SPECIAL EDUCATION TEACHERS' PERCEPTION OF VIDEO MODELING

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DEDICATION

To my beloved wife Constance Sefah, your faith and love in me have taught me the greatest lesson of faith in God. To my dear father and dad, Dan Sefah, whose steadfast faith in God through the many trials and challenges of raising five respectable and successful children inspired me to believe that nothing is impossible. To the Lord Jesus Christ, the author and Finisher of my faith. Thank you for giving me a second chance.

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ABSTRACT

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The current study investigated special education teachers' perception on video modeling (VM) intervention to improve the skills of students with disabilities using survey methodology. The study was conducted to determine if special education teacher characteristics (grade-level assignments, age, educational level, instructional setting, years of teaching, work location, and training influence their perception of VM, the differences in the perception of VM use among special education teachers who teach in elementary, middle, and high school, and the relationship between special education teachers' training and their confidence in the use of VM.

According to 235 special education teachers (K-12) who responded to the survey, 76.6% strongly agreed or agreed that using VM benefits students with disabilities. ANOVA results showed significant differences in the perception of VM based on years of teaching. Special education teachers' perception of VM significantly differed between teachers with 0 - 5 years of experience and teachers with 6 -10 years of experience. Special education teachers with less experience were more likely to use VM. No significant differences were found in special education teachers' perception of VM based on teachers' grade-level assignments, age, educational level, instructional setting, years of teaching, work location, and training. Based on regression analysis special education teacher training of VM use positively correlates with their confidence in using VM. Findings may guide future research in implementing and training special education teachers to use VM to teach students with disabilities.

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CHAPTER I

INTRODUCTION

Overview

Students with disabilities typically may have cognitive deficits (Dowker, 2020; Miciak et al., 2014), social interaction and communication difficulties (Matson et al., 2007; Reed et al., 2011; Weiss & Harris, 2001), behavioral and emotional problems (Alzrayer et al., 2017; Kurkcuoglu, 2015), or academic weakness (Fletcher & Vaughn, 2009) that impede their overall success in life. Providing children with disabilities with the best opportunities for success in and outside the school setting means considering their needs and the milieu they function. Researchers have found that video modeling (VM) can be used to improve the life outcomes of students with disabilities (Acar & Diken, 2012; Corbett & Abdullah, 2005; McCoy & Hermansen, 2007).

In the last decades, several studies have demonstrated that VM is an effective method for teaching students with disabilities various skills and behaviors (Acar & Diken, 2012; Bellini & Akullian, 2007). For example, VM was used to help individuals with moderate intellectual disabilities (ID) learn how to prepare meals (Rehfeldt et al., 2003), organize household items (Mechling et al., 2014), promote products within a retail establishment (Allen et al., 2012), extinguish cooking related fires (Mechling et al., 2009), and express wants and needs (O'Handley et al., 2016). In these studies, VM positively impacted skills acquisition following exposure to the intervention, showing that VM can assist students with disabilities in learning and acquiring skills by watching others and modeling what they do or say. This is called observational learning (Özerk & Özerk, 2015).

Observational Learning

Observational learning (learning by observation) occurs when we observe other people's actions or a model (Struve & Wandke, 2009). Observational learning is essential for skill acquisition and integral to successful inclusion in a general education setting. Observational learning is rooted in Albert Bandura's theory (Bandura, 1977). He stated that skills could be acquired through modeling based on his social cognitive and observational learning theories. Children grow by watching and learning from a wide range of people in their environment, such as their parents, friends, peers, and teachers (Ma et al., 2018; Taylor & DeQuinzo, 2012; Varni et al., 1979). These individuals are viewed as role models and children are inspired by them. As children observe the behavior of these individuals, they imitate the behaviors.

The idea behind VM can be explained as a form of observational learning whereby the child observes the behavior of a model and imitates it to the best of their ability. VM is a strategy for supporting skill development via imitation (Wynkoop et al., 2020). Observing and learning from models increases the likelihood that individuals with disabilities can imitate desired behaviors and skills (Ayres & Langone, 2005; Bellini & Akullian, 2007; Clark et al., 1992), participate more actively in task-related activities (Monaco et al., 2018), develop problem–solving and critical thinking (Collins et al., 2009; Wijnia & Baars, 2021; Yakubova et al., 2015), and experience classroom learning in a real–world setting.

Students with disabilities are often taught communication, academic, social, and self–help skills using video recording on electronic devices to improve their overall success in life. On an iPad, for instance, children can watch a video that shows a model demonstrating a specific behavior or skill and then replicate that behavior or skill themselves. Videos are not a new concept for supporting learning and have been used for decades. From various theoretical

perspectives, videos may help teach academic skills such as math, community, communication, or social skills (Ayres & Langone, 2008).

