional development contained a sample size of 7. The researcher needed to average out the growth of these students in each area. The two samples were incomparable.

Table 4

Student Outcomes for Students Based on Mentors Views of Professional Development

	Views on PD	Mean Growth	Growth	Standard Deviation	n
Science	Positive	.58%		16.5	7
	Negative		28%		
English	Positive	-13.3%		14.2	7
	Negative		3.0%		
Math	Positive	-1.1%		11.8	7
	Negative		2.0%		
Attendance	Positive	-1.7		3.8	7
	Negative		-4		
Discipline	Positive	-0.3		2.6	7
	Negative		0.0		

Note. The table displays the growth for students based on their mentors' views of the Check and Connect Professional Development. There was only one student/mentor grouping in the negative views category. Positive group (n=7).

Re-invention and Adaptations

The participants were given a 7-question open-ended survey concerning re-invention and adaptations. Participants were asked to expand on the choice of using adaptations, factors in their decisions, and the results of the reinvention. Participants' detailed responses allowed the researcher to find themes within the study and make connections to the mentor's choices and student outcomes. Each of the open-ended questions were put into the NVivo qualitative software where each response was coded and used to determine trends and themes throughout the response.

Findings

As displayed in Table 5, 38% of the participants reported re-invention of professional development through innovations. The sample allowed the researcher to come to conclusions with representation from each group. Figure 4 shares the results from the survey in the open-ended questions. The topics are categorized into three areas: reinventions made, reasons for making reinventions, and reasons for not making reinventions. The participants provided detailed responses in each area when applicable.

The adaptations allowed for the participants to check students' grades, attendance, and discipline reports more frequently than the programs recommended one time per week. They reported this intervention allowed them to keep better track of the student and intervene, when necessary, without a long amount of time passing.

Discussion

The innovations were student first strategies. The mentors noted that they valued the innovations they were able to make and that they saw positively impacting the students they worked with. All participants who reported using innovations re-invented the data sheet the program provided. They reported this innovation to simplify the data taking process and spend more time with the students during their weekly meetings. They found speaking with the students directly rather than focusing on a complicated data sheet was a better use of their time. The ability to simplify the data sheet allowed participants to increase connection and build rapport with students. Lastly, participants reported they offered incentives in alignment with goals set during their meeting time. The program does focus on goal setting but does not give suggestions or schedules as far as reinforcement. The participants reported offering

reinforcement for positive progress promoted positive change in troubled areas. All the innovations benefited the student or saved time for the mentor.

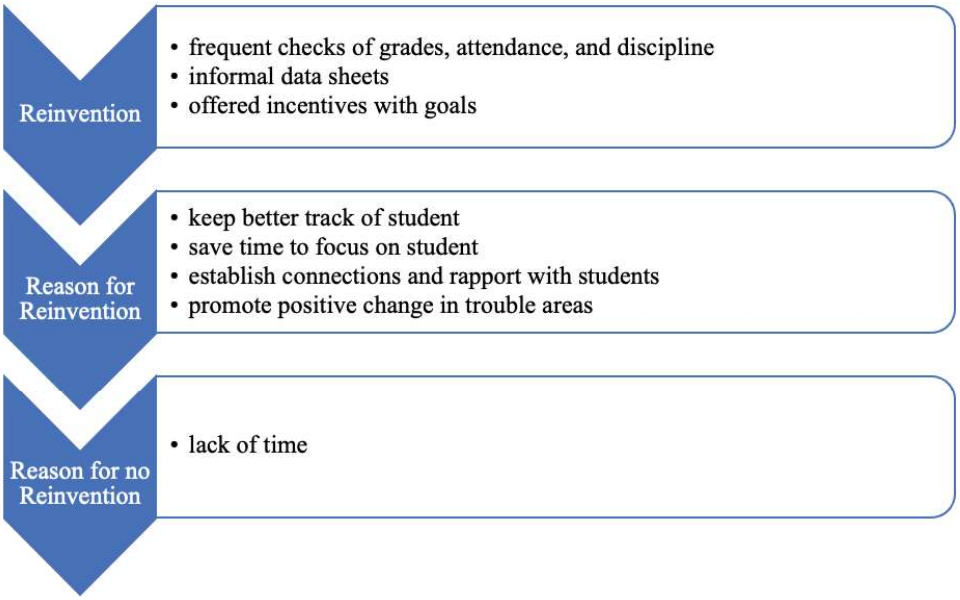
Table 5

Participants Who Chose to Reinvent (N=8)

Participant	C	K	J	B	A	G	E	L	% of Re-invention
Reinvent	Yes	Yes	Yes	No	No	No	No	No	38%

Figure 4

Professional Development Re-Invention



Outcomes for Students base on Re-Invention and Innovation

The researcher used the student data sheet (Appendix C.3) to organize the student's data. The data was organized first by grouping students into reinvention and no reinvention categories. There were 3 (n=3) students in the reinvention sample meaning their mentor chose to make reinventions to the Check and Connect training when working with the students. The sample for the no reinvention category was 5 (n=5). Then the researcher collected the data from marking period 4 of the 2022-2023 school year of the student participants, pre-intervention, including Science, Math and English final grades, attendance, and discipline infractions. The same data was taken for the first marking period of the 2023-2024 school year, post-intervention. Next the researcher determined the average growth or decline in all areas for each sample group. Those means and standard deviations were recorded and displayed in Table 6.

Findings

The sample population with no reinvention decreased in percentage in both Science and English. While the sample population with reinvention increased in those same areas. Math was the exception. In the subject area of math, the students who received reinvention decreased while those who did not increased slightly in percentage. Attendance and discipline both decreased in discipline infractions and school days missed within the sample population of those who received reinvention while the no reinvention population increased or remained the same.

Discussion

The results of the study show a trend in improvement for those students who worked with a mentor who chose to make reinventions to the training. The students improved in four out of the five areas monitored through the Check and Connect program. The improvement varied with the highest improvement in the area of science with an average of 13.3% increase. Those who

chose to reinvent gave responses to the open-ended portion of the survey suggesting the adaptation allowed them to make connections with students they felt were worthwhile and led to an increase in student outcomes. They spoke of the innovations with excitement and surprise at the success they found. The ability to reinvent allowed them to make changes that fit the students' specific needs beyond the interventions presented in the training. The theme of the ability to innovate and adapt programs to meet student needs will be explored and backed by research in Chapter 5.

