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Special Education Teachers' Self-Efficacy During the Times of a Global Pandemic

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SPECIAL EDUCATION TEACHERS' SELF-EFFICACY DURING THE TIMES OF A GLOBAL PANDEMIC

A Dissertation

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ABSTRACT

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This quantitative dissertation aims to describe and compare the perception of special education teachers' self-efficacy amid the COVID-19 pandemic using the practice of distance and their self-efficacy pre-pandemic using face-to-face instruction and describe the perceived valuable supports teachers received from educational leaders during the pandemic and considered valuable. The study population includes special education teachers teaching in inclusive settings before and during the pandemic in grades 6–12 in districts located in South Texas. The current study's data was analyzed using a two-way factorial analysis of variance, with both factors including repeated measures within subjects (2 x 3). A descriptive statistical analysis was also conducted to show how teachers felt supported and how much they valued the professional development opportunities they got during the COVID-19 pandemic while they were teaching using distance learning. The three hypotheses presented in the study were validated. The results indicated a difference between face-to-face and distance learning modes of instruction. Furthermore, the study found a difference among the self-efficacy domains and interactions between modes of instruction and self-efficacy domains. The outcomes of this dissertation contribute to the limited amount of research conducted in the field of special education teachers' perceptions of their self-efficacy levels while employing distance learning.

DEDICATION

"La gloria del mundo es transitoria, y no es ella la que nos da la dimensión de nuestra vida, sino la elección que hacemos de seguir nuestra Leyenda Personal, tener fe en nuestras utopías y luchar por nuestros sueños"- Paulo Cohelo

Primero que nada, quiero dedicar este trabajo a Dios que con su infinito amor estuvo presente en cada una de las etapas de este viaje. Este logro no hubiese sido posible sin el apoyo de mi amada familia. A mi querido esposo y compañero de vida, Alan gracias por tu amor incondicional, por apoyar mis sueños y estar ahí en los momentos difíciles, te amo con todo mi corazón. To my beloved children, Alan and Ivanna, you are my biggest inspiration, the force behind my dreams. I hope this success reminds you that you can accomplish anything you desire through hard work, dedication, and passion. I love you both more than you can ever imagine! A mis queridos padres Artemio y Vicky, gracias por ser el ejemplo que me ha motivado a vivir mi vida con fuerza e integridad. Papi gracias por inculcarnos el espíritu de lucha y valor, por tu sabiduría y entereza. Mami gracias por tus consejos y tu apoyo, por tu calidez, eres la mejor mujer del mundo. Mis padres sin duda han sido un pilar de amor y motivación. No tengo palabras para agradecerles todo lo que han hecho por mí. A mis hermanos Sergio, Artemio (†), Miguel Ángel y mis sobrinos los quiero con todo el corazón. A mis queridos suegros Luis y Yolanda y mis cunados, gracias por siempre apoyarme y quererme. Thank you to my dear friends that drove my kids around when I was in school, and supported me through thick and thin, Annette, Janette and Karla, you are family

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CHAPTER I

INTRODUCTION

In 2020, the COVID-19 pandemic had a significant impact on schools and educational systems around the world. As a measure to mitigate the highly contagious virus, schools at a global scale adopted school-closures, creating multiple and diverse challenges for educators, families, and students (Canzi et al., 2021; Chandasiri, 2020; Esposito et al., 2021; Hawrilenko et al., 2021; Hoffman & Miller, 2020; Kishida et al., 2021; Nusser, 2021; Pfefferbaum, 2021; Parmigiani et al., 2020; Robinson et al., 2020; Tang et al., 2021;) Current literature delineates essential challenges faced by students during school closures, including the increase of mental health concerns, lack of academic progress, and, in some cases, nutritional issues due to food insecurity (Asbury et al., 2020; Esposito et al., 2021; Greenway & Eaton-Thomas, 2020; Hawrilenko et al., 2021; Hoffman & Miller, 2020; Khlaif et al., 2020; Kishida et al., 2021; Pfefferbaum, 2021; Serlachius et al., 2020; Tang et al., 2021) Furthermore, parents faced diverse challenges associated with the pandemic-induced school closures, including the adoption of new roles at home to support their children through distance learning, stress-related disorders, and financial difficulties (Abuhammad, 2020; Agaton & Cueto, 2021; Asbury et al., 2020; Castro-Kemp & Mahmud, 2021; Canzi et al., 2021; Fontanesi et al., 2020; Ogurlu et al., 2020; May et al., 2021).

The adopted school closures to mitigate the spread of this highly contagious virus and the rapid decision to move toward distance learning, presented teachers with significant challenges, including the rapid transition to a different way of teaching (Chandasiri, 2020; Nusser, 2021; Parmigiani et al., 2020; Rasmitadila et al., 2020; Reimers, 2021; Robinson et al., 2020; Supratiwi et al., 2021; Tarkar, 2020; Viner et al., 2020; Yamamura & Tsustsui, 2021). The practice of this mode of instruction significantly impacted special education teachers' self-efficacy during the pandemic (Lindner et al., 2021; Maurer et al., 2021; Smith, 2021; Supratiwi et al., 2021; Toquero, 2021). Researchers delineate the importance of studying and fostering teachers' self-efficacy, as it positively correlates to student performance, behavior, motivation, and other educational domains involved in students' success (Bandura et al., 1997; Moran, Hoy, & Hoy, 1998; Pajares, 1996).

This quantitative dissertation examined how special education teachers feel about their ability to teach students with special needs using face-to-face instruction before the COVID-19 pandemic and distance learning during it. This analysis adds to the body of knowledge by describing the possible differences that COVID-19 had on special education teachers' self-efficacy. Furthermore, the study may guide future professional development to enhance special education teachers' self-efficacy, which can impact students' success.

Scholars have studied self-efficacy in multiple contexts in special education (Combee, 2014; Wood, 2017). However, the COVID-19 pandemic and the use of distance learning have presented new contexts yet to be explored. Therefore, a literature gap exists in the area. This dissertation presents the groundwork to establish the framework to understand, conduct, and analyze special education teachers' self-efficacy under the mode of distance learning.

Statement of the Problem

In 2019, a highly infectious disease called COVID-19 affected more than 537 million people and caused more than 6.3 million deaths (World Health Organization [WHO], 2021). As a result, worldwide educational institutions were forced to interrupt fact-to-face instruction to mitigate the spread of this deadly virus (Abuhammad, 2020; Agaton & Cueto, 2021; Asbury et al., 2020; Börnert-Ringleb et al., 2021; Castro-Kemp & Mahmud, 2021; Canzi et al., 2021; Dolighan Reimers, 2021; Fontanesi et al., 2020; Ogurlu et al., 2020; May et al., 202). The school closures worldwide presented special education teachers with the challenge of educating and preparing students to meet rigorous academic standards through distance learning (Börnert-Ringleb et al., 2021; Supratiwi et al., 2021; Tremmel et al., 2020). The COVID-19 conditions and expectations impacted teachers' self-efficacy to educate students with disabilities receiving special education services (Maurer et al., 2021; Tremmel et al., 2020; Williams, 2020). The United States government and the states' education agencies have emphasized the need for a rigorous accountability system with high standards for all students (Every Student Succeeds Act, 2015). Some scholars have attributed student success and teacher effectiveness to multiple factors across time, such as effective bureaucratic school structures (as cited in, Woolfolk & Hoy, 1990), teacher professionalism (Cerit, 2013), or the implementation of a classical education approach that supports the idea that regardless of learning styles students can successfully learn as they go through the three developmental stages of grammar/knowledge, logic/understanding, rhetoric/wisdom (Sayers,1979). However, a prominent group of researchers continues to point to teacher self-efficacy as one of the most significant elements that can positively impact teacher effectiveness and student success (Bandura, 1977; Bandura et al., 1997; Bray-Clark & Bates,

2003; Holzberger et al., 2013; Mojavezi & Tamiz, 2012; Shahzad & Naureen, 2017; Shaukat & Iqbal, 2012; Tai et al., 2012; Veronika et al., 2018).

Purpose of the Study

Teachers' self-efficacy has been described as a fundamental predictor of academic and behavioral outcomes of students, including those in special education (Bandura et al., 1997). Therefore, many studies have explored this concept as it relates to specific domains in special education, such as the referral process, teacher attrition, and attitudes about inclusion practices, among many others (Adebomi et al., 2012; Chu, 2011; Francois, 2020; Guo et al., 2014; Hernandez et al., 2016; Nuri et al., 2017; Sariçam & Sakis, 2014; Skaalvik & Skaalvik, 2010; Tzivinikou, 2015). Researchers continue to support the idea that teachers' self-efficacy substantially impacts their ability to implement effective inclusion strategies that will positively impact students in special education (Özokcu, 2017; Paneque & Barbetta, 2006; Sharma et al., 2012). Differing from these beliefs, other researchers claim that other factors such as policies, practices, assumptions, and a culture of equity are the ones responsible for the success of students in special education (Gartner & Lipsky, 1987; Skrtic, 1991).

This quantitative dissertation aimed to describe and compare the perception of special education teachers' self-efficacy amid the COVID-19 pandemic using the practice of distance and their self-efficacy pre-pandemic using face-to-face instruction and describe the valuable support teachers received from educational leaders during the pandemic. This work aims to add to the body of knowledge on special education teachers' self-efficacy. Additionally, the researcher pursues to add to the data bank of special education self-efficacy related to distance learning during a global pandemic. The goal of conducting this descriptive comparative research

within subjects is to identify similarities and differences between mode of instruction conditions across the domains of classroom management, student engagement, and instructional practices. Moreover, the researcher aims to delineate the support provided during the pandemic by educational leaders considered valuable as perceived by special education teachers.

Need for the Study

A compelling body of empirical evidence indicates that teachers' self-efficacy is linked to student success (Bandura, 1997; Zee & Koomen, 2016). In contrast, other scholars attribute student success to multiple factors other than teachers' self-efficacy, such as collaboration, specialized interventions, and behavior support (Dexter et al., 2008; Hernandez, 2013). Self-efficacy in special education has been studied in multiple domains; however, the pandemic-induced school closures created a context that has yet to be thoroughly explored (Glessner & Johnson, 2020). Nevertheless, considerable evidence has led scholars to suggest that Bandura's self-efficacy theory also applies to special education teachers (Bradshaw & Mundia, 2006; Paneque & Barbetta, 2006; Tschannen-Moran & Hoy, 2001; Viel-Ruma et al., 2010; Wertheim & Leyser, 2002). Additionally, researchers have explored the concepts of teachers' self-efficacy in distance learning (Dolighan & Owen, 2021; Haverback, 2020). However, less evidence can be found that explicitly explores special education teachers' self-efficacy in distance learning.

Furthermore, a research gap exists in the area if the context of a global pandemic is added, despite much discussion about self-efficacy. For example, limited research can be found comparing special education teachers' self-efficacy while teaching traditional face-to-face pre-pandemic instruction modes to their self-efficacy during the pandemic-induced distance learning.

Additionally, the body of knowledge comparing self-efficacy in classroom management, student engagement, and instructional practices for special education is also limited.

Although new studies continue to emerge, the empirical research on self-efficacy in the context of distance education as it relates to the domains of self-efficacy remains an area that has yet to be explored thoroughly for special education teachers. Finally, research on supports that teachers considered valuable during the pandemic while implementing distance learning is needed to better aid educational leaders and practitioners in understanding teachers' perceptions and adding to the knowledge in the area.

Research Questions

The following questions guided the collection, analysis, and interpretation of data of this study:

RQ1: Is there a difference in modes of instruction between face to face pre-pandemic and distance learning during the pandemic?

RQ2: Is there a difference in special education teachers' self-efficacy in the domains of student engagement, instructional strategies, and classroom management?

RQ3: Is there an interaction between the modes of instruction and self-efficacy domains?

RQ4: What supports including professional development did special education teachers received and considered valuable during the COVID-19 pandemic when using distance learning?

Significance of the Study

Teacher's-efficacy has emerged as a significant predictor of student achievement in multiple domains (Bandura, 1997; Skaalvik & Skaalvik, 2010). Therefore, it is essential to delineate self-efficacy as part of Bandura's Social Cognitive Theory, defined as teachers' beliefs about their abilities to perform the responsibilities, commitments, and challenges associated with their profession (Bandura, 1997). Furthermore, these domain-specific beliefs may significantly relate to students' outcomes, so understanding them is crucial to further education (Bandura, 1999). Therefore, the findings of this study are intended to create awareness and add to the body of knowledge on special education teachers' self-efficacy during distance learning. The significance of adding to the body of knowledge and creating awareness is to elicit future research that can be used to develop proactive plans of action that can be adopted in the future to address the challenge of educating special education students using distance learning.

This dissertation delineates and describes how special education teacher self-efficacy relates to student engagement, instructional strategies, and classroom management. Additionally, using a 2 x 3 factorial design, the author presents a series of comparisons among the conditions of face-to-face and distance learning as they relate to the domains of self-efficacy that were measured. The significance of this work is delineated in the author's attempt to add to the body of knowledge on self-efficacy by either presenting results supporting the social cognitive theory and teacher self-efficacy. In addition, the author aims to help other researchers, educational leaders, and practitioners better understand how teachers interpret their self-efficacy beliefs when conducting tasks related to special education functions through distance learning in a global pandemic.

Finally, the author aims to add to the significance of this dissertation by presenting a description of the perception special education teachers had regarding the value of leadership support and professional development opportunities they received during the pandemic.

Limitations and Delimitations and Assumptions

Limitations

This study presented a significant limitation. The districts that participated might had different levels of internet access and resources during distance learning. Access to the proper resources needed to deliver distance learning can be influential in the perception of teachers' self-efficacy. Additionally, the study included the perspective of only secondary special education teachers. Consequently, to generalize the results to other educational levels, future research is recommended to include elementary special education teachers, as their perceptions might differ from those to be explored in this study.

Delimitations

In this study, delimitations arise due to the location of the school districts participating in the study and their background. The teachers in this study represented only one regional area in South Texas. The districts in the regional education area selected have a considerably high percentage of students classified as economically disadvantaged. Furthermore, the number of students at risk of not graduating is exponentially high compared to other Texas educational regions. These local factors can affect the study's generalizability. Additionally, the grade levels selected only included secondary special education teachers. This exclusive selection can risk the study's generalization to elementary settings.