As a teaching strategy, VM has been found effective with children (Shepley et al., 2019) and adults (Olçay Gül , 2016). Both school children and adults have successfully been taught various skills using VM (Kutty, 2012; Perkins, 2013). It is also possible to use VM with students with a variety of disabilities, including students with autism spectrum disorders (ASD; Kellems & Morningstar, 2012), ID (Olçay Gül, 2016), multiple disabilities (Cannella-Malone et al., 2013), gross motor impairment (Mechling et al., 2012), and Williams syndrome (Taber-Doughty et al., 2011).

Also, VM has been used in a wide variety of settings, including teacher workrooms (Shepley et al., 2018), retail environments (Çattık & Ergenekon, 2018), local car washes (Lee et al., 2020), private schools (Kanfush & Jaffe, 2019), and dormitories of university campuses (Bridges et al., 2020).

Video Modeling as a Tool for Observation Learning

In VM, teachers record videos of the desired behavior or skills students are expected to learn with an adult or peer serving as a model (Charlop-Christy et al., 2000; Mason, Rispoli et al., 2012; Oh-Young et al., 2018). These videos, which often contain images and sounds, are then played back for students to watch on television, iPad, computer, tablet, or smartphone to learn and practice, as demonstrated in the video.

VM in various situations has benefited individuals with disabilities in learning different skills and behavior patterns (Shipley-Benamou et al., 2002; Shukla-Mehta et al., 2010) because they are able to observe and construct an idea of how to perform the new behavior/skill. For example, VM may be used to teach academic skills (e.g., math, reading, and science), social

communication skills (Ahmad & Zulkharnain, 2020; Laver & Wilkes-Gillan, 2018; Park et al., 2020), job skills (Goh & Bambara, 2013; Lee et al., 2020; Rausa et al., 2016), and reduce behavioral problems (Sadler, 2019). It also supports individuals with ASD in developing and maintaining social skills (Ayres & Langone, 2008; Mason, Ganz et al., 2012).

Statement of the Problem

Research indicates that VM can be effective as a teaching intervention for students with disabilities; however, there has not been enough research on how special education teachers perceive the intervention. VM is hailed as effective; however, it seems to be underutilized in practice. Abualsamid and Hughes (2017) sought to explore why teachers did not use VM in special needs classrooms. Based on the survey, 25% of special education teachers across several schools are familiar with VM and have used it in the past. However, 42.5% of respondents confessed using other applications and apps to support students with disabilities.

So far, only one study has evaluated special education teachers' perception of VM (Wynkoop et al., 2020). The study surveyed special education teachers about their perspectives on the use and perception of VM interventions to improve the skills of students with disabilities. The researcher's objective of the study was to estimate the number of teachers who used VM and identified where, with whom, and with what kinds of skills VM could be used. Also, the study sought to identify potential hurdles or barriers that could hinder or prevent teachers from implementing VM. Results indicated that only 26.1% of participants reported using VM with students. Lack of training, access to necessary resources, and time to create videos were the most common barriers to VM use.

To date, no studies were found in the literature that explicitly examines special education teachers' perceptions of VM. Using descriptive statistics, analysis of variance (ANOVA), and

linear regression (LR), this study adds to the current literature by identifying variables that may influence special education teachers' perceptions of VM use.

Rational and Research Questions

The study investigated special education teachers' perception of VM's use to teach students with disabilities. Special education teachers' perception of VM has not been sufficiently investigated; therefore, the following research questions were examined:

(a) What is special education teachers' perceptions of VM?

(b) What are the differences in teachers' perceptions of VM among special education teachers' demographic variables (grade, age, educational level, instructional setting, years of teaching, work location, and teacher training)?

(c) What is the relationship among special education teachers' training of VM Use and their confidence?

Research Hypotheses

The research hypotheses were as follows:

(a) There will be statistically significant differences in demographic variables (age, education level, years of teaching, grade level (elementary, middle, high school), teaching setting (resource room, self-contained, behavior classroom, other), location (urban, suburban, rural), and VM training that affects VM use.

(b) There will be significant differences in the perception of VM use by special education teachers who teach in elementary, middle, and high school that affects VM use.

(c) There will be a statistically significant relationship between special education teachers' training of VM use and confidence.

CHAPTER II

LITERATURE REVIEW

VM as an Evidence-Based Practice

Several research–based classroom practices can benefit students with disabilities. Educators are encouraged to make decisions based on best practices in the classroom that are based on research and supported by scientific evidence (Simonsen et al., 2008). Using VM in the classroom can provide special education teachers with tools to support the learning of students with disabilities so they can succeed in life. VM interventions are evidence–based practices (EBPs) intended to assist students with disabilities in developing skills through observation and imitation (Apple et al., 2005; D'Ateno et al., 2003). VM is based on Albert Bandura's social learning theory (1977), which states that children can learn many skills and behaviors through observation. As children observe others, they can imitate new behaviors and learn new skills. For example, research was conducted to identify whether filming a functional task from the participant's point of view (child's eye level) could accelerate skill acquisition for children with ASD. The introduction of the video intervention resulted in a dramatic increase in the number of correct responses among all three children involved in the study, promoting skill acquisition (Shipley–Benamou et al., 2002).