Those who chose not to reinvent presented a reoccurring trend as to why they did not reinvent the training. Three out of the five participants who did not innovate reported it was due to the lack of time within their schedules to implement the program the way they would like to. Teachers feeling, they do not have time to properly implement was a recurring theme that will be explored against research in Chapter 5. The last two participants who did not innovate reported they felt no need to do so. Participants felt the material and strategies presented in the training provided adequate support for the students they were mentoring.

Table 6

Re-Invention Student Outcomes for Students who Worked with Mentors

	Re-invention	Mean Growth	Standard Deviation	n
Science	Reinvention	13.3%	16.8	3
	No Reinvention	-0.8%	19.6	5
English	Reinvention	0.67%	6.1	3
	No Reinvention	-11.4%	30.6	5
Math	Reinvention	-3%	9.5	3
	No Reinvention	.6%	13.9	5
Attendance	Reinvention	-5.83	2.8	3
	No Reinvention	0.30	2.0	5
Discipline	Reinvention	-1.0	2.6	3
	No Reinvention	0.0	2.8	5

Note. The table displays the mean growth results of students who worked with mentors who did or did not innovate professional development from marking period 4 of the 2023-2024 school year and marking period 1 of the 2023-2024 school year. The group of students who were given adaptations (n=3). The group of students who were not given adaptations (n=5). The negative attributes found in the attendance and discipline represent a decrease in the number of discipline infractions and missed school days from pre-intervention to post-intervention.

Conclusion

A mixed-method study was conducted in order to answer the research questions posed. The researcher used surveys with Likert scales and open-ended questions to gain qualitative data. The researcher used quantitative data collection of the student outcome to gain correlation between the qualitative and quantitative data. In Chapter 4, the researcher presented the data, reported the findings, and discussed each part of the study organized by headings related to the research questions. In Chapter 5 the researcher will summarize the study and results, connect the research to theoretical framework, discuss implications and recommend further research.

Chapter 5: Conclusions and Recommendations

Introduction

This chapter presents a summary of the research in relation to themes and trends that were determined by the findings of the study. To continue, the chapter provides implications from the study and further research suggestions. The conceptual framework is the focus of the chapter. The researcher will make connections between the study and pre-existing research to come to conclusions.

Summary of Study

The study aimed to make connections between teacher views on professional development, the choice of the teacher to reinvent the intervention, and the impact these factors have on student outcomes. Teachers have long advocated to have opportunities that are a worthwhile use of their time and give them the flexibility within the intervention they need to support a wide variety of students with a range of abilities (Teachers Know Best: Making Data Work for Teachers and Students, 2015). The study looked closer at the results when teachers adapt the intervention they are provided as a form of professional development. Along with the factors that go into the choice whether to reinvent the intervention or work within the parameters set by the training.

The study consisted of 8 participants, these participants were teachers ages 24-54 years old, at least five years of teaching experience, and acquired a minimum of a four bachelor's degree in education from an accredited university. The participants took part in a professional development opportunity, the mentor training for the Check and Connect program. Following the mentor training, participants were paired with an at-risk student in grades 6-12. The students were included in the study to determine student outcomes. The student's data was reviewed from

marking period 4 of the 2022-2023 school year, pre-intervention, and marking period 1 of 2023-2024 school year, post-intervention. The data was used to determine student outcomes based on the research questions.

The participants were asked to take two surveys. The first survey was a two-part survey including a Likert scale 1-5, 1 being poor and 5 being excellent. They used the scale to respond to statements regarding their satisfaction with the professional development. The second part of the survey had open-ended questions regarding their views on the PD. The second survey contained open-ended questions regarding the choice to innovate the professional development training and the factors of the choices made regarding innovation. Themes were pulled from the responses from the teachers regarding professional development and innovation. These responses were rated as positive/negative and innovation/no innovation and compared to student outcomes to determine trends within the data.

Results

Teachers views of the professional development provided were positive for 7 out of the 8 participants. The research was surprised by these results. While it was great the teachers found the professional development to be a positive experience, it did not leave a large enough sample population size to allow for a conclusion to be drawn regarding teachers views of the professional development and the impact on student outcomes. Although, the comments made in the open-ended portion of the PD survey allowed for the researcher to find themes related to what teachers consider to be a positive professional development experiment. The comments included effective use of professional time, increased connections with students and families within the community, information was relevant to a wide variety of students they work with

outside of the students they mentor. The negative comment was in relation to the materials, the participant felt the training needed to be simplified.

The innovation survey provided insightful responses from the participants along with results allowing for conclusions to be made regarding the choice to innovate and student outcomes. Those who chose to innovate chose to innovate in the areas of the frequency they checked in on students, the type of data sheet they used to keep track of student information and providing reinforcement for student improvement. The reasons for making these innovations also varied and included keeping better track of their mentee, saving time, establishing connections with students, and promoting change in areas of trouble. Those who chose not to innovate stated lack of time as the main contributing factor.

The data allowed the researcher to make the general conclusion that the mentors who chose to make innovations to the intervention to fit the needs of their students had a positive impact on student outcomes. The students who worked with a mentor had growth in all areas the Check and Connect program monitors besides Math. Math was the outlier. The students who worked with a mentor who made interventions on average decreased in math by 3% while those who worked with a mentor who did not innovate increased their math grade percentage by an average of 0.3%.

Synopsis of Conceptual Framework

The study was based on the findings of Rogers (2003) conceptual framework specially Roger's theory of Re-invention known as the Innovation- Decision process, as shown in figure 1. The participants of the study demonstrated the Innovation-Decisions process model in action. Each step of innovation was outlined by the questions posed in the research surveys.

Knowledgeable was the first stage of the Innovation- Decision making process as outlined by Rogers. The stage includes the individual learning of innovation regarding the study of professional development. At this time the individual is uncertain about the cause-and-effect results of the innovation but is willing to gain knowledge on the topic. Each of the participants agreed to attend the professional development and learn more about the topic of mentoring being introduced (Rogers, 2003).