Assumptions

Assumptions that were made during the study include the belief that each research participant holds a valid Texas certification and has received training in the area of special education. Secondly, the assumption that all research participants had experience teaching students receiving special education services pre and during the COVID-19 pandemic was made. Lastly, this study included teachers and relied upon their perceptions to help determine their sense of self-efficacy. Since confidentiality was provided during the study, it was expected that participants who were given these disclosures were forthright and truthful. This assumption can impact the reliability and validity of the study.

Definitions of Terms

For the purpose of the study, specific key terms are gathered and defined by certain sources for theoretical constructs within the study:

Asynchronous distance learning. A general term used to describe forms of education, instruction, and learning that do not occur in the same place or at the same time. The term is most commonly applied to various forms of digital and online learning in which students learn from instruction that is not being delivered in person or in real-time (The Glossary of Education Reform, 2022).

COVID-19: A is an infectious disease caused by the SARS-CoV-2 virus (World Health Organization, n.d.).

Disability: A person with a disability is a person who has a physical or mental impairment that substantially limits one or more major life activity (Americans With Disabilities Act, 1990).

Distance learning: A form of education in which the main elements include physical separation of teachers and students during instruction and the use of various technologies to facilitate student-teacher and student-student communication (Simonson & Berg, 2016).

IDEA: the used to describe The Individuals with Disabilities Education Act is the federal law that outlines rights and regulations for students with disabilities in the United States who require special education. Under the IDEA, all children with disabilities are entitled to a Free Appropriate Public Education (FAPE) (Individuals with Disabilities Education Act, 20 U.S.C. § 1400, 2004).

Individualized Educational Plan (I.E.P.): A plan or program developed to ensure that a child with a disability identified under the law and attending an elementary or secondary educational institution receives specialized instruction and related services (Individuals with Disabilities Education Act, 2004).

Pandemic: An epidemic occurring worldwide, or over an extensive area, crossing international boundaries and usually affecting a large number of people (Kelly, 2011)

Self-Efficacy: Teachers' beliefs in their ability to organize and execute necessary courses of action to bring about desired results (Tschannen-Moran, Hoy, & Hoy, 1998).

Special Education: Special education means specially designed instruction, at no cost to the parents, to meet the unique needs of a child with a disability, including— (i) Instruction conducted in the classroom, in the home, in hospitals and institutions, and in other settings; and. (ii) Instruction in physical education (Individuals with Disabilities Education Act, 2004).

Synchronous Distance Learning: The term is most commonly applied to various forms of televisual, digital, and online learning in which students learn from instructors, colleagues, or peers in real-time, but not in person (The Glossary of Education Reform, 2022).

Teacher Self-Efficacy: Teacher Self-efficacy has been defined as a teacher's belief that his or her behavior influences students' performance (Bandura, 1997).

Summary

Teacher self-efficacy is a well-established notion in educational research, particularly as an extension of Albert Bandura's social cognitive theory (Bandura, 1997). The value of self-efficacy in special education is examined via the perspectives of teachers who instruct students with disabilities. In this study, special education teachers' self-efficacy was investigated and compared in the contexts of face-to-face instruction pre-COVID-19 pandemic and during the COVID-19 pandemic using distance learning. This quantitative study included special education teachers of high schools and middle schools of several districts in part of the Region One area in South Texas. Participants of the study completed a survey assessing their level of self-efficacy in the aforementioned contexts. The study intends to positively impact the educational field by creating awareness of the impact of the COVID-19 pandemic-induced school closures and the demands to implement distance learning on special education teachers.

Moreover, the study's findings can aid stakeholders in education in addressing ways to strengthen special education teachers' self-efficacy in the context of distance learning. This information may prompt the creation of proactive plans for effectively addressing remote learning for students with disabilities. The research proposes recommendations to support special education teachers through distance learning from the findings. The upcoming chapters outline

the process followed while conducting the study. These chapters include a deep analysis of the relevant literature in the area, a detailed description of the research process, the findings, implications, and recommendations.

CHAPTER II

REVIEW OF LITERATURE

This chapter contains a synthesis of selected literature on the topic of this study. The chapter begins by discussing the theoretical framework used for this study. Next, teacher self-efficacy is discussed in terms of a conceptual model, its effects, and inclusion into the educational field. Finally, an intensive discussion of literature related to the domain-specific context of this study follows. Research on each of the contexts reveals limited literature on the topic. A good example discussed in this case is the inadequate information on special education teachers' perceptions of students in special education using distance learning during a global pandemic.

Teachers' Self-Efficacy: Theoretical Framework

According to Bandura (1997), self-efficacy is a person's confidence in their ability to achieve a particular goal. Self-efficacy gives people much control over their behavior, including how they think, act, and get motivated (Bandura, 1993). Bandura's (1977, 1997) research explains four factors influencing self-efficacy. The first factor is performance accomplishments. This factor holds that if a teacher succeeds in teaching a concept, he or she will be able to repeat the process effectively (Bandura, 1997). Teachers who successfully provide instructions have confidence and trust in their ability to help students achieve academic success (Bandura, 1997). The second factor is vicarious experiences (Bandura, 1997). Vicarious experiences occur when a teacher observes other peers successfully completing a mission or task, leading them to believe

they can do the same (Bandura, 1997). Verbal and social persuasion is the third factor that occurs when teachers receive feedback from others. Whether positive or negative, feedback can significantly affect a teacher's level of confidence and his/her ability to execute duties (Bandura, 1997). Bandura (1997) describes the fourth factor as physiological and emotional states. This factor refers to a person's physical and emotional state while contemplating something. Pajares and Schunk (2002) claim that stress, anxiety, fear, and worry can predict future inability to perform tasks effectively. Bandura (1997) explains that if the emotional state improves, the emotional arousal or stress is reduced, and a positive change in teacher efficacy can be predicted.

Education is affected by teachers' beliefs in their efficacy (Bandura, 1997). Research states that teachers who lack self-efficacy can demonstrate a sense of failure, inefficacy, reduced commitment to their profession, or even high turnover (Ramey-Gassert & Shroyer, 1992). Additionally, self-efficacy impacts a teacher's performance of their responsibilities, such as the amount of effort they put into their teaching, the goals set, and the level of enthusiasm for what they do (Tschannen-Moran & Hoy, 2001). Tschannen-Moran and Hoy (2001) found that teachers with a strong sense of self-efficacy plan their lessons better, have higher educational expectations for their students, and are more likely to look for the best ways to help their students improve their grades. Individuals with a strong sense of self-efficacy attribute failures to a lack of knowledge. Such individuals look for development opportunities to improve their knowledge and skills (Bandura, 1997).

Furthermore, individuals with a stronger sense of self-efficacy are likelier to have a positive mindset, achieve personal goals, minimize stress, and reduce their vulnerability to depression (Bandura, 1997). Applying Bandura's theory to this study is important because it can

help us comprehend the teachers' role and impact on their students' performance. The use of self-efficacy as a theoretical foundation in this study can contribute to the literature in the field and add a knowledge framework for leaders and teachers in special education, which is currently affected by the COVID-19 pandemic. Additionally, understanding teachers' perceived competence and the contributing factors can guide future efforts to build and improve teachers' capacity and a strong sense of self-efficacy (Bandura, 1996; Lemon & Garvis, 2016). Bandura's cognitive theory says self-efficacy is a domain-specific construct that can be studied in different situations (Sariçam & Sakis, 2014). In the context of this study, self-efficacy refers to the special education on teachers' perceptions regarding their ability to provide instructional support to students in special education. Special education teachers face multiple challenges that can lead to a low sense of self-efficacy (Cook & Ogden, 2022; Leyser et al., 2011). However, empirical studies in this area indicate that special education teachers with a high sense of self-efficacy are more likely to differentiate instructional practices, individualize instruction, utilize positive behavior supports, have supportive attitudes, and create inclusive environments that meet students' needs (Bradshaw & Mundia, 2006; Paneque & Barbetta, 2006).

Paneque and Barbetta (2006) conducted a study on 202 special education teachers to evaluate teacher self-efficacy. The study participants completed a survey that assessed their perceptions of effectively meeting the needs of English language learners with disabilities in special education. The research revealed that teachers perceived that the support from administrators, parents, peers, available resources, language proficiency, and professional development contributed to a high sense of self-efficacy (Paneque & Barbetta, 2006). Bradshaw and Mundia's (2006) study of 166 teachers showed that teachers are often hesitant to teach students with special needs because they do not know enough about special education. The

study hypothesized that the teachers' feelings of frustration, inadequacy, and low self-efficacy could negatively impact their ability to educate students in special education in an inclusive teaching environment (Bradshaw & Mundia, 2006). However, contrary to the expectation, researchers found that the teachers presented higher levels of self-efficacy and better attitudes towards inclusive practices when exposed to more training in special education (Bradshaw & Mundia, 2006).

Bandura (1999) explained that a teacher's self-efficacy could be impacted by prior exposition to experiences and outcomes. Consequently, the mastery of these experiences can lead to a higher sense of self-efficacy (Bandura, 1999). For instance, during the COVID-19 pandemic in 2020, teachers were presented with the unprecedented task of educating students in special education using distance learning (Donohue & Miller, 2020; Ma et al., 2021; Rabaglietti et al., 2021). The pandemic propelled the need for teachers' self-efficacy under new teaching conditions, including the stress of teaching during a pandemic and the implementation of distance learning. (Ma et al., 2021; Rabaglietti et. al., 2021).

A study conducted during the COVID-19 pandemic through surveys assessed the level of self-efficacy of 351 teachers for distance learning (Ma et al., 2021). The study's findings indicated that teachers presented low levels of self-efficacy during the pandemic due to the lack of previous relevant experiences supporting. Therefore, Ma et al. (2021) concluded that more professional development targeting effective delivery of distance learning would increase teachers' self-efficacy.

In a quantitative study conducted by Rabaglietti et al. (2021), 366 Italian teachers completed a survey that measured their perceived stress of teaching during COVID-19, their general self-efficacy, and the difficulties they encountered in organizing distance learning. The

study's findings demonstrated a negative relationship between the teachers' perceived stress, the challenges of distance learning, and the teachers' sense of self-efficacy. Teachers' stress was not linked to the implementation of distance learning but to using this mode of instruction as an alternative to face-to-face instruction (Rabaglietti et al., 2021). The research also concluded that teachers teaching from home had concurrent responsibilities as educators and parents or family caregivers, increasing their perceived stress levels. However, these high levels of stress were related to lower levels of self-efficacy (Rabaglietti et al., 2021).

Teachers' Self-efficacy and Student Engagement

Student engagement is a construct that goes beyond involvement and participation in the classroom; it requires emotions and action (Quaye et al., 2019). According to multiple researchers the theory of student engagement comprises three dimensions: behavioral, emotional, and cognitive engagement (Trowler, 2010). Behavioral engagement refers to students following norms and showing involvement in classroom activities; when students are behaviorally engaged, they are less likely to engage in disruptive behavior (Evans et al., 2015; Trowler, 2010). Students that show emotional engagement have a strong sense of belonging and are more affectionate to their peers. Furthermore, cognitively engaged students are invested in their learning, show understanding, and look and lack rigor for opportunities to expand their learning experiences (Trowler, 2010). On the other hand, critics argue that student engagement remains under-theorized since many of the studies are solely based on cause and effect variables (Macfarlane & Tomlinson, 2017). Moreover, critics of these beliefs argue that students should be allowed to select the conditions of their own learning rather than pressure the students to comply to be engaged in the lessons (Kahn, 2014; Macfarlane & Tomlinson, 2017).

Student engagement is an area of interest for educators since student engagement reduces the risk of school failure or dropout (Finn & Zimmer, 2012). Additionally, student engagement is correlated to academic and extra-curricular success (Eccles & Barber, 1999; (Furrer & Skinner, 2003; Shernoff & Schmidt, 2008). Educational research supports the idea that teachers are a dominant influence in engaging students (Zepke & Leach, 2010). According to a quantitative study conducted with 1246 students in New Zealand, teachers' actions are influential in determining students' engagement (Zepke & Leach, 2010). More than 90% of all students participating in this study rated teachers' influence as a fundamental factor directly impacting their engagement (Zepke & Leach, 2010). Therefore, teachers' efficacy to engage students is crucial in education.

Teachers' Self-efficacy to effectively engage students has been studied to understand how it positively impacts students' outcomes (Fackler et al., 2021; Lauermann & Berger, 2021; Shoulders & Krei, 2015; Sökmen, 2021). A multi-level quantitative study conducted in Switzerland examined the relationship between teachers' self-efficacy and their students' self-reported sense of autonomy, control, and engagement. The participants included 96 vocational teachers and1300 students. Both teachers and students completed different surveys in this study. Teacher self-efficacy was measured using the "Teacher Self Efficacy Scale (TSES) by Tschannen-Moran & Hoy (2001). Additionally, participants completed the Teacher Responsibility Scale created by Lauermann and Karabenick (2013). The study utilized a vignette instrument modeled after the Problems in School Questionnaire created by Deci et al., 1981 (Lauermann & Berger, 2021) to measure teacher-reported autonomy-supportive versus controlling style. In addition, the study used a modified instrument to measure student-reported autonomy-supportive versus controlling style. Lastly, the study used a scale to measure student

engagement (Lauermann & Berger, 2021). This study demonstrated that teacher self-efficacy was strongly related to motivation, student autonomy, and engagement (Lauermann & Berger, 2021).

Similarly, a causal-comparative quantitative study examined rural high school teachers' self-efficacy in student engagement, instructional practices, and classroom management (Shoulders & Krei, 2015). The study researchers used the instrument created by Tschannen-Moran and Hoy (2001) named the Teachers' Sense of Efficacy Scale (SCEC). Additionally, they included questions about gender, years of teaching experience, level of education, and current position. Shoulders and Krei conducted a Varimax irritated factor analysis and an analysis of variance (ANOVA) to determine if there was any difference in teachers' sense of self-efficacy when comparing gender, level of education, and years of teaching experience. According to the results, teachers' level of education in the study, either Bachelor's or Master's degree, showed no significant difference in student engagement. The study highlights the importance of further studying teachers' self-efficacy as it is significantly related to students' positive outcomes (Shoulders & Krei).