VMs come in wide varieties, each of which can be as effective and efficient as the other in helping students with disabilities gain skills through observation and imitation. Among these are basic VM (Murray & Noland, 2012), video self-modeling (Buggey & Ogle, 2012; Hitchcock et al., 2003; Hong et al., 2016; Prater et al., 2012), point of view VM (Hong et al., 2016; Mason et al., 2013), video prompting (VP; Cannella-Malone et al., 2011; Sigafoos et al., 2005), and continuous VM (Mechling et al., 2014), which has recently been investigated. Kellems and

Edwards (2016) explained the types of VMs, their key characteristics, and how VM can be used to teach academic content in various contexts.

Research has demonstrated that VM is an effective interventions for teaching various skills to children and adults. For example, VM was effective in teaching meal preparation skills to adolescents with moderate or severe disabilities (Kanfush & Jaffe, 2019) and teaching car wash skills to adolescents with ID and ASD at a local car wash (Lee et al., 2020). In addition, VM was used to teach skills related to first aid to three children (two females and one male) between the ages of 9 and 14 who have ID (Ozkan, 2013) in the guidance teacher's room. Further, VM was used for teaching independent living skills to four students in middle school with ASD and ID (Wynkoop et al., 2018) as well as for teaching job skills to three adults with ID (two males, one female) in an employment setting (Goh, 2010). Participants in many of the studies demonstrated significant improvement in their ability to acquire skills after observing the models.

Aside from using VM for teaching various skills to children and adults with disabilities, VM implementation has benefited service providers. For example, VM has been used effectively to train direct–service staff to conduct discrete trial instructions (Catania et al., 2009), teachers to implement behavioral intervention (Digennaro-Reed et al., 2010) and perform functional analyses (Moore & Fisher, 2007), and implement paired stimulus preference assessments (Deliperi et al., 2015). Additionally, VM has been found effective in training respite care workers (Neef et al., 1991) and older adults to use new technology (Struve & Wandke, 2009). Furthermore, VM has been successfully used in teaching caregivers of children with ASD (Cardon, 2012), caregivers of family members with advanced cancer (Duggleby et al., 2007), as

well as training mothers in peer-to-peer manding (Madzharova & Sturmey, 2015), and toilet training (Fatmawati et al., 2020).

VM is being used more readily with students with ASD (Bellini & Akullian, 2007; Buggey, 2005; Gelbar et al., 2012; Wert & Neisworth, 2003) to enhance appropriate behaviors (Banda et al., 2007; Day–Watkins et al., 2018), improve social skills (Gul & Vuran, 2010; Nikopoulos & Keenan, 2004; Stauch et al., 2018), facilitate verbal and communication skills (Plavnick & Ferreri, 2011; Qi & Lin, 2012; Shukla–Mehta et al., 2010), for toilet training (Fatmawati et al., 2020; Keen et al., 2007; Kroeger & Sorensen–Burnworth, 2009; Lee et al., 2014), develop play skills (Sancho et al., 2010), and promote personal and oral hygiene skills (Doichinova et al., 2019; Piccin et al., 2018; Popple et al., 2016).

Furthermore, most of the literature on VM had at least one participant with two or more disabilities, such as students with ID and ASD (Kilincaslan et al., 2019; Mechling et al., 2014), students with ID and Down syndrome (Al–Mumen et al., 2019; Mechling et al., 2014), Prader–Willi syndrome and moderate ID (Kilincaslan et al., 2019), ID and a pervasive developmental disorder (Bross et al., 2020), and multiple disabilities (Kanfush & Jaffe, 2019).

Evidence Based Benefits of VM in the Classroom

Firstly, VM is visual-auditory. Using VM provides visual support to students with disabilities in acquiring new skills. Students with disabilities have been taught various skills through video-based instructional strategies for years (Banda et al., 2011). Videos provide cognitive, psychological, and visual benefits (Bellini & Akulllian, 2007; Pekdağ, 2010).

VM is visually appealing. The videos and audio are entertaining and enticing, encouraging students to learn (Ayres & Langone, 2005; Bellini & Akullian, 2007). Omar et al. (2020) mentioned that visual information enables learners to select relevant information, such as

words or images, organize it into coherent mental representations, and use it to learn a new skill. In VM, new behaviors and skills are taught to individuals with disabilities through modeling and visual cueing (Egarr & Storey, 2022). VMs can be a valuable tool for students to learn a skill, especially for students with ASD, who have superior visual abilities (Ayres & Langone, 2008; Kozleski, 1991; Remington et al., 2009). Using VM is learning through seeing and doing.