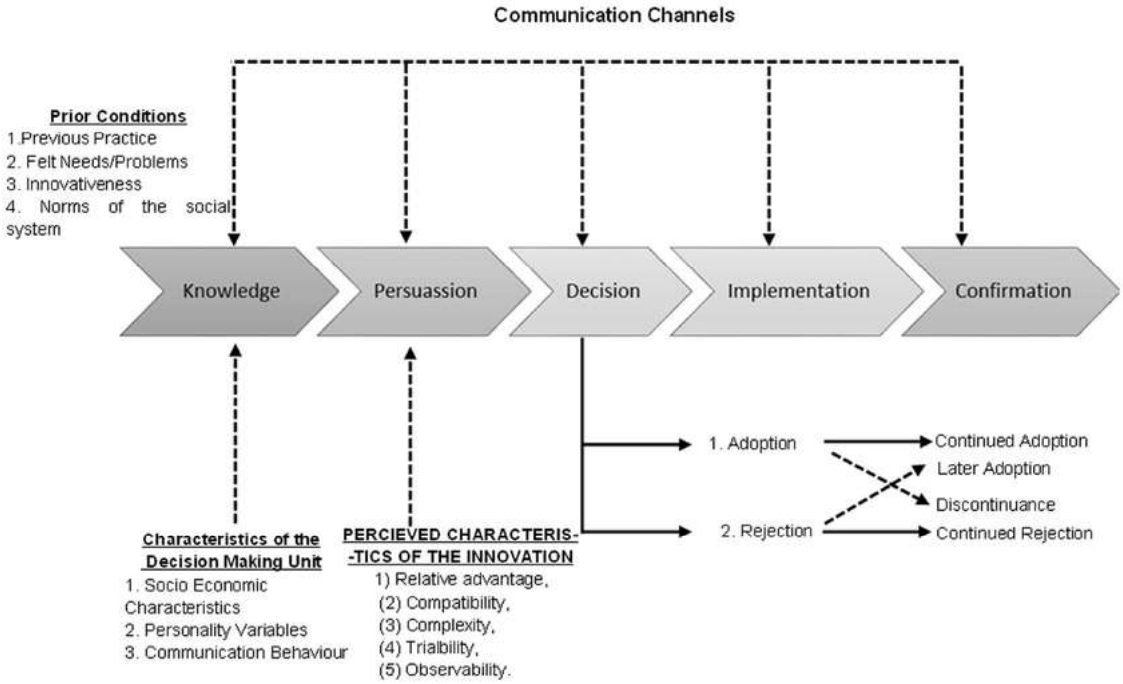
The persuasion stage begins when the innovation is introduced to the individual. In the case of the participants, it was the Check and Connect mentor training. At this point in time according to Rogers (2003), the participants began to develop an opinion on the intervention. They are beginning to think about adopting or not adopting the innovation (Rogers, 2003).

Decision, implementation, confirmation are the stages where the individual makes their final decision on whether to adopt the innovation or not. While all the participants did not choose to re-invent the professional development, all the participants did make the decision to use the innovation with the students they are mentoring (Rogers, 2003).

Following the innovation process the participants had the option to reinvent or adapt the innovation. Re-invention was defined by Rogers (2003), as, "the degree to which an innovation is changed or modified by a user on the process of adoption and implementation (p. 168). The participants had the opportunity to re-invent the innovations following the training. The decision to make these adaptations was mixed among the participants of the study.

Figure 1

Model of Rogers (2003) Five Stages in the Innovation-Decision Process



Themes

Adaptable Information in Professional Development

The majority (7 out of 8) of participants in the study gave the professional development training a high satisfaction rating of 88% or above. The main reason cited for their satisfaction was they found the information relevant to their students. They found the information to be helpful in more areas than just the students they would be mentoring. The research conducted by Fernandes et al., (2023) supports this theme. The teachers in the study reported they wanted a professional development that was going to have a practical component meaning the PD included application examples from different field areas and applications in specific contexts (Fernandes et al., 2023).

The teachers found value in the professional development providing them with strategies and background knowledge needed to interact with the families in their school communities. Lucilio (2009) research supports this finding. The teachers they worked with in their study said they found it to be obvious the need for families and educational professionals to work closely to ensure student success. The research then went on to discuss the indicators of student success. Among the top-rated indicators was, "the commitment, involvement, and participation of families in school as an indicator of the educational quality (Lucilio, 2009, p.22). The research supports the participants' desire to make connections with families.

The theme of adaptability from the study highlights the need for professionals to be able to utilize the PD chosen for them in areas that are relevant to them. The research conducted by Perry (2003) shows that even when schools are planning professional development the goals are not always teacher first. They are often not aligned with the teaching goals of the professionals within the school. The issue leaves teachers feeling as if the tools they are gaining from professional development are a waste of time and not a strategy they can use with their students.

Teachers beyond those in the study want training that allows them to reach the students they work with daily. They find gaps in the PD they are provided. Teachers have made it known in the research completed by Lucilio (2009) with the findings believing that experiences need to be specific to the areas they teach to improve student outcomes.

Sustainability of Professional Development

The teachers in the study often mentioned they did not feel they had enough time to reinvent the strategies they were taught to meet the needs of the students they are mentoring. The theme highlighted the lack of sustainability practices that go into professional development trainings being put into place. Research has shown teachers desire to have a program

implemented that can be used long term. The professional development calendar must be created to allow time to work with coaches, extended training sessions, and time availability to properly implement the interventions (Fernandes et al., 2023).

Planning needs to be a key part of professional development to ensure the sustainability of the innovation being taught. Teacher PD has been sold to increase teachers' knowledge and allow them to keep up with educational practices as they develop with the hopes staying current in practices will result in positive student outcomes. Although the research does not support the idea that schools are putting in the strategic planning needed to properly carry out the implementation of these practices. There is a gap with providing the training and implementing the intervention long-term (Parada-Ganete & Trillo-Alonso, 2023).

Leadership in a school is a determining factor in the sustainability of professional development practices. The leadership should be conducting due diligence and researching practices before they are introduced to teachers as PD. The PD provided should be heavy in meaningful professional learning experiences that will require time and well thought implementation. Research has shown benefits to using professional development practices that can be sustained. Teachers are eager to continue learning and improving practices when they know the intervention will be used in the school for a long time. They spend the time needed to collaborate with colleagues, meet with coaches and perfect their strategies (Darling-Hammond et al.,2017).

Implications for Future Research

The study showed a correlation between the participants choosing to reinvent the innovation and student outcomes. In five out of six areas, the students who worked with a mentor who reinvented the training showed improvement from one marking period to the other.

Teachers should consider reinventing professional development training to meet the needs of the students they work with in the education setting.

The study showed a correlation between the participants reinventing the innovation and the result of student outcomes along with reasons as to why participants chose to re-invent or not re-invent the innovation. More research is needed on a larger scale to determine if the hypothesis of students benefiting from re-invention of innovations stands with more participants.

The study found the theme of teacher's desire to have the time to devote to the intervention thought of when an innovation is presented. Further research is needed regarding the factors that go into the districts choice to choose an innovation as professional development. Do school districts consider what it takes to implement an innovation long term?