Teacher Self-Efficacy and Instructional Practices

Students' learning outcomes are achieved through instructional strategies. Teachers utilize instructional practices to help students become independent, active learners. When students adopt practical approaches independently, apply them efficiently, and achieve tasks or reach goals, these approaches become learning strategies. According to Von Secker and Lissitz (1999), Teachers must commit to active, student-centered teaching approaches that provide academically demanding experiences for all students, regardless of aptitude, motivation, or

academic track, to change the way students are taught. Consequently, teacher self-efficacy impacts instructional methods, individual and group efforts among educators, and career persistence (Martin & Mulvihill, 2019). Controversially, critics argue that teacher self-efficacy does not consider other valuable factors and might not be comprehensive (Mireles-Rios & Becchio, 2018). For example, a group of researchers places the emphasis of educational leaders to impact instructional methods (Ebmeier, 2003; Mireles-Rios et al., 2019). Some scholars believe that teachers are more effective at delivering instruction when they perceive their leaders as capable of improving instruction themselves (Goddard et al., 2015; Mireles-Rios et al., 2019)

Shahzad and Naureen (2017) conducted a study in Pakistan to explore the impact of teachers' self-efficacy in instructional practices and student outcomes. The participants of this quantitative study included 60 secondary teachers and 100 secondary students. The Teacher Self-Efficacy Scale (TSES) was administered to the teacher participants. Additionally, the researcher created a test to assess the students' academic achievement in the study. Field experts validated the test, and a pilot testing session was conducted. The reliability of this self-made assessment was .89 as per the Cronbach Alpha reliability test (Shahzad & Naureen, 2017). The researcher concluded that a positive relationship existed between the teachers' self-efficacy in instructional practices and the student's achievement. According to Shahzad and Naureen, teachers that are efficacious at providing instructional strategies will benefit the academic outcomes of their students. They recommend that training programs be adopted for teachers to strengthen their self-efficacy and assist their students effectively (Shahzad & Naureen).

Teacher Self-Efficacy and Classroom Management

Classroom management is an important area of research in education due to the enduring concerns of educators and stakeholders to manage behavior problems (Butchart, 1995; Evertson & Weinstein, 2013) School leadership and personnel have expressed concern and interest in how the law impacts teachers' ability to manage student behavior in their classroom (Yell et al., 1998). Additionally, teachers understand that their ability to support positive classroom management will positively impact their well-being and students' success (Kunter & Baumert, 2007; Lazarides et al., 2020; Yell et al., 2016). Differing from these beliefs, critics claim that classroom management alone is not a determinant of student success; they claim that even with the best positive support practices a teacher cannot guarantee improved academic performance specially when working with students in special education as this is just a component and does not assess teaching quality (Myers et al., 2017)Moreover, experts in special education and behavior analysis claim that classroom management may not be sufficient to address the needs of some students with severe behavioral challenges (Horner & Carr, 1997; Myers et al., 2017; Reinke et al., 2014). These students might need individualized behavior intervention plans that go beyond general classroom management strategies to address the specific behavioral needs of the students (Collier-Meek et al., 2019; Horner & Carr, 1997).

According to Lazarides and collegues (2020) teachers' self-efficacy for classroom management is a crucial part of teachers' identity, and it has repercussions for their teaching quality and the outcomes of their students. Theoretically, contextual circumstances play a significant role in developing self-efficacy and its consequences (Lazarides et al., 2020). Australian researchers conducted a longitudinal study in 2002, 2003 and 2006 examining teachers' self-efficacy in classroom management. The population of the study included 172

primary and 223 secondary teachers. The first part of the study included teachers in the stage of pre-professional experience, the following part of the study tracked the teachers as they gained experience (Lazarides et al., 2020). Two instruments were utilized to measure the different variables in the study. First, the TSES (Tschannen-Moran & Hoy, 2001) measured teacher self-efficacy in classroom management. Second, the Teacher Style Scale was utilized to measure teachers' perception of teachers' negativity, advantages, early career mentoring, and demands (Lazarides et al., 2020). The authors utilized descriptive statistics to analyze the findings. The study predicted that teachers' self-efficacy classroom management was less stable in wave 1, pre-service; however, the study's results did not support this hypothesis as teacher self-efficacy remained stable in all study waves. Additionally, the study found that secondary teachers reported higher challenges characterized by excessive demands and low teacher structure, impacting their self-efficacy in classroom management. The authors highlight the need to reduce excessive demands and provide professional development to cultivate teachers' self-efficacy (Lazarides et al., 2020).

Teachers' self-efficacy is essential for better student learning outcomes because teachers with high self-efficacy can recognize the challenges students encounter (Bray-Clark & Bates, 2003; Haverback, 2020; Zee & Koomen, 2016). As a result, they can adapt and modify their teaching and use multiple resources to help their students meet their goals, thus closing the achievement gaps (Bandura, 1999; Haverback; 2020; Florian, 2013; Zee & Koomen, 2016). In addition, high levels of teacher self-efficacy can also lead to better job satisfaction rates, lower levels of teacher perceived stress, higher levels of student achievement and student motivation (Bradshaw & Mundia, 2006; Klassen & Tze, 2014; Klassen et al., 2011; Paneque & Barbetta, 2006; Wertheim & Leyser, 2002; Zee & Koomen, 2016).

This present dissertation adopts the concept of self-efficacy a social cognitive theory. It aims to add to the body of knowledge in special education teachers' self-efficacy. Scholars claim that positive teacher outcomes are dependent on a combination of (a) behaviors, (b) thoughts (e.g. beliefs), and (c) the environment (Bandura, 1986, 1997). As researchers continue to study multiple areas and contexts of teacher self-efficacy, the body of knowledge enlarges and aims to aid practitioners, policy makers, and educational leaders to understand and improve teachers' self-efficacy (Kim & Seo, 2018).

History of Global Pandemics

Infectious diseases reaching the level of pandemics have impacted societies and molded civilizations for centuries (; Huremović, 2019; Qiu et al., 2017; Morens & Fauci, 2020; Shaw-Taylor, 2020). A pandemic is the form of an epidemic that can spread and affect extended regions, countries, or the entire world. If not controlled promptly, it can cause a massive loss of lives (Monto & Fukuda, 2020; Nickol & Kindrachuk, 2019). Scholars delineate that pandemics across history have impacted the world in diverse manners causing high mortality rates, economic crises, and social inequalities (Jordà et al., 2022; Tognotti, 2013).

A historical analysis of the pandemics can help the reader understand their impact. The first records of pandemics in history are found in religious scriptures that describe "plagues" as a bookend of a part of human existence and the beginning of a new chapter for humanity (Huremović, 2019). In Ethiopia, the Athenian Plague originated in 430 BC and swept through Egypt, Libya, Persia, and Greece (Huremović, 2019). Its actual epidemiological root cause remains unknown, but it is believed that the pandemic was a variety of contagious diseases that possibly included smallpox, bubonic plague, measles, and scarlet fever, to mention some

(Huremović, 2019; Longrigg, 1980). The Athenian Plague caused around one hundred thousand deaths (Schwartz & Kapila, 2021). Historians believe that death is one factor that led to Athens's defeat in the war against Sparta (Hays, 2005).

The next pandemic documented in history is the Antonine Plague of 165 AD, which impacted the Roman Empire, causing 2,000 deaths per day (Hays, 2005; Huremović, 2019). Likewise, Hays states that historians attribute this pandemic as the possible factor that led to the fall of the Roman Empire. Next is the smallpox pandemic that arose in Japan in the 700s A.C., causing high mortality rates (Hays). Subsequently, the leprosy plague occurred in the 1000s in Medieval Europe. The leprosy plague pandemic caused numerous deaths, social astigmatism, and fear due to the nature of its symptoms (Hays, 2005).

In the 1300s, the world faced a global outbreak of bubonic plague known as the "Black Death" (Hays, 2005; Huremović, 2019). At that time, the plague significantly reduced the global population by causing the death of 150 million people, including perhaps 50% of the people in Europe (Hays; Huremović). It is also known that this significant global pandemic extended to a larger part of the globe due to the transportation resources available at the time compared to previous pandemics (Hays). Consequently, the long-lasting pandemic caused relevant changes in the economy, including wage freezes, increases, relocation of workers, and technological advancements considered by historians as favorable for the people that survived the pandemic (Hays).

The first major pandemic of the nineteenth century was the Spanish Influenza caused by a strand of the H1N1 virus. This pandemic is considered one of the deadliest diseases in modern history killing between 50-100 million around the globe (Huremović, 2019; Nickol & Kindrachuk, 2019; Tumpey et al., 2005)). The so-called Spanish flu did not discriminate among

age groups; however, it is known that the disease primarily affected children and the elderly. However, this virus also affected young people and healthy mid-age adults (Nickol & Kindrachuk, 2019). In the United States, Spanish flu started in March 1918 and lasted a few months throughout the summer of 1918. However, two more vicious and deadly waves of this pandemic occurred between the fall of 1918 and lasted until spring 1919, leaving behind hundreds of thousands of deceased victims because the world was not prepared for a pandemic like this. While medical research had advanced tremendously compared to the previous worldwide pandemic episodes, medics did not have the answers to stop the massive spread of the virus (Taubenberger & Morens, 2006).

According to Schwartz (2018), during the Spanish flu pandemic, school closings, restrictions on large gatherings, isolation periods, and quarantine were used as the most effective nonmedical intervention at the time to attempt to stop the spread. Nevertheless, this pandemic wreaked havoc, causing harmful results in health, high unemployment, a troubled economy, high levels of poverty, and most disastrously, the loss of millions of lives (Taubenberger & Morens, 2006).

Pandemics have occurred throughout history to the present. Furthermore, in 2002 the Severe Acute Respiratory Syndrome (SARS) impacted China for the first time (Anderson et al., 2004; Cherry & Krogstad, 2004). Cherry and Krogstad described SARS as a "mini pandemic" since it did not cause as many deaths as the very well-known pandemic predecessors. Nevertheless, SARS spread around twenty-nine countries and met the requirements for a disease to be considered a pandemic, including high infectivity rate, high spread across the world, and high mortality rate of 10% (Anderson et al., 2004; Cherry & Krogstad; Huremović, 2019). The SARS pandemic diminished in a short lapse of seven months through global joint efforts in the

area of communications and public health (Cherry & Krogstad). However, the pandemic exposed weaknesses present in public health systems and affected the economies of several Asian countries, mainly China (Doan et al., 2020).

In June 2009, H1N1 or "Swine Flu" was officially declared by the World Health Organization (WHO) to constitute an influenza pandemic, the first pandemic declaration in 40 years (Cohen & Enserink, 2009). Experts estimate that more than five hundred thousand people died due to this pandemic (Huremović, 2019). Consequently, just like its predecessors, this pandemic impacted the economy of the affected countries and continued to point to weak areas in public health systems. Furthermore, after this pandemic, research pointed out the fundamental role of prevention plans in health, communications, economy, and education to face a future pandemic (Crosier et al., 2015).

In December 2019, the world heard about a new virus in China that was highly different from the prior coronaviruses, which have been present globally for around 50 years. Coronaviruses are known to cause severe acute respiratory syndrome (SARS) that can lead to death (Lango, 2020; Zimmermann & Curtis, 2020). The new strand, which was called COVID - 19 virus later, proved to be the most disastrous compared to its predecessors; it was more contagious and produced severe health problems (Lango, 2020; Zimmermann & Curtis, 2020). The COVID-19 pandemic has critically impacted the world, forcing countries to mandate nationwide or regional lockdowns and creating challenges in many areas, including public health, economy, increased poverty, and unemployment rates, and education (Gautam & Hens, 2020)

The Impact of Pandemics on Education

Pandemics have caused significant disruptions in societies and impacted humanity in multiple ways (Spielman & Sunavala-Dossabhoy, 2021). History has documented the massive impact pandemics have caused, not excluding magnitudinous deaths, economic crises, global conflicts, and societal issues. However, according to Spielman & Sunavala-Dossabhoy (2021), there is a notorious shortage of literature documenting pandemics' effect on education throughout history.

During medieval times in the early 11th century, people did not have access to public schools. Those fortunate enough to receive an education did so either at home with a tutor or at a church-run school. As a result, religion influenced every subject that pupils studied (Orme, 2006; Spielman & Sunavala-Dossabhoy). During the leprosy pandemic, the sick were isolated to prevent infection. However, historical evidence claims that the church continued to provide religious education, mainly through specially created windows called leper squints (Spielman & Sunavala-Dossabhoy).

During the first wave of the Black Death or bubonic fever pandemic in the 1300s, more medical schools were created to provide better treatment for patients. Courtenay studied the impact this pandemic caused on European higher institutions (Courtenay, 1980). It is documented that this plague caused multiple closures and lowered the enrollment of students in universities such as Oxford University, Paris University, and Merton college impairing the quality of education between 1350 to 1360 (Courtenay, 1980). Furthermore, this decline in enrollment caused changes in the way studies were presented in the 1360s to be easier to grasp by students (Courtenay, 1980). Similarly, school closures were also implemented during the

second wave of the great plague of London or the "Black Death" pandemic in the 1600s (Spielman & Sunavala-Dossabhoy, 2021).

In 1918 the Spanish flu pandemic disrupted humanity and their ways of living. For the first time in the history of pandemics, an attempt to continue education using correspondence learning in law or philosophy was used because face-to-face instruction was unnecessary (Spielman & Sunavala-Dossabhoy, 2021). Additionally, in 1922, the Pennsylvania State College used radio to broadcast a class for the first time in history (Spielman & Sunavala-Dossabhoy, 2021).

The SARS pandemic did not affect education on a global scale. However, short-term school closures were used in China as a mitigating measure to contain the spreading of the virus (Lo et al., 2005). Subsequently, during the H1N1 pandemic in 2009, health authorities evaluated the possibility of using school closures to mitigate the propagation of the virus. Following these recommendations, many schools in different locations, including New York, Texas, Australia, and some cities in Asia, adopted individual school closures between April and the end of June. However, national or state school closures were never considered or adopted (Brown et al., 2011; Jhaveri, 2020).

According to Cauchemez et al. (2009), many countries around the globe have considered or adopted school closures as a non-pharmaceutical measure to reduce contagion during pandemics. However, many researchers believe that school closures have severe repercussions that negatively impact society (Brown et al., 2011; Cauchemez et al., 2009). Therefore, although research developed after the H1N1 suggest that school closures continue to be an effective measure against the propagation of a pandemic, the importance of a proactive plan has been emphasized to implement school closures in the future instead of reactively closing the schools

during a pandemic (Brown et al., 2011; Cauchemez et al. 2009; Craig Rush et al., 2016). Furthermore, Craig Rush et al. (2016) recommended developing a fully functional emergency online school plan considering multiple resources necessary for proper implementation for an emergency plan.