Students with disabilities often benefit from visual information, especially when observing a model or developing peers (Corbett & Abdullah, 2005). It is common for people to remember more details after watching a video (Kostereliogl u, 2016). Students who watch videos combined with audio are encouraged to think creatively and problem-solve. When VM is combined with verbal explanations, children may have a cognitive advantage that can enhance and optimize their conceptual understanding and problem-solving abilities (Struve & Wandke, 2009). Through VM, it is possible for students to leverage information to eliminate the use of one-size-fits-all approaches and for teachers to tailor the content of lessons for each student based on their needs and learning styles. Students with disabilities benefit from visual and auditory instruction (Ayres & Langone, 2008) because video clips are often enticing and entertaining to encourage participation. Two males and one female with ID were taught job-related skills using VM in an employment setting. As a result of VM implementation, all participants made some gains and, in several cases, achieved the criterion (Goh, 2010).

Many students struggle with courses such as algebra and geometry, which involve complex procedures and cognitive processes. Students with disabilities face even greater struggles when it comes to learning due to their cognitive and academic weaknesses (Brown & Alford, 1984; Compton et al., 2012). To supplement instruction and verbal information to help students solve word problems, educators sometimes use visual with auditory feedback to provide

students with visual representations of concepts (Satsangi et al., 2020). To determine if VM could be used to model instruction for students with learning disabilities, Satsangi et al. (2020) used VM to teach geometry word problems to three secondary students with a learning disability in mathematics. Using VM across a single subject's multiple baseline design, all three students demonstrated the ability to solve the problems across all measured dependent variables.

While it is imperative to teach students with disabilities specific skills, such as academic, adaptive, employment, and vocational skills, traditional face-to-face instruction may not always be the most effective method for some students. This indicates the need for other instructional methodologies that adhere to students' needs and support instructional areas, including vocational, employment, and social skills. For example, in multiple baselines across behaviors, Park et al. (2020) used VM to teach three young adults with ID social skills for employment. After watching the videos, the participants acquired the targeted skills. Similarly, Park et al. (2020) presented VM to three young adults with ID in an adult transition center to learn the social skills needed to work using VM with systematic least prompt. There was an improvement in targeted skills acquisition from baseline to intervention, but all participants had difficulty generalizing their responses.

Secondly, VM helps engage children in the learning process. Using videos in the teaching process benefits students (Alkan 1988). As Dale (1946) pointed out, videos make learning more meaningful and easier because more senses are used. In a study conducted by Kostereliogl (2016) to identify students' views regarding videos used in class, among students, it was believed that video clips enriched their learning process, increased their attention, prevented boredom, and allowed them to participate mentally and physically more in class.

Whether it is on a TV, computer, iPad, tablet, or even a smartphone, many kids enjoy the time they spend watching screen time on their devices. Bandura (1977) cited four critical components of VM: attention, retention, production, and motivation. VM assists learners in maintaining their attention as they observe and practice alongside models instead of simply listening to a teacher. When VM is used, the classroom transforms from a lecturer-centered learning environment to one based on student participation. In addition, VM is usually practical, hands-on, and engaging. This can help with retention, especially for children with ASD who have selective attention (Plaisted et al., 1999; Poole et al., 2018). Furthermore, videos are, in many ways, entertaining and motivating, which can help reinforce learning.

Thirdly, VM is hands-on and interactive**.** Interactive, hands-on sessions are crucial to mastering new computer technology skills, according to Padgett and Conceição -Runlee (2000). As Alley and Jansak (2001) pointed out, active learning occurs when students are engaged and focused on the activity at hand, are motivated by the use of technology, and can apply new skills. VM involves observing and modeling the behavior of others and applying them to a new situation.

Cuvo and Klatt's (1992) seminal research explored how video recordings could be used to teach reading to people with disabilities. Sight words were rapidly acquired in all three conditions. Researchers found that VM can assist students with learning disabilities in the fourth, fifth, and sixth grades to improve their learning skills and vocabulary (Xin & Rieth, 2001). In addition, a small group study by Norman et al. (2001) examined the effectiveness of a treatment package that included video technology (e.g., VM and VP) to teach three self-help skills to three elementary school students with mental disabilities. VM and VP were effective methods for students with disabilities to learn self-help skills.

Observing the model helps students with disabilities to reproduce the observed behavior. Students are then allowed to practice the target behavior as often as needed until they have acquired the skill. VM is interactive and facilitates participation. Having the opportunity to practice and watch a video of an expert performing the target skill is helpful for student-athletes to execute skills in sports such as swimming, gymnastics, and football. For example, four females (7-10 years old) were taught gymnastic skills by viewing a video segment. The participants demonstrated improved performance after watching an expert gymnast performing and practicing the skill. VM focuses on the learner-centered approach to education, where the special education teacher is a facilitator toward a solution. By incorporating VM in teaching, special education teachers can achieve deeper communication and responses with students with disabilities because VM is interactive, self-paced, and individualized to the needs of students with disabilities.