Although the study found correlation between student outcomes and the participants decision to re-invent. How will these numbers be impacted over a long time? Will the students maintain or continue to increase their performance based on the re-invention of the innovation? The study can be reframed as a longitudinal study to answer these questions.

The study was unable to make correlation between teacher's views on professional development and student outcome due to sample size. Research needs to be done to answer this question. A research study with multiple professional developments and a larger sample size could help to make these correlations.

Conclusion

The researcher was able to conduct a study that allowed for correlations to be made between re-invention of professional development and student outcomes. The students showed a positive correlation in 5 out of the 6 monitored areas. The researcher was able to come to these conclusions through the use of qualitative and quantitative research. The themes of the

importance of sustainability and adaptability in professional development were identified. The research provided implications for further practices and future studies. The results from this study can encourage reinvention to meet students' needs in future educational practice.

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Informed Consent Documents

CONSENT TO PARTICIPATE IN RESEARCH

EFFECTIVE PROFESSIONAL DEVELOPMENT IMPLEMENTATION AND THE OUTCOME ON STUDENT PROGRESS

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Invitation to be Part of a Research Study

Dear Participant,

I am asking you to participate in a research study titled "Effective Professional Development Implementation and the Outcome on Student Progress". To participate, you must be at least 18 years of age, a practicing teacher within Penns Manor Area School District, and hold a certificate of teacher from the Pennsylvania Department of Education (PDE). Taking part in this research project is voluntary. Although the researcher is a colleague, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and not impact personal or professional relations with the researcher.

Important Information about the Research Study

Things you should know:

- The purpose of this study is to use Rogers Diffusion Theory to determine how teachers' views on the quality of professional development presented affect teacher innovations and how their choices affect student outcomes. If you choose to participate, you will be asked to engage in a pre-and post-survey via Google form on your own time which must be completed within a week of the time the survey is presented. Each survey will approximately take a maximum of a half hour.

- Risks or discomforts from this research include breach of confidentiality and coercion; however, the researcher will take all proper steps to minimize the potential for risks and discomforts that participants of the study may encounter during this investigation.
- The study will offer no direct benefit; however, participants may feel a sense of accomplishment should outcome measures align with internal perceptions.
- Taking part in this research project is voluntary. You do not have to participate, and you can stop at any time. Further, it is acknowledged that you may feel obligated to participate based on the professional relationship with the researcher; however, please know that your non-participation in this project will not affect this professional relationship moving forward.

Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the Study About and Why are We Doing it?

The purpose of this study is to use Rogers Diffusion Theory to determine how teachers' views on the quality of professional development presented affect teacher innovations and how their choices affect student outcomes. A mixed-method research approach will be used to make relevant findings to alter teacher training and instruction. Additionally, evidence-based findings may be of significant interest to educational stakeholders, including school administrators, and district policy advisors, seeking to revise and refine school-based procedures and policies. Furthermore, data may potentially impact valuable methods of delivery of professional development practices relating to improved student outcomes.

What Will Happen if You Take Part in This Study?

If you agree to take part in this study, you will be asked to take part in two surveys. The first survey will be a standard professional development questionnaire created by the Pennsylvania Department of Education (PDE) adapted for Google Forms, and the second will be a post completion survey created by the researcher to determine the innovations the participant made to the presented professional development. Specific questions may include but are not limited to the following:

- What factors contributed to the teacher volunteering to participate in the Check and Connect professional development?
- How did teachers view Check and Connect professional development provided?
- What innovations were made by the teachers to make the professional development fit the student they are mentoring?
- What are the outcomes for the students when mentors chose to apply Check and Connect with fidelity based on the training?
- What are the outcomes for the students when mentors chose to innovate the professional development provided?

The survey should take an estimated time of a half hour for each survey. The survey will need to be completed within a one-week time frame from when the survey is presented to the participant at a convenient time. To preserve the integrity of the participant's responses, the survey can be completed outside of professional work hours.

How Could You Benefit From This Study?

The professional development that is chosen for educators may be affected positively by the results of the study. The results of the study may provide context for districts to determine when professional development opportunities are worthwhile to teachers and the impact that can have on student outcomes.

What Risks Might Result From Being in This Study?

You might experience some risks from being in this study. They are coercion, breach of confidentiality, and the possibility of negative emotions. There is minimal risk for coercion given the researcher's current level of employment as a certified special education teacher. However, all necessary measures will be taken to reduce the presence of coercive behaviors during asynchronous survey sessions. The professional relationship between the researcher and participant will not be affected by responses provided for the study. Although the researcher is a colleague, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and not impact personal or professional relations with the researcher. Additionally, to reduce the risk of

breach of confidentiality, qualitative data will be classified. Participants will not be explicitly identified.

How Will We Protect Your Information?

We plan to publish the results of this study. To protect your privacy, we will not include information that could directly identify you.

What Will Happen to the Information We Collect About You After the Study is Over?

We will protect the confidentiality of your research by not asking for any identifiable information. Any data will be stored on a password-protected laptop exclusively owned and utilized by the researcher and the results and survey can only be accessed by those who have directly been given the link. Any confidential data that is not for data analysis purposes will be deleted and/or destroyed. Specifically, email correspondence will be deleted from the server's "trash" folder and paper documentation will be shredded. If given, your name and any other information that can directly identify you will be stored separately from the data collected as part of the project.

What Other Choices do I Have if I Don't Take Part in this Study?

Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer. If you decide to withdraw prior to the completion of this study, then you may choose to have any provided data deleted or destroyed or you may allow the investigators to utilize the data for the good of the study. If you choose not to participate, there are no alternatives. There will be no consequences for choosing not to participate in this study.

Your Participation in this Research is Voluntary

It is totally up to you to decide to be in this research study. Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer. If you decide to withdraw before this study is completed, all prior responses and given information will be destroyed by the researcher not to be used under any circumstances. Although the researcher is a

colleague, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and not impact personal or professional relations with the researcher.

Contact Information for the Study Team and Questions about the Research If you have questions about this research, you may contact:

Dr. Christopher Tarr, Ed.D. | cwtarr@hotmail.com | 724-344-5869

Contact Information for Questions about Your Rights as a Research Participant

If you have questions about your rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

Institutional Review Board
Slippery Rock University
104 Maltby, Suite 302
Slippery Rock, PA 16057
Phone: (724)738-4846 Email: irb@sru.edu

Your Consent

Before agreeing to be part of the research, please be sure that you understand what the study is about. We will give you a copy of this document for your records upon request or you may print this "Informational Letter" and keep it for your files. If you have any questions about the study later, you can contact the study team using the information provided above.