The Impact of COVID-19 on Education

The COVID-19 pandemic took the world by surprise, causing a health toll and negatively impacting all areas of humanity (Reimers, 2021). The impact of the pandemic did not exclude education; education systems in most countries were tested (Donohue & Miller, 2020; Reimers, 2021). For centuries, school closures have been used as non-pharmaceutical measures to mitigate the spread of pandemics (Brown et al., 2011; Cauchemez et al., 2009; Qiu et al. 2017). When the COVID-19 pandemic was first detected in 2019 in China, these precautions were considered by the medical community (Donnelly & Patrinos, 2021; Onyema et al., 2020). The World Health Organization (WHO) reports more than 390 million confirmed cases and 5.7 million deaths caused by the COVID-19 pandemic (WHO, 2022). As these numbers increased, governments around the world issued mandates that include temporary school closures; 138 countries decided to follow the recommendations of the medical community and adopted measures to stop the spread of COVID-19 (Donohue & Miller, 2020; Kaden, 2020; Kuhfeld et al., 2020; Viner et al., 2020). As a response to the pandemic, these closures started in the early months of 2020, and to date, school closure as a measure is still in effect in some areas of the world, affecting the education of 80% of children worldwide (Donnelly & Patrinos, 2021; Onyema et al., 2020). While in the past pandemics, governments mandated school closures to maintain safety, this measure has never been used on such a larger scale (Donnelly & Patrinos, 2021; Onyema et al., 2020). Previous school closures in past pandemics focused on maintaining social distancing, but

they lacked a plan to continue education (Spielman & Sunavala-Dossabhoy, 2021). In contrast, during the COVID-19 pandemic, many educational agencies and governments required schools to close while continuing to provide distance learning (Engzell et al., 2021; Kaffenberger, 2021; Reimers, 2021).

The disruptions created by the pandemic affected more than 1.7 billion students, including 99% of the learners in developing countries (Reimers, 2021; United Nations, 2020). The Director-General of UNESCO, Andrey Azoulayals, warned that "While temporary school closures as a result of health and other crises are not new, unfortunately, the global scale and speed of the current educational disruption is unparalleled and, if prolonged, could threaten the right to education" (United Nations Educational, Scientific and Cultural Organization , 2020). While the long-term impact of these measures can only be assessed in the future, nowadays, educational researchers are studying and predicting the adverse effects these closures will have on education (Azevedo et al., 2021; Engzell et al., 2021; Kaffenberger, 2021; Reimers, 2021)

A study conducted in The Netherlands analyzed students' academic performances affected by school closures and compared them to pre-pandemic times (Engzell, 2021). The study's finding demonstrated that students underperformed compared to the baseline results. Furthermore, Engzell claimed that the study provided clear evidence that students learned less during lockdown than in a typical year (Engzell et al., 2021).

In her study, Kaffenberger used a model to estimate the potential long-term impact on education after the pandemic induced school closures. Kaffenberger relied on prior studies that calculated the effects of temporary school closures. Among the studies was the one conducted by Andrabi et al. (n.d.), which calculated the impact of school closures in Pakistan due to an earthquake in 2005. This study indicated that students who experienced those school closures

were 1.5 years behind on average four years later. Using these data and a calibrated "pedagogical production function," the researcher replicated students' learning trajectories after school closures in developing countries (Kaffenberger, 2021). This study predicts that current grade 3 students, after seven years of instruction will continue to be one full year lower than they would be, had there been no school closures (Kaffenberger, 2021).

Similarly, a simulation study was conducted by Azevedo et al. (2021) to measure the potential impacts of school closures around the world. The study presented four simulations that range from optimistic, intermediate, pessimistic, and very pessimistic according to the amount of time of the school closures and the measures put in place to continue education (Azevedo et al., 2021). The findings of the simulations presented a learning loss in all different scenarios ranging from 0.3 to 4.2 years (Azevedo et al., 2021). In addition, the study projected that the COVID-19 pandemic would cause an additional 10.7 million students to drop out of school around the globe (Azevedo et al., 2021). Consequently, the future lifetime earnings that students will produce will also decline by 2-10 % (Azevedo et al., 2021). The researchers also predicted that the number of students below the proficiency level would increase significantly in some areas of the world, reaching up to 70% of students unable to do the basics (Azevedo et al., 2021).

Studies on the educational impact of COVID-19 present a solid foundation to believe that learners around the world will experience learning losses. However, it is essential to mention that these losses are predicted to be more severe for students in special education (Nasir & Hameed, 2021; Pier et al., 2021; Schuurman et al., 2021). For example, in a study conducted in California, the researchers compared student growth from fall 2019 pre-COVID-19 pandemic to winter 2021 after COVID-19 pandemic-induced school closures (Pier et al., 2021). The study included 10,000 students in grades 4-8. The study used four years of interim assessment to establish a pre-

pandemic baseline (Pier et al., 2021). The findings demonstrated that students in special education in English Language Arts had an average of 3.0 months of learning lag compared to the all-student group that presented 2.7 months of learning lag. As anticipated, students in special education in mathematics presented a learning lag of 2.8 months versus the 3.6 demonstrated by the all-students group (Pier et al., 2021).

The COVID-19 pandemic will impact education worldwide. Researchers and organizations have projected that school closures during the pandemic could have detrimental effects on learning gains, causing a loss of around one instructional year of learning (Burgess & Sievertsen, 2020; Engzell et al., 2021; Kuhfeld et al., 2020; Sabates et al., 2021). Thus, understanding the impact of the pandemic on the global education systems can significantly benefit educators, policymakers, and researchers to prepare better for a future health crisis (Donnelly & Patrinos, 2021). Furthermore, the current literature agrees that adopting educational interventions to close academic gaps is fundamental to mitigating these learning losses (Azevedo et al., 2021; Pier et al., 2021).

Education during the COVID-19 Pandemic

As school closure mandates were adopted, educational agencies and entities faced the challenge of creating alternative ways to deliver knowledge (Reimers, 2021). However, it soon became apparent that new challenges emerged, including providing school-related services such as special education support, interventions, physical education, speech, occupational, and physical therapy, counseling, and food services (Reimers, 2021). Therefore, it became necessary to reprioritize the focus of instruction as educational agencies realized that alternative

arrangements for delivering education had reduced the capacity to achieve the instructional goals of regular academic years (Reimers, 2021).

A study conducted by Reimers (2021) found that plans to continue education were put in place in all 59 countries participating in the survey. These plans for education continuity involved distance learning in the form of emergency remote learning where teachers would continue delivering lessons through electronic devices, the use of instructional packages, dissemination of printed resources to students so they could continue learning from home, and the use of television programs in delivering instructional lessons to the masses (Hodges et al., 2020; Reimers, 2021). The emergency remote learning was different from regular online learning; it was only intended to be temporary due to the circumstances created by the COVID-19 pandemic but never intended to be a permanent supplement to the face-to-face school modality (Hodges et al., 2020).

Researchers in collaboration with organizations including United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations International Children's Emergency Fund (UNICEF), and the World Bank conducted a cross-national study to understand the emergency remote learning plans. The study administered two surveys to government officials of 118 and 149 countries, respectively, between May and June 2020 (Munoz-Najar et al., 2021). The study confirmed and documented school closures during extended periods. It further found out that students' learning was monitored more effectively in countries with higher income and better infrastructure than in developing countries. Furthermore, distance learning in online learning was used primarily in 95 of the countries surveyed, impacting 999 million students. Conversely, 38 participants offered distance learning through television and radio, affecting 104 million students. Moreover, 29 of the governments participating in the survey

claimed to have used a combination of distance learning modalities, including online learning and tv/radio learning (Munoz-Najar et al.).

While it would be easy to presume that going remote or online was uncomplicated, the plan worked differently depending on the country's infrastructure and the learners' access to the internet (Hodges et al., 2020; Reimers, 2021). The history of distance learning is an invaluable resource for everyone active in the field of education; some features of that past serve as standards for current governments and policymakers, forming a legacy that should not be neglected as distance learning evolves and expands around the world (Simpson & Anderson, 2012).

History of Distance Learning

Scholars describe distance learning as a process where a student can learn through the access of lessons and materials while physically separated from the teacher or instructor (Gunawardena & McIsaac, 2004; Keegan, 1980). Distance learning gained copious attention in 2020 when it was massively utilized by public and private educational institutions across all grade levels around the globe in response to the suspension of face-to-face learning during the COVID-19 pandemic. However, distance learning is not a new concept as it has been available since the 1700s (Harting & Erthal, 2005). Keegan states that "Sewart sometimes tries to trace distance learning back as far as the epistles of St. Paul" (Keegan, 1986, p. 94). According to Willis (1994), word-of-mouth information transmitted by itinerant people can be considered the first form of distance learning. However, most researchers agree that evidence supports the idea that essential factors that contributed to the creation of distance learning took place in the late 1700s or early 1800s (Casey, 2008; Courtney & Wilhoite-Mathews, 2015; Harting & Erthal,

2005; Simpson & Anderson, 2012; Sumner, 2000; Saykılı, 2018). With the use of different technologies in history, distance learning has been able to mediate and manage the challenges imposed by the separation between learners and teachers (Sumner, 2000). Over time distance learning has evolved and transformed, thus creating different generations. However, its primary purpose remains to provide education to people who cannot attend classes in person (Courtney & Wilhoite-Mathews, 2015; Harting & Erthal, 2005; (Simpson & Anderson, 2012; Sumner, 2000). Further analysis of these different generations of distance learning will be presented to better understand its history and trajectory.

The first generation of distance learning is described as correspondence education. It consisted of mail to deliver printed materials with resources students would utilize to acquire knowledge (Harting & Erthal, 2005; Holmberg 1995; Roberts, 2019). Factors including the implementation of consistent mail service, the affordable cost of pens, mass-produced press, and printed materials, and the need for adult literacy due to the Industrial Revolution undeniably contributed to the beginnings of correspondence education (Saykılı, 2018; Sumner, 2000). This type of distance learning was initiated in the early 1800s to provide opportunities for people without access to educational institutions, primarily targeting the working class and women (Casey, 2008; Harting & Erthal, 2005; Simpson & Anderson, 2012). In the mid-1800s, correspondence, education, and learning gained more popularity worldwide. It expanded to multiple educational institutions, including universities like Oxford and Cambridge in the U.K., Illinois Wesleyan University, and Pennsylvania State University in the United States (Banas & Emory, 1998; Harting & Erthal, 2005; Saykılı, 2018).

The second generation of distance learning is multimedia distance learning (Casey, 2008). With the constant change of the world and the development of new technology, in the

early 1900s, distance learning added a new modality. Live distance learning radio' shows provided the opportunity for students to learn from a distance (Casey, 2008; Saykılı, 2018). In addition, the educational radio shows provided learning opportunities for self-enrichment and to earn school credits (Casey, 2008; Harting & Erthal, 2005; Saykılı, 2018). Radio lessons were very popular in countries like the United Kingdom, while in the United States, this modality never acquired as much popularity (Harting & Erthal, 2005). Televisions also expanded the distance learning concept (Casey, 2008; Harting & Erthal, 2005; Saykılı, 2018). For example, in 1932, the University of Iowa used television to broadcast courses (Casey, 2008; Harting & Erthal, 2005). In the following decades, many other instructional institutions, including universities such as the University of Texas, Ohio University, and California State University, in collaboration with television stations, joined the distance learning modality providing instructional lessons through T.V. in more than 20 channels (Casey, 2008; Harting & Erthal, 2005).

The third generation is computer-mediated or online distance learning (Casey, 2008). This generation has allowed distance learning to evolve, grow, and expand (Casey, 2008; Saykılı, 2018). Therefore, computers have added more than an educational component to distance learning. According to Casey (2008), "the computer was the missing piece of the educational puzzle that would facilitate the free flow of information between teacher and learner as well as introduce the previously absent interpersonal aspects of communication" (p. 47). Previous generations of distance learning had a significant limitation of restricting communication one-way, from teacher to student (Casey, 2008; Saykılı, 2018). In the 1970s, with the creation and popularization of email communication, students could communicate with their teachers more effectively, establishing a two-way communication channel (Saykılı, 2018).

Computers also added the ability for students to communicate with other students, thus developing learning communities among teachers and students (Saykılı, 2018). At the beginning stages of this generation of distance learning, computers were used to enhance previous distance learning approaches using discs to store and facilitate learning materials and later access them through a computer (Saykılı, 2018). Video and audio conferencing were also added to enhance learning at home (Saykılı, 2018). With the development of the internet and the World Wide Web, enhanced features to distance learning have been added, such as effectively receiving feedback through self-paced quizzes, but interaction with the teachers and classmates continues to have limitations (Sumner, 2000).

Distance learning online can be presented in two different modalities: synchronously or asynchronously (Skylar, 2009; Watts, 2016). Asynchronous instruction allows students to learn in a flexible environment where they can access various learning tools such as pre-recorded lectures, videos, and information without connecting at a set time or day (Skylar, 2009; Watts, 2016). For decades, asynchronous interaction has been the traditional way to deliver students' instruction. However, as technology has evolved, synchronous media has become more available, thus opening possibilities for the learners (Midkiff & DaSilva, 2000; Skylar, 2009; Watts, 2016). According to Hrastinski (2008) asynchronous education encourages learners to reflect on their thoughts, connect to a greater degree with the information, feel part of the learning community, and write more reflective remarks in the discussion panels.

Synchronous distance learning can be described as computer-mediated real-time teaching and learning using the internet (Watts, 2016). Synchronous communication tools such as web-video conferencing allow for more direct social interaction and feedback among learners and teachers, which may leave less time for reflection. It, however, allows for immediate correction

of misconceptions and may lead to higher levels of learner engagement (Hrastinski et al., 2010; Strømsø et al., 2007).

The Challenges of Distance Learning

Distance learning has transformed education over the last two centuries through various technological advances and the incorporation of new approaches to teaching (Bower & Hardy, 2004; Peterson et al., 2020). However, new educational approaches, practices, and demands for teaching can impact teacher self-efficacy and perceptions (Bower & Hardy, 2004; Peterson et al., 2020; Pressley & Ha, 2021). This was the case presented during the COVID-19 pandemic-induced school closures when teachers were presented with the novice task of providing distance learning through the use of technological tools (Pressley & Ha, 2021). Pressley and Ha conducted a study to measure possible changes in teachers' self-efficacy after returning to teaching during the COVID-19 pandemic. The study involved 361 US teacher participants who returned to teach during the COVID-19 pandemic using traditional face-to-face, virtual, and hybrid school settings both in elementary and high school (Pressley & Ha, 2021). Surveys were administered to collect data on teachers' instructional and engagement self-efficacy. The results confirmed the researchers' hypothesis; the teachers in the study demonstrated lower instructional and engagement self-efficacy during the distance learning period in fall 2020. The teachers that provided distance learning in all virtual settings showed the lowest levels of self-efficacy in both instruction and engagement (Pressley & Ha, 2021). Additionally, the study concluded that teachers providing distance learning in hybrid and virtual settings felt uncertain while delivering online instruction. The researchers attributed these results either to the lack of previous experiences or feedback regarding virtual instruction (Pressley & Ha, 2021).