In addition, VM builds students' confidence**.** The use of VM can boost students' confidence. In modeling, there is a similarity between the model and the observer (Schunk, 1987). Students believe that if the model can perform a task, they can also. It has been found that people are more likely to respond to a model that they are familiar with (teachers, peers, siblings, parents, paraprofessionals) rather than a stranger (Kellems & Edwards, 2016). It has been suggested that by using a teacher as a model in the video, learners will be more attentive, thus priming a social response that will promote deeper cognitive processing and improved learning outcomes.

According to studies, when children watch a model's video, they will be more likely to focus on the face of the model, which may help the child learn (Gullberg & Holmqvist, 2006; Van Gog et al., 2014). In addition, children who observe a peer model (Egarr & Storey, 2022)

may be able to believe they can perform the same task as the model, which may increase their self-confidence. An increase in confidence can positively affect a student's academic motivation, study behavior, and educational outcomes (Bandura, 1977; Bong & Skaalvik, 2003).

The sixth benefit of VM is that it can supplement instruction. Over the years, VM has been compared with Vivo (Cannella-Malone et al., 2006), VP (Stierle et al., 2022; Taber-Doughty et al., 2011; Thomas et al., 2020), pictorial (Cihak, 2011), reciprocal imitation (Cardon & Wilcox, 2011), narration (Smith et al., 2013), text-based instruction (Tyner & Fienup, 2015), live modeling (Ergenekon et al., 2014), and pivotal response (Lydon et al., 2011) to determine which one is more efficient and yields better outcomes for students with disabilities. VM has also been combined with other strategies such as performance feedback (Digennaro-Reed et al., 2010), least-to-most prompting (Murzynski & Bourret, 2007), video feedback (Boyer et al., 2009), reinforcement (LeBlanc et al., 2003), task analysis (Anderson, 2020; Shrestha et al., 2013), embedded instructions (Rosales et al., 2015), auditory technology (Çattık & Ergenekon, 2018), speech generating devices (Copple et al., 2011), and a system of least prompts (Park et al., 2020) to teach students with disabilities to acquire targeted skills from baseline to intervention.

VM is often used with VP to maximize the viewer's ability to learn the skills and behaviors they are seeing. For example, VM and VP were used in the workplace to assist individuals with ASD in completing tracking tasks (Burke et al., 2013). In addition, VMs and VPs have been used to teach cooking skills to students with mild IDs (Taber-Doughty et al., 2011) and daily living skills to individuals with ASD (Gardner & Wolfe, 2013).

Additionally, VM has often been used in conjunction with reinforcement by selecting items or activities that are highly motivating for individuals with disabilities while learning a new skill. For example, VM, along with reinforcement, was used to teach perspective-taking

skills to three children with ASD as part of a multiple baseline design (LeBlanc et al., 2003), and the results were quite promising.

A teacher or practitioner can use VM to target a skill or behavior students lack. For example, VM targets behavior students are expected to learn using a videotape. The students observe what they see in the video, imitate, and adopt the targeted behavior or skill. As per Kellems and Edwards (2016), a need for appropriate skills, behaviors, and task identification is one of the most critical aspects of VM. The criteria consist of identifying the benefits of learning the skill, assessing the learner's ability to learn the skill, ensuring the skill to be learned is clear, and ensuring the skill is well defined. The use of VM has been used for targeting skills such as toilet training (Keen et al., 2007; Lee et al., 2014; McLay et al., 2015), social skills (O'Handley et al., 2016; Spivey & Mechling, 2016), safety skills (Bassette et al., 2018), fine motor skills (Mechling et al., 2012), and cooking skills (Kanfush & Jaffe, 2019; Taber-Doughty et al., 2011).

The benefits of VM are that it is a time-efficient and cost-effective intervention (Park et al., 2019) for teaching academic, functional, social, and daily living skills to students with disabilities, and acquired skills can be generalized to different settings, people, and stimuli, and maintained over time. VM requires less time and is not costly to implement (McCoy & Hermansen, 2007), as live presentations and live modeling can be time-consuming. In addition, once the video is created, teachers can repeatedly use it with their students, which can help with acquiring and generalizing skills. Finally, students can watch the video clip for skill acquisition as often as needed in and outside the classroom and at home (Bergmann & Sams, 2012) to free up class time for practice and teacher support. VM's advantage is that it can be broken down into steps (i.e., task analysis) and paused. Caregivers can provide prompts for students who need them to increase their comprehension and learning.