I understand what the study is about, and my questions so far have been answered. I agree to take part in this study. I understand that I can withdraw at any time. You indicate your voluntary agreement to participate by completing and returning each of the surveys provided. Although the researcher is a colleague, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and not impact personal or professional relations with the researcher.

RESEARCH PARTICIPANT INFORMATIONAL LETTER

EFFECTIVE PROFESSIONAL DEVELOPMENT IMPLEMENTATION AND THE OUTCOME ON STUDENT PROGRESS

Dr. Christopher Tarr, Ed.D. | cwtarr@hotmail.com | 724-344-5869

Alison Decker, M.Ed. | axd1070@sru.edu | 724-980-7833

Invitation to be Part of a Research Study

Dear Participant,

I am asking you to participate in a research study titled "Effective Professional Development Implementation and the Outcome on Student Progress". To participate, you must be at least 18 years of age, a practicing teacher within Penns Manor Area School District, and hold a certificate of teacher from the Pennsylvania Department of Education (PDE). Taking part in this research project is voluntary. Although the researcher is a colleague, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and not impact personal or professional relations with the researcher.

Important Information about the Research Study

Things you should know:

- The purpose of this study is to use Rogers Diffusion Theory to determine how teachers' views on the quality of professional development presented affect teacher innovations and how their choices affect student outcomes. If you choose to participate, you will be asked to engage in a pre-and post-survey via Google form on your own time which must be completed within a week of the time the survey is presented. Each survey will approximately take a maximum of a half hour.

- Risks or discomforts from this research include breach of confidentiality and coercion; however, the researcher will take all proper steps to minimize the potential for risks and discomforts that participants of the study may encounter during this investigation.
- The study will offer no direct benefit; however, participants may feel a sense of accomplishment should outcome measures align with internal perceptions.
- Taking part in this research project is voluntary. You do not have to participate, and you can stop at any time. Further, it is acknowledged that you may feel obligated to participate based on the professional relationship with the researcher; however, please know that your non-participation in this project will not affect this professional relationship moving forward. Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the Study About and Why are We Doing it?

The purpose of this study is to use Rogers Diffusion Theory to determine how teachers' views on the quality of professional development presented affect teacher innovations and how their choices affect student outcomes. A mixed-method research approach will be used to make relevant findings to alter teacher training and instruction. Additionally, evidence-based findings may be of significant interest to educational stakeholders, including school administrators, and district policy advisors, seeking to revise and refine school-based procedures and policies. Furthermore, data may potentially impact valuable methods of delivery of professional development practices relating to improved student outcomes.

What Will Happen if You Take Part in This Study?

If you agree to take part in this study, you will be asked to take part in two surveys. The first survey will be a standard professional development questionnaire created by the Pennsylvania Department of Education (PDE) adapted for Google Forms, and the second will be a post completion survey created by the researcher to determine the innovations the participant made to the presented professional development. Specific questions may include but are not limited to the following:

- What factors contributed to the teacher volunteering to participate in the Check and Connect professional development?
- How did teachers view Check and Connect professional development provided?
- What innovations were made by the teachers to make the professional development fit the student they are mentoring?
- What are the outcomes for the students when mentors chose to apply Check and Connect with fidelity based on the training?
- What are the outcomes for the students when mentors chose to innovate the professional development provided?

The survey should take an estimated time of a half hour for each survey. The survey will need to be completed within a one-week time frame from when the survey is presented to the participant at a convenient time. To preserve the integrity of the participant's responses, the survey can be completed outside of professional work hours.

How Could You Benefit From This Study?

The professional development that is chosen for educators may be affected positively by the results of the study. The results of the study may provide context for districts to determine when professional development opportunities are worthwhile to teachers and the impact that can have on student outcomes.

What Risks Might Result From Being in This Study?

You might experience some risks from being in this study. They are coercion, breach of confidentiality, and the possibility of negative emotions. There is minimal risk for coercion given the researcher's current level of employment as a certified special education teacher. However, all necessary measures will be taken to reduce the presence of coercive behaviors during asynchronous survey sessions. The professional relationship between the researcher and participant will not be affected by responses provided for the study. Although the researcher is a colleague, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and not impact personal or professional relations with the researcher. Additionally, to reduce the risk of

breach of confidentiality, qualitative data will be classified. Participants will not be explicitly identified.

How Will We Protect Your Information?

We plan to publish the results of this study. To protect your privacy, we will not include information that could directly identify you.

What Will Happen to the Information We Collect About You After the Study is Over?

We will protect the confidentiality of your research by not asking for any identifiable information. Any data will be stored on a password-protected laptop exclusively owned and utilized by the researcher and the results and survey can only be accessed by those who have directly been given the link. Any confidential data that is not for data analysis purposes will be deleted and/or destroyed. Specifically, email correspondence will be deleted from the server's "trash" folder and paper documentation will be shredded. If given, your name and any other information that can directly identify you will be stored separately from the data collected as part of the project.

What Other Choices do I Have if I Don't Take Part in this Study?

Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer. If you decide to withdraw prior to the completion of this study, then you may choose to have any provided data deleted or destroyed or you may allow the investigators to utilize the data for the good of the study. If you choose not to participate, there are no alternatives. There will be no consequences for choosing not to participate in this study.

Your Participation in this Research is Voluntary

It is totally up to you to decide to be in this research study. Participating in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer. If you decide to withdraw before this study is completed, all prior responses and given information will be destroyed by the researcher not to be used under any circumstances. Although the researcher is a colleague, there is no obligation to participate in this study or feel pressured to withhold

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Dr. Christopher Tarr, Ed.D. | cwtarr@hotmail.com | 724-344-5869

Contact Information for Questions about Your Rights as a Research Participant

If you have questions about your rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

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Slippery Rock University
104 Maltby, Suite 302
Slippery Rock, PA 16057
Phone: (724)738-4846 Email: irb@sru.edu

Your Consent

Before agreeing to be part of the research, please be sure that you understand what the study is about. We will give you a copy of this document for your records upon request or you may print this "Informational Letter" and keep it for your files. If you have any questions about the study later, you can contact the study team using the information provided above.

I understand what the study is about, and my questions so far have been answered. I agree to take part in this study. I understand that I can withdraw at any time. You indicate your voluntary agreement to participate by completing and returning each of the surveys provided. Although the researcher is a colleague, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and not impact personal or professional relations with the researcher.