Concurrently, special education teachers' self-efficacy has also been impacted by implementing distance learning (Supratiwi et al., 2021). A study conducted in Indonesia measured the perceptions of 226 special education teachers in distance learning (Supratiwi et al., 2021). The study demonstrated that special education teachers experienced difficulties during distance learning ranging from difficulties adapting materials for distance learning to evaluating and monitoring the progress of students in special education (Supratiwi et al., 2021). Educating students in special education is a complex task for special education teachers worldwide. The teachers must have a strong sense of self-efficacy in the area because this will improve their ability to provide the students with individualized support (Sariçam & Sakis, 2014). According to Denisova, Lekhanova, and Gudina, students in special education continue to be one of the most vulnerable learning populations. They are among those who confront significant education hurdles and restrictions because the assistance and learning resources they require are not always available (Denisova et al., 2020).

Teachers Leading through Change

During the COVID-19 pandemic teachers not only were faced with multiple challenges, but they were expected to adapt effectively to the new modes of instruction to continue educating students (Li & Yu, 2022). Teachers had to act as leaders to adapt and overcome the challenges created by the COVID-19 pandemic (Darling-Hammond & Hyler, 2020) However, the concept of teacher leaders is not a new one; for years researchers have emphasized the importance of establishing and fostering teacher leadership (Abrego & Pankake, 2022; Collay, 2011; Darling-Hammond et al., 1995). Harris and Jones (2020) say that the idea of teacher leadership as action goes beyond what teachers are expected to do in the classroom to make changes and share methods. So, teacher leadership can be considered a set of traits and skills that help teachers

build relationships with their peers, school leaders, parents, and students ((De Klerk & Smith, 2021). Moreover, a teacher leader can eliminate obstacles and create and use resources school-wide that allow them to enhance students' learning (as cited in De Klerk & Smith, 2021). Teacher leadership is also related to self-efficacy, Lowery-Moore and colleagues claimed that in order for teachers to become leaders they need to have a strong sense of self-efficacy (Lowery-Moore et al., 2016). According to Barth (2001) teachers who take on leadership roles report higher levels of personal and professional satisfaction, a reduced feeling of isolation, a heightened sense of instrumentality, and the acquisition of new knowledge, all of which filter back into their classroom instruction.

The COVID-19 pandemic presented educational leaders and teacher with important challenges while having to use distance learning as a mode of instruction (De Klerk & Smith, 2021). In this respect, the Organization for Economic Co-operation and Development (OECD) (2020) has emphasized the need to support and empower teachers so they can become leaders and agents of change. Empowerment may increase teachers' preparedness to undertake progressive change in their schools; hence, it is crucial to consistently create chances to honor and acknowledge the importance of teacher leadership (Behrstock-Sherratt et al., 2020).

Professional Development in Technology Integration

One of the most significant challenges teachers encountered during the COVID-19 induced distance learning was technology integration (Hu et al., 2021; Lapada et al., 2020). However, technology integration has been a popular topic in the last decades. Studies had found that many teachers perceived technology integration as challenging even before the distance learning requirements were established (Hu et al., 2021). Technology competence and

technology integration can be considered similar concepts (Chiu, 2022). However, researchers have found that teachers can be proficient in using technology but do not have adequate skills to integrate technology into their teaching (Angeli & Valanides, 2009; Hu et al., 2021; Lapada et al., 2020; Shu, 2010). Technology integration is considered a dynamic area due to the constant changes and innovations in the area and incorporation of these technologies in the classroom (Bauer & Kenton, 2005). Teachers that integrate technology effectively have the capacity to know when, and how to integrate it to create meaning and amplify the teaching (Bauer & Kenton, 2005; Gorder, 2008). The efficacy of integrating technology into teaching requires educators to apply a different set of skills, including technology, curriculum, planning, and considering the needs of all students to enhance students' learning (Gorder, 2008; Shu, 2010; Southhall, 2012). Literature indicates that teachers' perception of their knowledge about educational technology directly impacts their self-efficacy to integrate technology into their teaching (Gordon, 2008; Moore-Hayes, 2011). For instance, Birisci and Kul (2019) conducted a correlational study to investigate the relationship between the levels of knowledge in incorporating technology in education and the self-efficacy beliefs to integrate technology into teaching. This study presented 174 pre-service teachers with two surveys, the "Techno-pedagogical Education Scale" and the "Technology Integration Self-Efficacy Perception Scale" (Birisci & Kull). According to the study, pre-service teachers had high technology integration self-efficacy beliefs, which had a strong positive link with techno-pedagogical education competency (Birisci & Kul). The authors suggest that pre-service teachers' lack of real-world teaching experience may be a barrier to integrating technology into the classroom (Birisci & Kul). They argue that pre-service teachers should have the opportunity to experience

microteaching opportunities in natural classroom environments to improve their self-efficacy in technology integration (Birisci & Kul).

Furthermore, research conducted in Hong Kong during the pandemic studied the perceptions and practices of preschool teachers during distance learning (Hu et al., 2021). The study included 1035 preschool educators that completed a survey (Hu et al., 2021). The study found that due to the high interaction and hands-on nature of the preschool curriculum in the country, teachers felt they did not have adequate training and knowledge to use online interactive teaching, so they did not feel competent in the area. In addition, the authors highlighted that technology integration had been an area of need at preschool levels prior to the pandemic (Hu et al., 2021).

The majority of research in technology integration was conducted prior to the COVID-19 pandemic in traditional face-to-face learning environments (Birisci & Kul, 2018; Chai et al., 2010; Cubeles & Riu, 2016; Veciño , 2017). However, a bank of studies is emerging to close the literature gap in technology integration during the COVID-19 pandemic through the use of distance learning (Lapada et al., 2020; Rahmadi, 2021). These studies emphasize the need to build adequate and ongoing professional development opportunities for teachers to have the skills to integrate technology into their teaching (Lapada et al., 2020; Rahmadi, 2021).

Descriptive cross-sectional research was conducted in Indonesia to understand teachers' technology integration and distance learning adoption levels after COVID-19 school closures (Rahmadi, 2021). Rahmadi surveyed 572 teachers to understand what technologies teachers used; the process used to teach through distance learning and the level of implementation of distance learning. The study's findings revealed that the participants reported using WhatsApp live, google meets, Facebook Live, and Instagram Live as the leading platforms to teach

synchronously. The author argues that teachers mainly used platforms they were familiar with before the pandemic. Rahmadi claims that in order for teachers to adopt learning management systems to provide distance learning, they have to feel comfortable using this technology. Furthermore, the author recommends adopting proper technology integration policies for distance learning that includes intentional professional development in the area for current teachers and pre-service teachers (Rahmadi, 2021).

Similarly, in descriptive research conducted in the Philippines in 2020, amidst the COVID-19 pandemic, researchers studied teachers' perceptions of the challenges of distance learning. The author of this study created an instrument named "Questionnaires on Teachers Awareness, Readiness and Online Learning Experience During COVID-19 ECQ" (Lapada et al., 2020). The authors utilized random sampling to select participants for the study, including all levels, from teachers teaching in elementary to college professors (Lapada et al). They received 2300 responses to their survey. The results indicated that teachers indicated the following problems during distance learning: the challenges with knowledge and skills required in delivering distance learning education classes, communication issues with students, internet connectivity problems, challenges to using technological devices to deliver instruction, and challenges using learning management systems (Lapada et al.). Additionally, the study concluded that due to the circumstances created by the pandemic, teachers were willing to switch to distance learning; however, they felt ill-equipped due to challenges with lack of training, defective equipment, and infrastructure to implement (Lapada et al.).

Special Education

The History of Special Education

The history of Special Education is relatively recent, with reforms dated in the mid-1900s (Spaulding & Pratt, 2015). It is essential to highlight that "an effective historical narrative of special education law can better illuminate some of the injustices commonly experienced by students with disabilities" (LaNear & Frattura, 2007, p. 89). Consequently, to understand the development and progression of special education, it is imperative to analyze the treatment of people with disabilities before the creation of special education (Winzer, 1993).

Prior to the eighteen century and for thousands of years, people with disabilities faced extreme hardships, including exploitation, extortion, isolation, abuse, and, in extreme cases, execution (Spaulding & Pratt, 2015; Winzer,1993). Equally, in schools, students with disabilities were subject to unfair treatment and witnessed social injustices and inequalities for decades (Martin et al., 1996; Yell et al., 1998). Schools in the United States provided minimal special education services since the laws allowed them to refuse to enroll or expel students with disabilities at their discretion (Yell et al., 1998, 2016). Additionally, schools were allowed to deny services to students that were considered "uneducable" (Martin et al., 1996). The 1960s civil rights movements prompted parents and advocates to use legal avenues to end educational inequalities and social injustices for students with disabilities (Yell et al., 1998).

In 1973, Congress passed the Rehabilitation Act that signified the first attempt to protect people with disability against discrimination (Yell et al., 1998). Two years later, in 1975, the United States Congress passed the Education for All Handicapped Children Act, 94-142. The law mandated all public schools that receive federal funding to give equal access to education to

students with mental disabilities (Yell et al., 1998). Despite these federal mandates, state governments took several years to fully follow the mandate and make official rulings to provide a free appropriate public education, including children with disabilities in special education (Martin et al., 1996). Subsequent laws like IDEA in 1997 and subsequent revisions have continued refining elements in the provision of special education services such as funding, evaluation, and inclusion services (LaNear, & Frattura, 2007; Martin et al., 1996; Yell et al., 1998).

The prior historical analysis presented a clear picture of the multiple challenges confronted by people with disabilities and their fight to obtain an appropriate education. A thorough understanding of the multidimensional history of special education can serve as a foundation to aid education stakeholders make decisions to promote further progress in the area (LaNear & Frattura, 2007; Yell et al., 1998). Unfortunately, even though significant progress has been made to provide better educational access to students with disabilities, special education students continue to struggle to achieve quality educational outcomes (LaNear & Frattura).

Self-Efficacy of Special Education Teachers

The National Center for Educational Statistics reported that more than 7 million students receive special education in the United States (NCES, 2022). As the number of students with disabilities receiving special education services in schools increases, so do the expectations for teachers educating them. Dukes et al. (2014) describe the field of special education as an evolutionary organism that experiences multiple changes affected by social, political, educational, and technological developments; in other words, as the world changes, so do the demands for teachers to meet the educational needs of all students, including the ones in special

education. Despite the many efforts to improve the quality of education for students with disabilities in special education, educators face fundamental challenges in providing educational equity (Allam & Martin, 2021; Allan, 2021; Skiba et al., 2008; Wang & Reynolds, 1996).

Research continues to demonstrate the presence of achievement gaps between students with disabilities in special education and their peers (Eckes & Swando, 2009, Farkas et al., 2020; Mintrop & Zane, 2017; Skiba et al., 2008; West & Whitby, 2008). Teacher perceptions of their efficacy will be a determinant factor that will have positive effects on students' performance because teachers are considered to be the driving force behind the design, implementation, and delivery of instruction as prescribed in the students' Individualized Educational Plans (I.E.P.s) (Blackwell & Rossetti, 2014; Wood, 2017). According to Wood's (2017) research on special education, high self-efficacy in teachers is linked to improved skills in differentiating instruction to meet the needs of all students, including those with disabilities.

A quantitative study to measure special education teachers' self-efficacy was conducted in Hong Kong. Chao et al. (2017) used the Teacher Sense of Efficacy Scale (TSES) to measure the self-efficacy of 347 teachers instructing students with disabilities in the areas of teaching, learning, and classroom management. First, participants were presented with the TSES to establish a baseline. Then, the participants attended a one-week training course to help them improve their skills to educate students with disabilities in teaching, learning, and classroom management (Chao et al.). Subsequently, teachers completed a post-TSES survey. The study's findings showed that teachers had significantly higher levels of self-efficacy in both areas measured after their exposure to the training. The study's findings emphasized the importance of using self-efficacy measures to build professional development opportunities to enhance teachers' self-efficacy (Chao et al.). Research continues to support Bandura's (1999) premise that

teachers with high levels of self-efficacy in the domain-specific area will be more effective and will have help their students reach success (Brouwers & Tomic, 2003; Tschannen-Moran & Woolfolk-Hoy, 2001.).

Special Education during the COVID-19 Pandemic

Historically, students with disabilities and their teachers have faced significant challenges (Yell et al., 1998). However, the COVID-19 added new and more complex challenges that posed a threat to the continuous efforts to provide educational equity for these students (Hurwitz et al., 2022; Peterson et al., 2020;). While research shows that school closures are related to learning losses, students with disabilities are at risk of greater marginalization and exclusion from formal learning opportunities (Hurwitz et al., 2022; Yazcayir & Gurgur, 2021).

A study conducted in Turkey used a phenomenological design to analyze the practices utilized to continue educating children with disabilities as well as the struggles faced during the COVID-19 pandemic. The participants of this study were parents of students with disabilities. The findings reported that teachers continued giving instructions using online and television lessons. However, parents claimed that no additional special education support was provided for the students during the school closures (Yazcayir & Gurgur, 2021). Parents reported that their children with disabilities encountered educational problems during distance learning, including lack of support, inadequate training on how to use distance learning equipment, no computer access, and inability to adapt. Additionally, the findings reported that students with disability suffered psychosocial issues such as inability to socialize, feeling overwhelmed, and conflict with family members (Yazcayir & Gurgur). Using the findings of this study, the researchers

recommend that schools provide additional distance learning with modifications and adaptations for students with disabilities (Yazcayir & Gurgur).