Practitioners and teachers can use VM to explain complex concepts to students with disabilities. Using VM makes it easier for teachers to demonstrate complex skills than if presented verbally. It improves teaching flexibility, stimulates multisensory learning, and improves teaching quality (Corbett & Abdullah, 2005; Lim et al., 2009). VM has been used to teach complex concepts such as perspective-taking to children (Charlop-Christy & Daneshvar, 2003), variation in a conversation (Charlop et al., 2008), algebra (Satsangi et al., 2021), abstract sequencing (Yakubova et al., 2016), and reciprocal play (Eastridge, 2003). In addition, using VM can teach children how to react when upset, use the bathroom, wash their hands, and respond in stressful situations. Behaviors such as sadness, anger, happiness, fear, disgust, surprise, physical pain, boredom, and shyness, can be challenging to explain. Instead of using many words to explain these concepts, children can watch a video of a peer model and what they did in such situations. This helps children to know and learn the skills visually to be successful.

Akmanoglu's (2015) study shows that teaching children with ASD emotional facial expressions via VM is effective. In a study room of the institutions where the children were attending, four children diagnosed with ASD (ages 4, 5 and 6) were taught to name emotional facial expressions such as happy, sad, scared, and disgusted. The intervention helped the children identify emotional facial expressions. They maintained this ability after completing VM training. Furthermore, the children could generalize their skills across different simulation situations and environments. Likewise, Axe and Evans (2012) used VM to train three individuals to respond to facial expressions: approval, bored, calming, disapproval, disgusted, impatient, pain, and pleased. After viewing an adult modeling each facial expression, two participants correctly identified responses to facial expressions across people and settings.

VM videos are, in most cases, concise. Therefore, VM can be an effective teaching strategy that saves time and allows for greater focus. VM is an intervention based on video recordings that are usually short to be viewed by students (Corbett & Abdullah, 2005). With VM, all extraneous, irrelevant, and distracting features are removed so students can focus on the needed skills being demonstrated. In general, VM skills are relatively easy to learn. They do not require much reading but only observation and practice (Bellini & Akullian, 2007).

Using VM allows students to learn at their own pace. With VM, students with disabilities can acquire information and learn new skills at their own pace. In combination with VM, VP allows students to watch videos in segments and learn rather than watch the entire video in one session. VM and VP allow teachers to break down a skill into smaller steps and chunks, enabling students to learn it gradually without feeling overwhelmed (Banda et al., 2007). Students can learn a skill in segments before watching the next phase of the video to learn at their own pace and focus more on each step rather than a whole instruction task (Banda et al., 2011). The teacher can create additional videos for students to watch and learn from if further support is needed.

Another benefit of VM is skill maintenance. VM helps maintain acquired skills over time (Buggey & Hoomes, 2011), and children can demonstrate previously acquired skills. There have been several studies in which acquired skills are maintained over time. For example, VM was used to teach students with IDs and ASD social skills (Olçay Gül, 2016), community skills (Çattık & Ergeneknon, 2018), conversation skills (Charlop & Milstein, 1989), social initiations (Nikopoulos & Keenan, 2004), playing with imaginary objects (Lee et al., 2021), and pretend play (MacDonald et al., 2005).

The results of each of these studies indicate that the introduction of VM effectively promoted skill acquisition. Skills acquired were maintained over time and transferred across persons and settings. Based on the results of many studies, it appears that VM intervention strategies have substantial efficacy and meet the criteria for a designation as an EBP.

VM helps generalize skills. As a result of their disabilities, students may have difficulties in communication, adaptive skills, life skills, and social skills, and it will be necessary for them to learn new skills to promote their well-being. However, whenever children acquire new skills, it does not imply that they will automatically show these skills in various settings and situations. Generalizing skills to other environments is one of the main reasons practitioners endorse VM. The ability to apply a skill or new concept to various people, situations, and materials and to demonstrate the skill over a long period is vital. When children cannot demonstrate their acquired skills in other environments or situations, it can sometimes defeat the purpose of teaching them the skill (Cannella-Malone et al., 2011). Therefore, children should be able to demonstrate their acquired skills in different environments (school, community, workplace).

When teaching an individual skill, the goal is for them to be able to take it and apply it in other environments and show mastery. The use of VM helps children generalize skills across settings. For example, students in an eighth-grade public school aged 15 to 16 were taught how to utilize community resources in a classroom and social/retail environment (Çattık & Ergenekon, 2018). After the intervention, the individuals acquired the target skills, maintained them after 1, 3, and 5 weeks, and generalized them to different settings, situations, and tools. Collins et al. (2009) investigated whether the problem-solving skills acquired through using VM could be generalized to solving actual problems in the community (i.e., teaching clients to identify problems, possible solutions, and consequences of each solution, and how to choose the

most appropriate one). According to the study results, problem-solving skills learned during the study period were generalizable to novel problems and were maintained over time.