Approved
8/29/2023
Slippery Rock University
Institutional Review Board

PARENT/GUARDIAN CONSENT TO PARTICIPATE IN RESEARCH

EFFECTIVE PROFESSIONAL DEVELOPMENT IMPLEMENTATION AND THE OUTCOME ON STUDENT PROGRESS

Dr. Christopher Tarr, Ed.D. | cwtarr@hotmail.com | 724-344-5869

Alison Decker, M.Ed. | axd1070@sru.edu | 724-980-7833

Invitation to be Part of a Research Study

Your child is being invited to participate in a research study. For your child to participate, they must be in grades 6-12 and currently participate in the Check and Connect Mentor Program at Penns Manor Area Jr./Sr. High School. Taking part in this research project is completely voluntary.

Important Information about the Research Study

Things you should know:

- The purpose of this study is to use Rogers Diffusion Theory to determine how teachers' views on the quality of professional development presented affect teacher innovations and how their choices affect student outcomes.
- If you choose to allow your child to participate, their school records (grades, discipline, and attendance) from the fourth marking period of the 2022-2023 school year and the first marking period of the 2023-2024 school year will be reviewed to determine the outcomes of the Check and Connect mentor training on student outcomes.
- The study will have no risks or discomfort for your child from participation in the study.
- The study will allow school districts to make more informed decisions when selecting professional development opportunities for teachers.
- Taking part in this research project is voluntary. Your child doesn't have to participate, and they can stop at any time.

Please take time to read this entire form and ask questions before deciding whether to allow your child to take part in this research project.

What is the Study About and Why are We Doing it?

The purpose of this study is to use Rogers Diffusion Theory to determine how teachers' views on the quality of professional development presented affect teacher innovations and how their choices affect student outcomes. A mixed-method research approach will be used to make relevant findings to alter teacher training and instruction. Additionally, evidence-based findings may be of significant interest to educational stakeholders, including school administrators, and district policy advisors, seeking to revise and refine school-based procedures and policies. Furthermore, data may potentially impact valuable methods of delivery of professional development practices relating to improved student outcomes.

What Will Happen if Your Child Takes Part in This Study?

If you agree to allow your child to take part in this study, your child will not have any responsibilities regarding the study. The researcher will review your child's educational records and collect data on attendance, discipline, and grades. Your child will continue to participate in the Check and Connect Mentor Program without interruption following the completion of the study.

How Could Your Child Benefit From This Study?

Your child might benefit from being in this study because the teachers in the Penns Manor Area School District may have greater opportunities to access professional development opportunities that will be focused on providing training directly related to increasing their skills to support the students in the district both in academics and other areas of the school system increasing student success.

What Risks Might Result from Being in This Study?

There are minimal risks to your child participating in the study, the only identified risks are a breach of confidentiality and coercion due to the researcher being a teacher at the school district the student attends. However, all necessary measures will be taken to reduce the presence of coercive behaviors during the study. The relationship between the researcher and student will

not be affected by responses provided on this form nor the assent form provided to the student. Although the researcher is a teacher of the student, there is no obligation to participate in this study or feel pressured to withhold withdrawing from the study at any time. All matters will be handled professionally and will not impact on relations with the researcher. To reduce the risk of breach of confidentiality, qualitative data will be classified. Participants will not be explicitly identified.

How Will We Protect Your Child's Information?

I plan to publish the results of this study. To protect your child's privacy, I will not include any information that could directly identify your child. I will protect the confidentiality of your child's research records by keeping all documents on a password-protected computer only the researcher has access to. Your child's name and any other information that can directly identify your child will be stored separately from the data collected as part of the project.

What Will Happen to the Information We Collect About Your Child After the Study is Over?

I will not keep your child's research data to use for future research or other purposes. Your child's name and other information that can directly identify your child will be kept secure and stored separately from the research data collected as part of the project.

What Other Choices does Your Child Have if They Don't Take Part in this Study?

If you choose to not permit your child to participate, there are no alternatives.

Your Child's Participation in this Research is Voluntary

It is totally up to you and your child to decide to be in this research study. Participating in this study is voluntary. Even if you or your child decide to be part of the study now, you both may change your mind and stop at any time. Your child does not have to answer any questions they do not want to answer. If your child decides to withdraw before this study is completed all information collected previously will be destroyed and not used as part of the study.

Contact Information for the Study Team and Questions about the Research

If you have questions about this research, you may contact:

Dr. Christopher Tarr, Ed.D. | cwtarr@hotmail.com | 724-344-5869

Contact Information for Questions about Your Child's Rights as a Research Participant If you have questions about your child's rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

Institutional Review Board

Slippery Rock University

104 Maltby, Suite 302

Slippery Rock, PA 16057

Phone: (724)738-4846

Email: irb@sru.edu

Your Consent

By signing this document, you are agreeing to allow your child to be in this study. Make sure you understand what the study is about before you sign. I/We will give you a copy of this document for your records. I/We will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read this consent form and I understand what is being requested of my child as a participant in this study. I freely consent for my child to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

_____

Name of Child (Printed)

_____	_____	_____
Printed Parent/Guardian Name	Signature of Parent/Guardian	Date

By signing below I indicate that the parent/guardian has read and, to the best of my knowledge, understands the details contained in this document and have been given a copy.

_____	_____	_____
Principal Investigator's Printed Name	Principal Investigator's Signature	Date

Approved
8/29/2023
Slippery Rock University
Institutional Review Board

VOLUNTEER ASSENT TO PARTICIPATE IN RESEARCH

EFFECTIVE PROFESSIONAL DEVELOPMENT IMPLEMENTATION AND THE OUTCOME ON STUDENT PROGRESS

Dr. Christopher Tarr, Ed.D. | cwtarr@hotmail.com | 724-344-5869

Alison Decker, M.Ed. | axd1070@sru.edu | 724-980-7833

We want to tell you about a research study we are doing and see if you want to take part in it. Research is a way to learn more about something.

The name of this study is:

EFFECTIVE PROFESSIONAL DEVELOPMENT IMPLEMENTATION AND THE OUTCOME ON STUDENT PROGRESS

The researchers are:

Dr. Christopher Tarr, Ed.D.

Miss Alison Decker, M.Ed.

It is okay to ask questions about what we are telling you. You can circle or highlight things on this paper you want to know more about. If you don't understand something, just ask us. We want you to ask questions now and anytime you think of them.