Furthermore, a study conducted by Long et al. (2021) measured the impact of the COVID-19 pandemic on special education. The study was qualitative, and it involved special education teachers. The teachers, through interviews, shared their insights and perceptions on how the pandemic impacted their students. The findings revealed that special education teachers shared multiple areas of concerns created by distance learning. Among the concerns, teachers mentioned the lack of tactile learning, the lack of computer skills, distractions, lack of teaching experience, inadequate captioning, and mask preventing lip reading for students with hearing impairments (Long et al). The authors claimed that the study's findings show that the COVID-19 pandemic amplified educational inequalities in special education students. Additionally, the research recommended strengthening teachers' capacity to ensure that learning is continued effectively for students with disabilities during future crises.

Special Education Teachers Instructing via Distance Learning

In the aftermath of the epidemic, special education teachers, among other educators worldwide, turned to various digital tools and technologies to continue educating. However, special education teachers had additional challenges in educating students with disabilities. These challenges include implementing individually created educational plans, the need to differentiate instruction, and the need to provide support in other related areas such as behavior, assistive technology, and functional skills (Grant, 2020).

A study conducted in the United States investigated how teachers felt while teaching online during the pandemic (An et al., 2021). An et al. (2021) applied a mixed-methods design that involved 110 teachers from the United States who received a survey and participated in a

voluntary follow-up interview. Unfortunately, not all participants agreed to do the interviews that represented the qualitative part of the study. However, the findings deduced from the data revealed that teachers faced multiple challenges during the pandemic, including learning new technology, the lack of students' participation and engagement, lack of appropriate technology, no work, and personal life balance, and concern about the students' feelings (An et al., 2021). When teachers were asked about possible solutions to overcome the challenges, they emphasized the need for professional development for online learning, technology access, technology training for teachers and students, and proactive plans to continue instruction and communication with stakeholders (An et al.). Nevertheless, the teachers who had high levels of self-efficacy were able to adapt from face-to-face to distance learning in a relatively short period. Furthermore, the study concludes that the study of teachers' perceptions of online teaching during COVID-19 is relevant in preparing effective professional development and action plans for future emergencies (An et al., 2021).

Summary

As evidenced by the literature review, teacher self-efficacy is an essential element in teachers. Special education teachers with high levels of self-efficacy in their ability to perform and achieve success will be more effective at instructing students and helping them reach success. However, teachers that are presented with unfamiliar tasks or faced with new educational contexts can experience lower levels of self-efficacy, negatively impacting their students. As shown from the literature synthesis on the topic, teachers who have undergone special education training possess higher levels of self-efficacy, which is essential in teaching students with special needs.

The COVID-19 pandemic-induced school closures forced teachers to continue education through distance learning, creating new and unavoidable challenges. Current literature also supports that distance learning and its technological requirements present further challenges for special education students and teachers during the COVID-19 pandemic. The literature points to students with disabilities as a vulnerable population with a higher risk of struggle during distance learning. Additionally, special education teachers are expected to provide an appropriate education for students with disabilities under the novice distance learning context.

Based on the empirical evidence presented in this literature review, it is pertinent to assume that teachers' sense of self-efficacy is fundamental to guide education and its leaders to continue developing teacher capacity in special education during distance learning. Chapter III will present the proposed mode of instruction for conducting this study to measure special education teachers' self-efficacy using distance learning during the COVID-19 pandemic.

CHAPTER III

METHODOLOGY

This study analyzed the special education teachers' self-efficacy while teaching face-to-face pre-COVID-19 pandemic and while teaching using distance learning during the COVID-19 pandemic. The theoretical framework follows Bandura's premises that teachers' self-efficacy will be impacted when they are presented with new contexts and unfamiliar tasks (Bandura, 1997). The newness of the pandemic-induced school closures created a new context in the area of self-efficacy. This study examined these new contexts and domains and their effects on special education teachers' self-efficacy. This chapter is organized as follows: research design, questions and null hypotheses, population and sample selection, instrumentation, data collection, and data analysis.

Research Design

This study used a quantitative approach to describe and compare the special education teachers' self-efficacy before and during the COVID-19 pandemic. Three domains of self-efficacy were measured, including classroom management, instructional practices, and student engagement. Additionally, teachers answered a series of questions to compare those domains in two different contexts, pre-pandemic using face-to-face and during the pandemic using distance learning. A Qualtrics survey tool was used to collect information from the sample of interest for this study. The survey included control questions to ensure that only teachers teaching special education in both face-to-face inclusion settings pre-pandemic and distance learning inclusion

settings during the pandemic could be part of the study. Teachers who did not teach special education inclusion in both contexts could not complete the survey and were therefore excluded from the analysis. The Teachers' Sense of Efficacy Scale was used to assess self-efficacy, as it is an instrument widely used and assessed (Ruan et al., 2015; Yerdelen et al., 2018). Additionally, a series of questions created by the author was added to allow teachers to assess the support they received from educational leaders during the pandemic that they considered valuable; with these questions, the author addressed the fourth research question of this dissertation.

The author used a quantitative descriptive method to learn more about trends in a population of interest than to get a deep understanding of specific opinions on a topic (Loeb et al., 2017). In this descriptive study, the self-efficacy domains and the modes of instruction were compared. The researcher did not manipulate any variables but compared the variables and their interactions, along with a description of the teachers' perceptions regarding valuable professional development opportunities received during distance learning. Traditionally, the construct of self-efficacy has been measured in its majority using quantitative measures (Pajares & Schunk, 2002). Using a quantitative approach, the author continues to add to the body of knowledge.

Research Questions, Hypotheses, and Null Hypotheses

Research Questions

The following questions guided this dissertation:

RQ1: Is there a difference in modes of instruction between face to face pre-pandemic and distance learning during pandemic?

RQ2: Is there a difference in special education teachers' self-efficacy in the domains of student engagement, instructional strategies, and classroom management?

RQ3: Is there an interaction between the modes of instruction and self-efficacy domains?

RQ4: What supports including professional development did special education teachers received and considered valuable during the COVID-19 pandemic when using distance learning?

Hypotheses

In an effort to discover the answers to the research questions, the following hypotheses were established from the research questions:

H_1: There is a difference between modes of instruction, face-to-face and distance learning.

H_2: There is a difference among the self-efficacy domains of student engagement, instructional strategies, and classroom management.

H_3: There is an interaction between the modes of instruction and self-efficacy domains.

Null Hypotheses

The following null hypothesis were tested to guide this dissertation:

H_O1: There is no difference between modes of instruction, face to face and distance learning.

H_{O2}: There is no difference among the self-efficacy domains of student engagement, instructional strategies and classroom management.

H_{O3}: There is no interaction between the modes of instruction and self-efficacy domains.

Population and Sample Selection

The area selected for this study was Hidalgo County, located in South Texas. All districts located in Hidalgo County were invited to participate. However, only eight districts agreed to participate in the study. Hidalgo County is located in South Texas close to the Mexican border. This area is serviced by the Region One Education an educational service centers that serves 38 school districts, with an estimate of 84.62% of economically disadvantaged students. Within this population, the Region One districts served 43,942 students with disabilities who qualified to receive special education services, equal to 10.39% of the total student population. The districts included in the study vary in size; the smallest has around one thousand students to the largest with about thirty thousand students. Sixty to ninety percent of the students in the districts are from low-income families.

Participant selection included middle school, junior high, and high school certified special education teachers from the participating districts. To participate in this study, special education teachers had to experience teaching before the COVID-19 pandemic using face-to-face instruction and during the COVID-19 pandemic through distance learning. The target was 30 participants that met the criteria. Since the study measured modes of instruction and self-efficacy domains within subjects or repeated measures, the statistical power was considerably greater.

This study used volunteer sampling to include special education teachers teaching at the secondary levelIt was expected that the participants had experience teaching before the COVID-19 pandemic, in inclusive settings using face-to-face instruction and using distance learning during the pandemic. The South Texas school districts that agreed to participate in this study made the survey available through voluntary participation. All secondary special education teachers in the participant district received the email with the information about the study and an

invitation to complete the survey through an anonymous link attached. This analysis used a pre- and post-test method with repeated measurements within subjects because the participants' perceptions were compared in two different teaching situations, before and after the pandemic. Within-subject designs such as this require a smaller number of participants because each person acts as their own control in these designs (Greenwald, 1976; Lamb, 2003; Winer, 1962). As a result of the elimination of the error variance that may be attributed to individual variation, there is an increase in the statistical power (Lamb, 2003; Tanguma, 1999).

Instrumentation

Section 1: Informed Consent and Participant Requirements

This section consisted of a simple individual informed consent question to participate in the student. Additionally, participants were asked if they were certified special education teachers. Participants that did not meet this requirement they were not allowed to continue with the survey. The following two questions asked the participants if their teaching assignment was special education in inclusion settings using the mode of instruction face to face prior the pandemic. The last question of this section asked if the participant's teaching assignment was special education in inclusion settings using the mode of instruction of distance learning during the pandemic. If the response was no to any of these qualifying questions, participants were prompted to the end of the survey and were thanked for their participation.

Section 2: Teachers' Sense of Efficacy Scale (TSES)

The Teachers' Sense of Efficacy Scale (TSES, a.k.a. Ohio State Teacher Efficacy Scale) was created by Megan Tschannen-Moran of the College of William and Mary (V.A.), and Anita

Woolfolk Hoy of The Ohio State University in 2001 to measure teachers' self-efficacy. The TSES measures teachers' self-efficacy (self-reported) in three factors: instructional strategies, student engagement, and classroom management (Tschannen-Moran & Hoy, 2001), with 24 items in all (Table 1). Permission to use this instrument was obtained (Appendix C).

Table 1

The Teachers' Sense of Efficacy Scale (Long Form)

Teachers' Sense of Efficacy Scale	N (Items)	Item Number
Efficacy and Student Engagement	8	1, 2, 4, 6, 9, 12, 14, 22
Efficacy in Instructional Strategies	8	7, 10, 11, 17, 18, 20, 23, 24
Efficacy in Classroom Management	8	3, 5, 8, 13, 15, 16, 19, 21

The TSES instrument (Appendix D) was used in this study to gather teachers' perceptions about their efficacy in educating special education students. Teachers had the opportunity of using a Likert scale included in the survey to respond to the items about their self-efficacy pre-pandemic using face-to-face teaching. Additionally, they answered the same questions about their perceived self-efficacy during the pandemic while using the mode of instruction of distance learning.

The TSES has been the instrument of choice for numerous studies trying to gain knowledge in teachers' self-efficacy under a particular domain or context (Chao et al., 2017; Lauermann & Berger, 2021; Lazarides et al., 2020; Shahzad & Naureen, 2017). Tschannen-Moran and Hoy developed this instrument after a thorough analysis of multiple instruments created before to measure teachers' efficacy, including the Responsibility for Student

Achievement (Guskey, 1981), the Teacher Locus of Control (Rose & Medway, 1981), The Webb Efficacy Scale (Ashton & Webb, 1986), the Teacher Efficacy Scale (Gibson & Dembo, 1984), and Bandura's Teacher Efficacy Scale (Bandura, 1990) among others. This meticulous analysis allowed the authors to create an instrument that was specific enough without risking the external validity and relevance ((Tschannen-Moran & Hoy, 2001). The authors created a scale that initially contained 52 items and was later reduced to 32. The initial study to test the instrument included 224 participants and yielded a variance of 57.2% in ten factors. The authors selected 32 of the original 52 items to test further (Tschannen-Moran & Hoy, 2001). During a second study to test the instruments, the authors included 217 participants. The results of this study pointed to two or three factors that could be extracted; consequently, they decided to label them as efficacy for student engagement, efficacy for instructional practices, and efficacy for classroom management (Tschannen-Moran & Hoy, 2001). An efficacy subscale was computed for each factor by calculating the mean of the responses to the items within each factor (Tschannen-Moran & Hoy, 2001). The internal consistency reliabilities for these factors were 0.82 for engagement, 0.81 for instruction, and 0.72 for classroom management (Tschannen-Moran & Hoy, 2001). The authors used a third study to refine the instrument further and included 183 teacher participants. During this study, the instrument was reduced from 36 items to 24 items, selecting the eight items with the highest loading in each factor. The reliability continued to be high at 0.86 for management, 0.86 for instruction, and 0.81 for engagement. Additionally, the authors created a short version of the scale with only 12 items (Tschannen-Moran & Hoy, 2001).

The reliability, validity, and factor analysis of the Teacher Self-Efficacy Scale have been tested by many in the last years (Klassen et al., 2009). In a study by Klassen and colleagues (2009), the validity of the TSES was subject to testing in a study including five countries. The

study examined the validity of the short version of TSES, which has 12 items. The participants were selected using convenience sampling and included 1212 elementary and secondary teachers from Canada, Cyprus, Korea, Singapore, and the United States (Klassen et al., 2009). This study revealed solid evidence of invariance of factor forms, factor loadings, and factor variances and covariances among groups of teachers from culturally comparable regions in North America and East Asia (Klassen et al., 2009). The findings of this study reveal that items on the TSES have internal consistency across a wide range of contexts (Klassen et al., 2009). Additionally, the study showed strong similarities in bivariate correlation and high levels of internal reliability across all groups of teachers, supporting the instrument's validity (Klassen et al., 2009). The authors use the findings of the study to encourage educational researchers to use the TSES as a valid and reliable instrument in the broader range of settings (Klassen et al., 2009).

Section 3: Teachers' Professional Development Perceived Support

This section included a question about the hours of professional development in the area of technology integration pre and during pandemic. The response choices of this question ranged between 0-5 hours, 5-10 hours, 10-15 hours or more than 15 hours. Additionally, using a Likert scale of strongly disagree, disagree, neutral, agree or strongly agree, teachers responded six questions about their perceived support and valuable professional development opportunities they experience in the areas of student engagement, instructional strategies/practices, classroom management, and technology integration while implementing distance learning during the COVID-19 pandemic. This section of the instrument was used to conduct a descriptive analysis that will be presented in the following chapter (Appendix D).

Section 4: Basic demographic data

This section consisted of two questions and was designed to provide a profile of teachers participating in the study. These two questions asked about gender and ethnicity of the participants.