Four students aged 23, 25, 20, and 22 were taught social skills using VM in a special education classroom and rehabilitation center (Olçay Gül, 2016). All participants achieved 100% accuracy in reaching the target social skills goal. Over time, they were able to maintain the skill they acquired. Furthermore, they could generalize their acquired skills to other situations, conditions, and individuals. Based on the results of these studies, it appears that VM has a positive effect on teaching and maintaining skills across various settings (e.g., functional, daily living, academic, and social skills).

Special Education Teachers' Demographic Characteristics and VM Perception

The current study aimed to determine special education teachers' perspectives on using VM to enhance educational opportunities for students with disabilities. The study was conducted to determine if special education teacher characteristics (grade-level assignments, teachers' age, educational level, instructional setting, years of teaching, and work location) and their training influence teacher perception of VM. The study also sought to determine if special education teachers' training influences their confidence in using VM.

Grade Level and VM Perception

Educational technologies can enhance opportunities and outcomes for all learners. Using technology for learning is essential to all students' future success. Special education teachers serve students with disabilities at various grade levels. They include elementary, middle, and high school. Dogan et al. (2021) sought to understand if school grade levels mattered. Dogan et al. found that elementary school teachers were the most frequent users of technology integration strategies and were least satisfied with the support they received. High school teachers perceived

technology to be the least valuable. This contrasts with Gorder's (2008) study, which found few differences in perceptions of classroom technology integration. According to the study, teachers who teach grades 9-12 tend to integrate technology more often and use it more than those who teach grades K-5 or grades 6-8.

Practitioners have used VM to facilitate and deliver instruction to students with disabilities at all grade levels. For example, in one study, VM was used to teach three high school students (one male and two female) with moderate IDs to put away household items (Mechling et al., 2014). Ayres and Langone (2007), for instance, used the concept of VM to teach four elementary-aged students with ASD the art of putting away groceries. Hughes (2019) demonstrated the effectiveness of VM in teaching fractions to students with mathematical learning disabilities in middle school. Satsangi et al. (2020) also used VM to teach geometry word problems to three secondary school students with learning disabilities in mathematics. However, there seem to be limited research to indicate whether teachers perceive VM differently depending on the grade level they teach.

Teacher Age and VM Perception

Teachers use technological tools daily to teach students with special needs and convey information and knowledge to them. VM is a teaching method that utilizes current technology in the classroom to teach students desired behaviors, skills, or chains of behaviors and to provide students an opportunity to emulate the model (Kellems & Edwards, 2016). Teachers can use VM to expand student learning opportunities and increase student support and engagement. In addition, special education teachers can use VM to improve instruction and personalize student learning.

Today's young adult teachers have probably grown up with technology by their side. Despite this, research shows a mixed relationship between teachers' age and the use of technology in the classroom. As Czaja et al. (2006) discussed, veteran teachers, are less likely than their younger colleagues to use technology successfully in school. For example, they are less likely than their younger counterparts to perform online activities such as e-mail and information searches (Pew Internet and American Life Project, 2004). In addition, they have more difficulty than younger people in using current technologies such as computers and the internet (Sharit et., 2003).

However, Inan and Lowther's (2010) findings indicated that a teacher's age does not significantly impact how technology is integrated into the classroom. There were no age-related differences in technology use among faculty at community colleges, according to Van der Kaay and Young (2012). They found no difference between younger and older faculty regarding the use of technology. Nevertheless, the study found that older faculty were slightly less likely to use technology than younger faculty in terms of overall technology usage.

Education Level and VM Perception

A person's educational level refers to the degree one has obtained (Haghshenas et al., 2012). It has been found that teachers' level of education affects the extent to which they integrate technology into their classrooms and the frequency with which students use it during class time (Ritzhaupt et al., 2012). Gorder (2008) examined whether teachers' educational levels affect how they perceive instructional technology integration in the classroom. There were no statistically significant differences in technology integration based on educational level. However, according to Niederhauser and Stoddart (2001), a person's educational level, age, and

some characteristics of their educational experiences can considerably impact how well technology is integrated into the classroom.

Instructional Setting and VM Perception

Students with disabilities may receive specialized instruction in a variety of instructional settings depending on their disability and the needs that they may have (e.g., resource rooms, self-contained behavior classrooms, and other types of special education classrooms). A resource room is usually a classroom or a smaller designated room where a student with a disability may receive specialized instruction from a special education teacher individually or in a small group based on their individualized education plan (Hammill, 1972). A self-contained special education classroom is a type of classroom where a special education teacher is responsible for teaching all academic subjects to a student with a disability. There is at least half of a day of instruction or lessons in a self-contained classroom in which students receive education or classes. In a self-contained classroom, academic subjects may be modified based on students' needs.
Students may also receive specialized instruction in behavior classrooms designed for students with significant behavior challenges (behavior classroom). Students with disabilities may be supported and assisted in these classrooms by special education teachers trained in behavior support.