We are working on how the educational opportunities that are presented to teachers and how they present them to students affect how well students do in school.

You are being asked to be in this research study because reviewing your progress will help the researchers determine if the education opportunities the teachers are receiving are helpful to students.

For you to be in this study both you and your parent (or guardian) must agree to you being in it. It is the adult's job to make sure being in this study is okay for you. But it is still up to you if you *want* to do it.

Parents and children say "no" for different reasons. It may be that you would miss too many activities or school. Whatever the reason, it is your decision. You will not be treated any differently if you say "no.

If you decide to be in this research and your parent or guardian says yes, this is what will happen:

We will look at your school records (grades, attendance, and discipline) from the fourth marking period of the 2022-2023 school year and the first marking period of the 2023-2024 school year to determine if participating in the Check and Connect Mentor program was beneficial to you. You will not have to participate in this study in any other manner.

Some of the ways you could be helped are:

Your teachers will be provided with better learning opportunities allowing them to have more skills to support you in the classroom to help you succeed at school.

We do not know for sure if you will be helped by being in this study, but the results of this study can help teachers have access to educational opportunities that will allow them to support students in the future.

You don't have to be in this study if you don't want to. Nobody will be mad at you if you don't want to be in the research study. You can say okay now, and you can change your mind later. Just tell the researcher or your parent/guardian if you want to stop at any time.

Signature:

I have read this form, or someone has read it to me. If I did not understand something, I asked the researcher to explain it to me. I can always ask a question about the study if I don't understand something. I will be given a copy of this form.

Please check one box:

☐ **YES,** I want to be in this study, and I know I can change my mind later.

☐ **NO**, I do not want to be in this study.

_____

Child's Name(print)

Child's Signature: _____

Date of signature: _____

The following should be completed by the Principal Investigator conducting the assent process if the child agrees to be in the study. Check all that apply.

☐ The child is capable of reading and understanding the assent form and has signed above as documentation of assent to take part in this study.

☐ The child is not capable of reading the assent form, but the information was verbally explained to him/her. The child signed above as documentation of assent to take part in this study.

☐ The child had ample opportunity to have his or her questions answered.

Printed name of
Principal Investigator:

Signature of Principal
Investigator:

Date of signature:

APPENDIX A

REFERENCE LIST

Kagan, D. (1988). How Do Teachers Define Students at Risk? *The Clearing House*, *61*(7), 320–324. http://www.jstor.org/stable/30188354

Orr, G. (2003). Diffusion of innovations, by Everett Rogers (1995). *Retrieved January 21*, 2005.

Rogers, E. M. (2003). Diffusion of innovations. New York: Free Press.

APPENDIX B

LETTER TO POENTIAL PARTICIPANTS (Email to Participants)

SLIPPERY ROCK UNIVERSITY
1 Morrow Way
Slippery Rock, PA 16057

Dear Colleagues,

My name is Alison Decker, and I am currently a Special Educational teacher here at Penns Manor Area School District, Clymer, PA. I am also pursuing my Doctorate in Education, with a concentration in Special Education, at Slippery Rock University with Dr. Christopher Tarr. My topic is **Effective Professional Development Implementation and the Outcome on Student Progress**. I am looking to complete the study to increase the knowledge of the factors that lead to teachers implementing a professional development with fidelity and how teacher buy-in affects student outcomes.

I will be providing an adapted version of the Pennsylvania Department of Education Professional Development survey and a follow up survey created by the researcher. All surveys will be sent to participants via Google Forms. The participants will be individuals who have been trained in the Check and Connect Mentor Program professional development and are employed by the Penns Manor Area School District. They will mentor students in grades 6-12 who have been identified as an "at-risk" student based on the criteria presented by the program. The survey should take a maximum of a half hour to complete per survey. You will be asked to identify yourself on the survey ONLY to make connections between mentors and mentees. No names or identifying information will be used in the presentation of the survey. Only the researchers will have access to this information. It will be kept confidential.

If you have any questions, please feel free to email me at axd1070@sru.edu. I look forward to hearing from you and thank you in advance for your willingness to participate in this study!

Sincerely,
Alison Decker, M.Ed.
Candidate for Doctor of Education, Concentration in Special Education
Slippery Rock University of Pennsylvania

Appendix C.1

Professional Development Survey

Adapted from: Pennsylvania Department of Education Professional Development Survey for Educators and School Leaders

(2021, May). *Professional Development Survey for Educators and School Leaders* [Review of *Professional Development Survey for Educators and School Leaders*]. Www.educate.pa.gov; Pennsylvania Department of Education . https://www.education.pa.gov/Documents/Teachers-Administrators/Act%2048-PERMS/Professional%20Development%20Survey%20for%20Educators%20and%20School%20Leaders.pdf

* Indicates required question

1. Email *

Participant Satisfaction

Please respond to each item by selecting the number which best describes your opinion (5=excellent; 1=poor).

2. Course/Activity was well organized *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

Professional Development Survey

3. Course/Activity objective were clearly stated *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

4. Course/Activity assignments were relevant to Course/Activities Objectives *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

5. All necessary materials/equipment, and resources were provided or made readily available *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

6. Overall Instructor Performance *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

Impact on Professional Development

Please respond to each item by selecting the number which best describes your opinion (5=excellent; 1=poor).

7. This activity enhanced the educator's/ school leader's content knowledge in the area of certification. *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

8. This activity increased the educator's/school's teaching skills based on research of effective practice. *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

9. This activity provided information on a variety of assessment skills. *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

10. This activity provided skills needed to analyze and use data in decision-making for instruction or at all levels of the school system. *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

11. This activity empowered participants to work effectively with parents and community partners to engage others to pursue excellence in learning. *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

12. This activity provided the participants with the knowledge and skills to think strategically and understand standards-based school reform. *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

13. This activity enhanced the participant's professional growth and deepened your reflection and self-assessment of exemplary practices. *

Mark only one oval.

- 1
- 2
- 3
- 4
- 5

Comments

Please take a few moments to respond to the following questions.

14. What information was of most value to you as a mentor? *

15. Did you find this professional development to be a good use of your professional time? Why or why not? *

16. What suggestions do you have to improve this activity? *

17. Any additional comments: *

Appendix C.2
Follow-Up Innovation Survey

Follow-up Innovation Survey

* Indicates required question

1. Email *

2. Did you make any innovations to the original mentor guidelines that were presented * during the Check and Connect training?