Data Collection Procedures

To follow ethical research rules, permission to conduct the study was asked from the Institutional Review Board (I.R.B.) at the University of Texas Rio Grande Valley. The I.R.B. request was made by filling out an application and sending in all the necessary paperwork, including information about the study's purpose and nature. The I.R.B. deemed the study exempt and recommended a simple individual consent to be included in the online survey. Following the addition of the individual consent (Appendix A), and the granting of the I.R.B.'s exemption letter (Appendix B), the researcher contacted the districts via email to seek participation approval. During phase one, after getting permission from the district to do the study, the researcher found the email addresses of the secondary principals and sent them an email sharing information about the study and their district's consent to participate. The principals were then asked to send that email to the teachers, inviting them to participate in the study and giving them a link to the survey. Two districts chose to send the survey via their special education directors instead of via the principals. The survey included three questions that filtered respondents to only allow special education teachers that met the set criteria. These questions asked if they were a certified special education teacher, if they taught students in special education in inclusion settings face-to-face before the pandemic, and if they taught students in special education in inclusion settings using distance learning during the pandemic. If the answer was yes to all of the questions, they could proceed to the survey. The survey was accessed through the email that gave participants access through a secured anonymous link to the Qualtrics Survey Platform. No additional emails were

sent to participants to gather any additional information. The survey did not include any personal indicators to maintain anonymity. The ethical responsibility of this study was to protect the people who took part from any harm, trouble, or embarrassment by keeping the information confidential (Coffelt, 2017). The target for this study was to obtain at least thirty surveys. A total of eighty participants responded or interacted with the survey. However, only thirty-five participants answered all the survey questions. They indicated they met the requirements of being special education certified teachers taught in inclusion settings pre and during the pandemic. The Statistics for the Social Sciences (SPSS) software was used to analyze the data.

Data Analysis Procedures

The data was obtained using the Qualtrics Survey Platform. Qualtrics stores all data obtained, which was later exported to the Statistics for the Social Sciences (SPSS). Subsequently, the data was analyzed using a two-way factorial analysis ANOVA, and a descriptive analysis. The null hypothesis was tested using an F-distribution with a .05. alpha level of significance.

Summary

This chapter provided the blueprint of the study. First, the questions and null hypotheses were delineated. Sampling procedures were established, notating the ethical procedures to select participants and maintain confidentiality. This study used a pre and post-survey facilitated online using Qualtrics X.M. to gather data. The review of data was conducted through a descriptive and exploratory analysis.

Additionally, a multivariate analysis was conducted to analyze the two modes of instruction, face to face pre-pandemic, and distance learning during pandemic, and the three self-efficacy domains of classroom management, instructional strategies, and student engagement.

All data was analyzed using the Statistics for the Social Sciences SSPS program. The results of this study will be thoroughly explained in the following chapter.

CHAPTER IV

RESEARCH FINDINGS AND RESULTS

The purpose of this study was to describe and compare the perception of special education teachers' self-efficacy during the COVID-19 pandemic using the mode of instruction of distance learning and their self-efficacy prior to the pandemic using the mode of instruction of face-to-face instruction. Additionally, this study compared three different self-efficacy domains including student engagement, instructional strategies and classroom management prior and during the pandemic. A two by three factorial design was utilized to analyze the interactions of the modes of instruction and self-efficacy domains. Furthermore, this dissertation analyzed perceived support and valuable professional development opportunities that teachers received from educational leaders during the pandemic. This chapter summarizes the research results derived from the study's data analytics. Survey data were collected and processed using quantitative statistical processes.

This chapter is broken up into four sections. The first section of the chapter consists of a demographic profile of the survey participants as well as demographic data pertaining to the participating district. Both a factorial analysis using a two-way ANOVA and a descriptive analysis are presented in the report's second and third sections, respectively. In the fourth section, there is a synopsis of the entire chapter.

Demographic Data of the School Districts

Eight districts located in the Southern area of Texas agreed to participate in the study. The districts included in the study vary in size; the smallest has less than 1,000 students in their total enrollment to the largest with more than thirty thousand students. Sixty to ninety percent of the students in these districts are considered economically disadvantaged. The percentages of special education students in the participating districts ranges between 7-12%. The percentages of students considered At Risk of failing or not graduating in the participating districts vary from 50-80%. The table below will present this information in more detail (Table 2).

Table 2

School Districts' Demographics

District	Total Enrollment	Special Education	Economic Disadvantaged	Hispanic/ Latino	At-Risk
District 1	>30,000	>7%	>80%	>90%	>60%
District 2	>20,000	>10%	>90%	>90%	>80%
District 3	>20,000	>10%	>70%	>90%	>50%
District 4	>10,000	>9%	>80%	>90%	>70%
District 5	>9,000	>8%	>60%	>90%	>60%
District 6	>3,000	>8%	>90%	>90%	>80%
District 7	>2,000	>8%	>80%	>90%	>70%
District 8	<1,000	>10%	>90%	>90%	>60%

Demographic Data of the Participants

A total of 80 participants interacted with the survey sent anonymous link. Only 34 of those participants were deemed to be eligible as they stated they were special education certified teachers that taught under both conditions pre and during pandemic using face to face and distance learning respectively and completed all questions of the survey. The participants

responded two questions related to gender and ethnicity. The results are presented as an informational piece in the following table (Table 3).

Table 3

Participants' Demographics

Category	Descriptor	N	Percent	M	Std. Deviation
Gender	Male	9	26	1.74	.44
	Female	26	74		
Ethnicity	Caucasian	5	14		
	Hispanic	29	83	2.06	1.26
	Prefer not to share	1	3		

Addressing the Research Questions

Analysis of Variance ANOVA

An experimental design known as a repeated measure design assesses each participant on the dependent variables many times using the same measuring instrument (Girden, 1992; Minke, 1997). At each of the several points in time when the participant is assessed, the independent variable or factor presents itself in a distinct form (Lamb, 2003). This is referred to as a factor that exists inside the subjects (Lamb, 2003; Minke, 1997; Potvin, 1996). For this study the factors are described as modes of instruction. The obtained data of the present study was analyzed with a two-way factorial analysis of variance with both factors repeated measures/within subjects (2x3). The first factor was modes of instruction, face to face and

distance learning. The second factor was the self-efficacy domains of student engagement, instructional strategies, and classroom management.

To address the first and second questions a two-way ANNOVA factorial analysis was conducted. The null hypotheses for the present study were tested with an F-distribution at the 0.5 level of significance.

Question 1: The first research question, hypothesis and null hypothesis that guided the present study are the following:

RQ_1: Is there is a difference between modes of instruction, face to face and distance learning?

H_1: There is a difference between modes of instruction, face to face and distance learning.

H_O1: There is no difference between modes of instruction, face to face and distance learning.

The first null hypothesis for the present study related to modes of instructions was tested with an F distribution at the .05 level of significance. The obtained data for the present study rejected the null hypothesis stating that there is no difference between modes of instruction, face to face and distance learning $F=156.00$ ($df=1, 34$), $P<.05$; $P<.01$; $P<.001$. Therefore, according to the results of the study, there is a difference in modes of instruction in favor of face to face with a mean value of 36.54 and distance learning with a mean value of 22.91. Based on the practical/ functional significance of a partial eta square of .82 in modes of instruction, face to face and distance learning, a strong/large effect size was derived (See Table 4).

Question 2: The second research question, hypothesis and null hypothesis that guided the present study are the following:

RQ_2: Is there a difference among the self-efficacy domains of student engagement, instructional strategies and classroom management?

H_2: There is a difference among the self-efficacy domains of student engagement, instructional strategies and classroom management.

H_{O2}: There is no difference among the self-efficacy domains of student engagement, instructional strategies and classroom management.

The second null hypothesis for the present study related to self-efficacy domains was tested with an F distribution at the .05 level of significance. The obtained data for the present study rejected the null hypothesis stating that there is no difference among self-efficacy domains, student engagement, instructional strategies, and classroom management with a value of $F=9.75$ ($df=2, 68$), $P<.05$; $P<.01$; $P<.001$ (See Table 4). Consequently, there is a difference among self-efficacy domains in favor of self-efficacy in instructional strategies with a mean value of 30.74, followed in magnitude by self-efficacy in classroom management with a mean value of 29.74, and self-efficacy in classroom management with a mean value of 28.67. Based on the practical/ functional significance of a partial eta square of .21 in the self-efficacy domains, a small/weak effect size was derived (See Table 4)

Table 4

Summary of Variation ANOVA

Variation	SS	df	MS	F	Partial eta square
Between Subjects	2060.31	34	60.60		.82
Between Modes of Instruction	9764.88	1	9764.88	156.00*	
"error" W1	2128.12	34	62.59		
Between Domains	148.15	2	62.59	9.75*	.21
"error" W2	544.51	68	8.01		
Between Modes of Instruction and SE Domains	84.72	1	42.36	10.46*	.24
"error" W3	2275.28	34			
Total	15005.97	209			

Note: *The assumption of sphericity in the interaction effect between modes of instruction and self-efficacy domains could not be assumed and thus the conservative degrees of freedom lower bound were used.

*P<.05; **P<.01; ***P<.001

Question 3: The third research question, hypothesis and null hypothesis that guided the present study are the following:

$RQ_{3:}$ Is there an interaction between the modes of instruction and self-efficacy domains?

H_3: There is an interaction between the modes of instruction and self-efficacy domains

H_{O3}: There is no interaction between the modes of instruction and self-efficacy domains.

The third null hypothesis for the present study related to the interaction between modes of instruction (face to face and distance learning) and self-efficacy domains (self-efficacy in student engagement, self-efficacy in instructional strategies, and self-efficacy in classroom management) was tested with an F distribution at the .05 level of significance.

An ANOVA pairwise comparison was conducted to assess whether significant differences/interactions exist amongst all the variables. The obtained data for the present study rejected the null hypothesis stating that there is no interaction between modes of instruction and self-efficacy domains with a value of $F=10.46$ ($df=1, 34$), $P<.05$; $P<.01$; $P<.001$ (See Table 5). Therefore, there is an interaction effect in favor of the face to face modes and conditions (See Table 5). Based on the practical or functional significance of a partial eta squared of .24 in the interactions between modes of instruction and self-efficacy domains, a small or weak effect size was derived (See Table 5).

The pairwise comparisons analysis conducted proved that there is a significant difference at the means in all combinations of modes of instruction face to face prior to the COVID-19 pandemic and the distance learning mode of instruction implemented during the pandemic and the self-efficacy domains of student engagement, instructional strategies, and classroom management as delineated in Table 5.

Descriptive Analysis

A descriptive analysis was conducted to address the fourth and last question of the study, the results are summarized in Table 6.

Question 4: What supports including professional development did special education teachers received and considered valuable during the COVID-19 pandemic when using distance learning?

Table 5

Pairwise Comparisons

Modes of Instruction	Self-Efficacy Domains	Self-Efficacy Domains	Mean Difference	Std. Error	P
Face to Face	Student Engagement	Instructional Strategies	-.914*	0.45	.050
		Classroom Management	-1.400*	0.42	0.002
	Instructional Strategies	Student Engagement	.914*	0.45	0.05
		Classroom Management	-0.486	0.339	0.161**
	Classroom Management	Student Engagement	1.400*	0.42	0.002
		Instructional Strategies	0.486	0.339	0.161**
Distance Learning	Student Engagement	Instructional Strategies	-3.200*	0.733	0
		Classroom Management	-0.714	0.572	0.22**
	Instructional Strategies	Student Engagement	3.200*	0.733	0
		Classroom Management	2.486*	0.842	0.006
	Classroom Management	Student Engagement	0.714	0.572	0.22**
		Instructional Strategies	-2.486*	0.842	0.006

*. The mean difference is significant at the .05 level. ** The mean difference is NOT significant at the .05 level.

Table 6

Valuable Professional Development and Support

Variable	n	M	SD	%				
				Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was given the support I need professionally	35	3.46	1.09	6	11.43	31.43	34.29	17
I was provided valuable professional development relevant to classroom management through distance learning	35	3.23	1.17	9	20	22.86	37.14	11
I was provided valuable professional development relevant to student engagement through distance learning	35	3.43	1.24	9	17.14	17.14	37.14	20
I was provided valuable professional development relevant to instructional practices through distance learning	35	3.46	1.24	9.00	14.29	22.86	31.43	23.00
The professional development received in technology integration during distance learning was valuable and helped me do my job better	35	3.69	1.18	6.00	11.43	20.00	34.29	29.00
Overall, I was provided valuable professional development opportunities during the COVID-19 pandemic	35	3.51	1.07	6.00	8.57	31.43	37.14	17.00

The participants of the study also shared the number of hours of valuable professional development pre and during pandemic (Table 7). According to the findings, 72 percent of the participant teachers received more than 10 hours of valuable professional development during the COVID-19 pandemic when they were using distance learning as a mode of instruction as compared to pre-pandemic where 66 percent of the teachers received between 0-10 hours of valuable professional development.

Table 7

Valuable Professional Development Hours

Hours of Valuable Professional Development	N	Pre-Pandemic		During Pandemic	
		N	%	N	%
0-5	35	13	37	7	20
5-10	35	10	29	3	9
10-15	35	6	17	9	26
15 or more	35	6	17	16	46

Summary

This study used a two-way ANOVA analysis of variance to reject the first two null hypotheses presented in the study. A pairwise analysis was conducted and analyzed to examine the interactions between modes of instruction and self-efficacy domains. This analysis demonstrated an interaction among variables. Additionally, a descriptive statistical analysis was presented to demonstrate teachers' perceived support and valued professional development opportunities received during the COVID-19 pandemic while they were teaching using the distance learning mode of instruction. A deeper discussion of the results and their implications

CHAPTER V

DISCUSSION, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Teachers' self-efficacy has been identified as a fundamental predictor of children's academic and behavioral success, including special education pupils (Bandura et al., 1999; Özokcu, 2017). Paneque and Barbetta (2006) and Sharma (2012) support the notion that teachers' self-efficacy significantly influences their capacity to adopt successful inclusion techniques that will positively impact children in special education. Self-efficacy in special education has been examined in various contexts; however, the school closures caused by the COVID-19 pandemic have produced a scenario that needs to be adequately investigated. Comparing the self-efficacy of special education instructors who taught using conventional face-to-face techniques before to the pandemic to their self-efficacy during the pandemic-induced distance learning needs to be thoroughly researched. (Glessner & Johnson, 2020).

This study was designed to examine and compare the perception of special education teachers' self-efficacy during the COVID-19 pandemic using the mode of distance education to their self-efficacy prior to the pandemic incorporating face-to-face instruction. The purpose of this descriptive comparative study within topics is to uncover similarities and variations across conditions of the mode of instruction across the domains of classroom management, student involvement, and instructional methods. In addition, the study aimed to investigate and describe teachers' perception of valuable professional development supplied during the pandemic by school leaders.

Discussion of Findings

The findings of the study indicated that special education teachers' self-efficacy demonstrated significant differences between the two contexts and modes of instruction, pre-pandemic face to face, and during pandemic using distance learning. Special education teachers perceived themselves as more efficacious when instructing face to face prior the COVID-19 pandemic. According to the findings of the research, there is a significant difference between face-to-face and distant learning, with face-to-face having a mean value of 36.54 and distance learning having a mean value of 22.91. Based on the practical or functional importance of a partial eta square of 0.82 in modes of teaching, face-to-face and distance learning, a large/powerful effect size was determined.

The results obtained support the first hypothesis included in the study and rejected the null hypothesis. Additionally, the results align with other studies and their findings presented in the review of literature of this dissertation. Pressley and Ha (2021) conducted a study to examine and compare elementary and high school teachers' self-efficacy during and after pandemic using face to face, hybrid and distance learning modes of instruction. Similarly, to the results of this study, Presley and Ha found that teachers felt uncertainty while delivering distance learning affecting their self-efficacy. Even though both studies present differences in teachers' self-efficacy's, the population of the studies differ as Pressley and Ha (2021) did not include special education teachers. The results suggest that the change of mode of instruction presented a challenge for teachers that caused a lower sense of self-efficacy.

The second hypothesis presented in the study stated there is a difference among the self-efficacy domains of student engagement, instructional strategies and classroom management. The findings of the study suggest that there is a difference in self-efficacy domains, with self-

efficacy in instructional strategies having the highest mean value (30.74), followed by self-efficacy in classroom management (29.74) and self-efficacy in classroom management (28.67). However only a small or weak effect size was inferred from the practical or functional significance of a partial eta square of.21 in the self-efficacy domains. The null hypothesis was rejected by using the test with an F distribution at the .05 level of significance. Teachers felt more comfortable implementing instructional strategies when compared to the other two domains. Additionally, the study found that teachers 54.43% agreed or strongly agreed when they were asked if they were provided valuable professional development relevant to instructional practices or strategies during distance learning. In contrast, 23.29 % of the teachers did not agree or strongly disagree with that statement and 22.86% felt neutral.

The findings of the study supported the third hypothesis as well that predicted an interaction among modes of instruction and self-efficacy domains. A pairwise ANOVA was performed to see whether there are differences or interactions between factors. With a score of F=10.4, the current study's findings rejected the null hypothesis.

The final and last question addressed by the study did not present a hypothesis. This part of the study prompted a descriptive analysis to gain an understanding of the valuable supports as form of professional development opportunities that they considered valuable during the pandemic. In this part of the study, 9% of the teachers strongly disagreed when they were asked if the they received valuable professional development in the areas of classroom management, instructional practices or strategies, or student engagement during the COVI 19 pandemic. Only 6% of the teachers strongly disagreed when they were asked if the they received valuable support, professional development in the area of technology integration, and overall valuable professional development opportunities. Furthermore, the percentage of teachers that disagreed

range between 20 to 8 percent in valuable PD in classroom management, student engagement, instructional practices, support, technology integration, and overall value of professional development respectively. Between 17 to 31 percent of the teachers participating in the study remained neutral when asked all these statements. Additionally, the range of teachers that agreed with the statements ranged between 31 to 37 percent respectively in PD for instructional practices, technology integration, general support, and classroom management, student engagement, and overall valuable professional development.

Implications for Leaders in Education

In 2020, the world faced a global pandemic that caused massive school closures to mitigate the spread of the COVID-19. Leaders in education, teachers and stakeholders were certainly not fully prepared for the challenges created by the COVID-19 global pandemic (Canzi et al., 2021; Chandasiri, 2020; Esposito et al., 2021; Hawrilenko et al., 2021; Hoffman & Miller, 2020; Kishida et al., 2021; Pfefferbaum, 2021; Tang et al., 2021; Nusser, 2021; Parmigiani et al., 2020; Robinson et al., 2020). The rapid transition to distance learning created significant challenges for educators. The confirmatory findings of this study validate the notion that the COVID-19 pandemic and the adoption of distance learning impacted special education teachers self-efiicacy (Chandasiri, 2020; Nusser, 2021; Parmigiani et al., 2020; Rasmitadila et al., 2020; Reimers, 2021; Robinson et al., 2020; Supratiwi et al., 2021; Tarkar, 2020; Viner et al., 2020; Yamamura & Tsustsui, 2021). Researchers emphasize the significance of leaders supporting teachers' self-efficacy, as it positively connects with student performance, conduct, motivation, and other educational domains that contribute to students' success (Bandura et al., 1997; Tschannen-Moran, Hoy, & Hoy, 1998; Pajares, 1996). However, according to Tschannen-Moran, Woofolk Hoy, and Hoy (1998), an educator's sense of self-efficacy is dependent on the

specific context, As a result, in order to help mitigate the negative impacts of possible future emergent transitions to the distance learning, it is important that leaders build plans that incorporate valuable professional development opportunities in the context of distance learning. Furthermore, the present study confirms the need for professional development in the areas of student engagement, instructional strategies, classroom management and technology integration for special education teachers in the context of distance learning modality. By gaining a grasp of teachers' perceived competence as well as the elements that contribute to it, educational leaders can direct future efforts at building and improving teachers' capacities as well as a robust feeling of self-efficacy (Bandura, 1993; Lemon & Garvis, 2016).

Implications for Researchers

The findings of the current study reveal that special education teachers' self-efficacy was impacted during the COVID-19 pandemic. The use of self-efficacy as a theoretical foundation in this study has the potential to contribute to the existing body of work in the field and to add a knowledge framework for leaders working with special education educators, an area that is great need. A recommendation for future research includes implementing longitudinal studies to determine whether special education teachers' self-efficacy continues to be challenging after teachers gain more exposure to distance learning. Another potential recommendation for future research includes extending this research to adopt a qualitative approach that includes teacher interviews. This type of approach will allow researchers to gain a a rich and deep understanding of the teachers' perceptions regarding the challenges faced during the COVID-19 pandemic and the implementation of distance learning and the impact it had in their self-efficacy. A mixed-method approach would also allow for deeper dive into specific challenges that could have impacted the teachers' self-efficacy.

Additionally, as technology has advanced and more teachers have taught online since the COVID-19 pandemic, it may be necessary to reexamine the current tools for measuring technology integration self-efficacy during distance learning. Additionally, it is crucial to include possible tools or interventions to help special education teachers overcome challenges in self-efficacy when using distance learning.

Limitations

A notable limitation has been identified in this investigation. The extent to which teachers had access to the appropriate tools necessary to offer distance learning was not considered. However, it may have an effect on how they perceive their own level of self-efficacy. In addition to this, the research only included the perceptions of secondary special education teachers.

As a result of the location of the several school districts that took part in the research this study has certain inherent limitations. The teachers that took part in this research are from only one specific area in South Texas. The regional education area that was chosen has districts that have a disproportionately high number of students that fall under the category of being economically disadvantaged. In addition, the number of students who are at danger of not graduating from high school is very high in comparison to other educational zones in the state of Texas. The extent to which these local characteristics may be generalized is a matter of contention.

Summary

This study described and compared the perception of special education teachers' self-efficacy during the COVID-19 pandemic using the practice of distance and their self-efficacy prior to the pandemic using face-to-face instruction. Additionally, the study described the helpful

supports that teachers received from educational leaders during the pandemic. The study was conducted in the region of Texas that is the most southern. This research was conducted with the participation of eight different school districts, which resulted in a total of 35 eligible participants. The three presented hypotheses were validated by the data acquired for this research, and the three null hypotheses were rejected as a result of the practical significance values of the hypotheses. The outcomes of this dissertation contribute to the limited amount of research that has been done in the field of special education teachers' perceptions of their own levels of self-efficacy while employing the method of distant learning. In addition, the purpose of the study is to assist educational leaders in building the capacity of their special education teachers by providing context-specific professional development support to enhance the teachers' sense of self-efficacy in preparation for the potential emergence of distance learning in the near future.

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APPENDIX A

APPENDIX A

PARTICIPANT'S CONSENT

Hello, thank you for participating in this survey.

This research study is being conducted by Vanessa Leal, Graduate Student at The University of Texas Rio Grande Valley The purpose of this study is to describe and compare special education teachers' self-efficacy amid the COVID-19 pandemic using the practice of distance and their self-efficacy pre-pandemic using face-to-face instruction.

Participation should take about 15-25 minutes to complete. Participation in this research is completely voluntary. If there are any questions or parts of this study which you are uncomfortable completing, feel free to skip that question terminate your participation at any time without question or comment.

You must be at least 18 years old to participate. If you are not 18 or older, please do not participate. All survey responses received will be treated confidentially and stored on a secure server. However, given that the surveys can be completed from any computer (e.g., personal, work, school), there is no guarantee of the security of the computer on which you choose to enter your responses. As a participant in this study, please be aware that certain technologies exist that can be used to monitor or record data and/or websites that are visited.

This research has been reviewed and approved by the University of Texas Rio Grande Valley Institutional Review Board for Human Subjects Protection (IRB). If you have any questions about your rights as a participant, or if you feel that your rights as a participant were not adequately met by the researcher, please contact the IRB at (956) 665-3598 or irb@utrgv.edu.

Thank you for participating!

Do you agree to participate in this study by completing the following survey?

Yes

No

APPENDIX B

APPENDIX B

IRB EXEMPT DETERMINATION FORM

The University of Texas Rio Grande Valley
Institutional Review Board

September 8, 2022

Vanessa Leal, Principal Investigator
Department: College of Education
Via Electronic Routing System

Dear Principal Investigator:

RE: EXEMPT DETRMINATION FOR IRB-22-0100 "SPECIAL EDUCATION TEACHERS' SELF-EFFICACY DURING THE TIMES OF A GLOBAL PANDEMIC "

The study in reference has been determined 'Exempt' under the Basic HHS Policy for Protection of Human Research Subjects, 45 CFR 46.104(d). The determination is effective as of the date of this letter within the exempt category of:

> ***"(2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) and***
>
> ***(i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects;***

Research that is determined to be 'Exempt' under the Basic HHS Policy for Protection of Human Research Subjects is not exempt from ensuring protection of human subjects. The Principal Investigator (PI) is responsible for the following through the conduct of the research study:

1. **Assuring that all investigators and co-principal investigators are trained in the ethical principles, relevant federal regulations, and institutional policies governing human subjects' research.**
2. **Disclosing to the subjects that the activities involve research, and that participation is voluntary during the informed consent process.**
3. **Providing subjects with pertinent information (e.g., risks and benefits, contact information for investigators, and IRB/ORC) and ensuring that human subjects will voluntarily consent to participate in the research when appropriate (e.g., surveys, interviews).**
4. **Assuring the subjects will be selected equitably, so that the risks and benefits of the research are justly distributed.**
5. **Assuring that the privacy of subjects and confidentiality of the research data will be maintained appropriately to ensure minimal risk to subjects.**

Exempt research is subject to the ethical principles articulated in The Belmont Report, found at the Office of Human Research Protections (OHRP) Website:
www.hhs.gov/ohrp/humansubjects/guidance/belmont.html

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APPENDIX C

APPENDIX C

TEACHERS' SENSE OF EFFICACY SCALE PERMISSION LETTER

ANITA WOOLFOLK HOY, PH.D.

PROFESSOR
PSYCHOLOGICAL STUDIES IN EDUCATION

Dear

You have my permission to use the *Teachers' Sense of Efficacy Scale* in your research. A copy the scoring instructions can be found at:

http://u.osu.edu/hoy.17/research/instruments/

Best wishes in your work,

Anita Woolfolk Hoy

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APPENDIX D

APPENDIX D

TEACHERS' SENSE OF EFFICACY SCALE

Teachers' Sense of Efficacy Scale[1] (long form)

Teacher Beliefs	How much can you do?								
Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2. How much can you do to help your students think critically?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3. How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4. How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5. To what extent can you make your expectations clear about student behavior?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7. How well can you respond to difficult questions from your students ?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8. How well can you establish routines to keep activities running smoothly?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9. How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10. How much can you gauge student comprehension of what you have taught?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11. To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12. How much can you do to foster student creativity?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
13. How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
14. How much can you do to improve the understanding of a student who is failing?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15. How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
16. How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
17. How much can you do to adjust your lessons to the proper level for individual students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
18. How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
19. How well can you keep a few problem students form ruining an entire lesson?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
20. To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
21. How well can you respond to defiant students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
22. How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
23. How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
24. How well can you provide appropriate challenges for very capable students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

APPENDIX E

APPENDIX E

RESEARCHER CREATED QUESTIONS

How many hours of professional development in the area of technology integration did you have?

Technology integration is the use of technology resources such as computers, mobile devices like smartphones and tablets, digital cameras, social media platforms and networks, software applications, the Internet, etc. in daily classroom practices, and in the management of a school.

	0-5	5-10	10-15	15 or more
Before COVID-19 Pandemic. Face-to-face Traditional Setting.	○	○	○	○
During COVID-19 Pandemic. Distance Learning Setting	○	○	○	○

During the COVID-19 Pandemic and while you were teaching through DISTANCE LEARNING
Please indicate your level of agreement with the following statements

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I was given the support I need professionally	○	○	○	○	○
I was provided valuable professional development relevant to classroom management through distance learning	○	○	○	○	○
I was provided valuable professional development relevant to student engagement through distance learning	○	○	○	○	○
I was provided valuable professional development relevant to instructional practices through distance learning	○	○	○	○	○
The professional development received in technology integration during distance learning was valuable and helped me do my job better	○	○	○	○	○
Overall I was provided valuable professional development opportunities during the COVID-19 pandemic	○	○	○	○	○

Gender

- Male
- Female
- Non-binary / third gender
- Prefer not to say

Please specify your ethnicity.

- Caucasian
- Latino or Hispanic
- African-American
- Asian
- Native American
- Native Hawaiian or Pacific Islander
- Two or More
- Other/Unknown
- Prefer not to say

BIBLIOGRAPHICAL SKETCH

Vanessa G. Leal received her bachelor's degree in Interdisciplinary Studies with a concentration in Special Education from the University of Texas Pan-American in 2010. Vanessa got her Master of Education in Special Education two years later. At the time, she was working as a self-contained teacher. A lifelong learner, Vanessa continued her studies, receiving her principal and superintendent certifications. During her 13 years in the educational field, she has had the opportunity to serve her community as a teacher, behavior strategist, school improvement facilitator, assistant principal, and district director of curriculum and instruction. Vanessa continues to make progress toward her longstanding goal of becoming her own legend and a role model for her children and other first-generation Mexican-American girls. In December 2022, she earned her Doctorate in Education from the University of Texas Rio Grande Valley.

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