3. If yes, what innovations did you make? *

4. Why did you choose to make this innovation? *

5. Did you find the innovation to be effective? *

6. Are there any other innovations you would have liked to make but did not due to other factors? *

7. If you did not make an innovation but could change one thing about the mentoring program, what would it be? *

8. Comments on overall experience as a mentor: *

Appendix C.3
Student Data Sheets

Marking Period 4
2022-2023 School Year

Student Identifier	# of Days Missed (Attendance)	# of Discipline Infractions	Science Final Grade	Math Final Grade	History Final Grade	English Language Arts Final Grade

Marking Period 1
2023-2024 School Year

Student Identifier	# of Days Missed (Attendance)	# of Discipline Infractions	Science Final Grade	Math Final Grade	History Final Grade	English Language Arts Final Grade

APPENDIX E

DISTRICT RECRUITMENT LETTER AND CONSENT FORM

SLIPPERY ROCK UNIVERSITY
1 Morrow Way
Slippery Rock, PA 16057

DISTRICT RECRUITMENT LETTER AND CONSENT FORM

Penns Manor Area School District
Jr./Sr. High School Principal
Attention: Michelle Dolges

I am writing to request permission to conduct a research study within Penns Manor Area School District. I am currently enrolled in Slippery Rock University's Doctor of Education in Special Education Program and am in the process of completing my dissertation.

The study is entitled: **EFFECTIVE PROFESSIONAL DEVELOPMENT IMPLEMENTATION AND THE OUTCOME ON STUDENT PROGRESS**

The purpose of this study is to use Rogers Diffusion Theory to determine how teachers views on the quality of professional development presented effect teacher innovations and how their choices affect student outcomes. A mixed- method research approach will be used to make relevant findings to alter teacher training and instruction. Additionally, evidence-based findings may be of significant interest to educational stakeholders, including school administrators, district policy advisors, seeking to revise and refine school-based procedures and policies. Furthermore, data may potentially impact valuable methods of service delivery of professional development practices relating to improved outcomes for students.

I hope that the school administration will allow me to recruit Penns Manor Area School District Qualifying Check and Connect trained mentors to the premise of the investigation. Interested mentors who volunteer to participate will be given a consent form to be signed/checked and returned to the researcher prior to the onset of the survey process (copy enclosed).

The two-survey study includes a post professional development questionnaire created by The Pennsylvania Department of Education and a follow-up end of the year survey containing seven open ended questions. Additionally, in order preserve the integrity of the participants response, these survey sessions can occur outside of professional work hours.

If approval is granted, please add district letterhead, and signature to an approval letter and return it via email. Do not hesitate to reach out regarding questions and/or concerns. I look forward to hearing from you soon.

With Appreciation,
Alison Decker
Axd1070@sru.edu

Appendix E.1

Penns Manor Area School District

6003 Route 553 Highway • Clymer, Pennsylvania 15728-8318
Phone 724-254-2666 • Fax 724-254-3418

SITE SPECIFIC AUTHORIZATION TO CONDUCT RESEARCH

Date: 3/29/23

Dear Institutional Review Board:

The purpose of this letter is to inform you that I give Alison Decker permission to conduct the research titled at **Effective Professional Development Implementation and the Outcome on Student Progress** at Penns Manor Area Jr/Sr. High School, under the assumption that the data will be coded to eliminate the risk of disclosure of identifiable information for the research to be released. This also serves as assurance that this school complies with requirements of the Family Educational Rights and Privacy Act (FERPA) and will ensure that these requirements are followed in the conduct of this research.

I understand that Alison Decker will receive consent for all participants. Alison Decker has agreed to provide my office a copy of all IRB-approved, stamped consent documents before she recruits participants on site. Any data collected by Alison Decker will be kept confidential and will be stored and destroyed securely. Alison Decker has agreed to provide to us a copy of the aggregate results from her study.

Sincerely,

Michelle Dolges

Michelle Dolges

Penns Manor Area Jr./Sr. High Principal

An Equal Opportunity Employer

Appendix F

SlipperyRock University of Pennsylvania

Exempt Research Category 1 Appendix

When conducting research that falls within exempt category 1 as identified in the specific criteria and limitations according to 45 CFR 46.104		
1.	Please explain why your research will not adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. The research will not adversely impact students' opportunity to learn because the surveys being distributed are filled out by the participants, not the students. The participants are asked to fill out the surveys on their own time, not during the time they are providing students with educational content. To protect the privacy of the students, teachers will be asked not to share any sensitive confidential information or information that can directly identify the students in the open-ended responses for the surveys. To ensure the protection of any student information that may be shared, those results will not be published. The researcher will ask about the participant's views, not the students. This research will not adversely impact the assessment of educators who provide instruction because they will not be graded or scored based on their responses and will not affect their overall evaluation of instruction. Participating in the research will have no impact on student learning, or the assessment of the teachers, participation in this study is completely voluntary. Participants will be submitting their responses anonymously. There will be no personal, identifiable information collected from the participants, nor will the investigator try to contact or identify the participants. Findings will be shared with the district, which may alter teacher training, instruction, and methods of service delivery, but the investigator is not implementing any methods or practices for teachers or students to use at this time.	
2.	Will the research occur outside of commonly accepted educational settings?	☑ No ☐ Yes – **STOP, the research does not qualify for exempt Category #1; submit under Expedited Review**
3.	Will any research methods deviate from normal educational practices?	☑ No ☐ Yes - **STOP, the research does not qualify for exempt Category #1; submit under Expedited Review**
If after completing this appendix you have determined that your research does qualify for an exempt review under this category, please fill out the Protocol Application Form found on the IRB website under Forms (http://www.sru.edu/offices/institutional-review-board/how-to-apply-to-the-irb) and submit this appendix with your protocol. You can receive submission guidance by emailing your questions to irb@sru.edu.		

Revised August 2021

SlipperyRock University of Pennsylvania

APPENDIX G

INFORMED CONSENT CHECKLIST

Informed Consent Checklist

- Used the template on the SRU IRB website
- The first page is printed on SRU department letterhead
- The heading "CONSENT TO PARTICIPATE IN RESEARCH" is written at the top of the page
- The title of the study is at the top of the first page of the consent form and is identical to the title used on the protocol application form
- The investigator name(s) and office telephone number(s) are included. (Names are written as: First Name, Last Name, Degree(s))
- Written in age-appropriate language
- If more than one page, include an initial line on the bottom right-hand corner for pages other than signature page.
- Page numbers on document included (Page numbers **ONLY** refer to the informed consent, not the entire proposal.) Written in the form "Page X of Y"