VM has been used in special education classrooms to empower students with disabilities by providing them with tools for learning to help students develop skills, foster collaboration, and ensure personalized learning for students. In many cases, using VM has helped students in special education settings successfully acquire tasks and have confidence in the classroom. For example, three high school students were successfully taught recreation and leisure skills using VM. All sessions were conducted in a special education resource classroom for students with

moderate to severe disabilities (Sherrow et al., 2016). In addition, in a self-contained classroom, two students ages 16 and 19 with ASD and ID were taught daily living skills (cleaning mirror, sink, and floor) using VM. However, while VM is highly effective, research on teachers' perception of the intervention based on the instructional setting is limited.

Years of Teaching/Service and VM Perception

Teacher experience affects how technology is used in classrooms (Ritzhaupt et al., 2012). The experience and knowledge of a teacher with many years of teaching may be greater than that of a teacher with fewer years. The more years they spend teaching, the more comfortable and familiar they become with the content area in which they teach and the teaching method as they spend more time in the classroom. Mathews and Guarino (2000) developed a path model that indicated that teaching years significantly impact technology use directly and indirectly.

Work Location and VM Perception

Rural, suburban, and urban areas all have special education teachers. A limited amount of research has been done to determine how a special education teacher's work location might affect their perception of VM. According to Choi et al.'s (2022) study, adult in rural areas are less likely than suburban adults to have home broadband and less likely than urban adults to own smartphones, tablets, or traditional computers. Based on a study to determine rural teachers' technology integration, Howley et al. (2011) found that rural teachers had more positive attitudes toward technology integration than non-rural teachers.

Studies show that technology can help students with disabilities learn and achieve regardless of the school location. Students' learning is constantly enhanced through the use of technological tools by educators. Fisher et al. (2014) suggested that technology fosters engagement and improves learning in the classroom. Through technology, teachers can

customize and differentiate instruction for students who need support and assistance (Mahoney & Hall, 2017). Technology also allows special education teachers to provide literacy instructions for students with significant disabilities (Carnahan et al., 2012).

Teacher Training and VM Perception

It is better for students with disabilities if their teachers use a variety of instructional strategies for teaching and learning instead of just one or two. As teachers utilize various teaching strategies, they can accommodate students' individual learning styles in a very significant way by allowing them to learn step-by-step. As a form of technology, VM is an instructional strategy that can encourage active learning in the classroom, teach a wide range of skills, help students remain engaged and focused, and help students become independent and confident.

There is evidence that technology integration in the classroom is influenced by teacher training (Buabeng-Andoh, 2012; Vannatta & Nancy, 2004). Therefore, training staff on implementing VM assessments is necessary to make them useful in the classroom (Bovi et al., 2017). By engaging in training, teachers can develop competencies and stay current with the latest technology while developing new skills and knowledge to improve their students' performance.

In-service training and professional development are essential for ensuring teachers are prepared to help their students succeed in school and the real world. As Kellems and Edwards (2016) suggested, teacher training and support are among the most valuable factors that can enhance the practicability of VM intervention. Professional training courses allow teachers to acquire and utilize knowledge and skills to help their students learn in the best way possible. The benefit of teacher training goes beyond trying to increase student learning, as it can also help

teachers develop more effective teaching methods and strategies to help their students learn more effectively. In addition, teacher training is beneficial for helping teachers successfully implement VM with their students. For example, in Catania et al.'s (2009) study, three new teachers were taught using VM how to implement discrete-trial training following VM. During follow-up and across all teaching tasks, high integrity was maintained. Day-Watkins et al. (2018) used VM in another study to teach three adult participants with ASD social skills. As a result of learning how to implement the intervention, clients could use VM to teach social skills to other adults. In addition, three elementary special education teachers received training on implementing time delay using VM (Brock et al., 2018). The teachers reported favorable impressions of the professional training they received, which could assist them in implementing evidence-based practices effectively.

CHAPTER III

METHODOLOGY

Approach

In this chapter, the data collection and analysis methods that were used in the study are discussed and explained. In this section, information is provided regarding the participants of the study, the power analysis procedure, the construction of research questions and surveys, the data distribution conducted, and the method of analysis used.

Participants

Participants in the current study were special education teachers working in a school setting (PK- 12). Their teaching experience includes working in various classroom settings (e.g., resource rooms, self-contained classrooms, behavior classrooms) and other special education settings (e.g., total learning classrooms, structured learning classrooms, structured developmental classrooms, positive approaches to student success instructional settings, etc.). Participants are from varied geographical regions across the state of Texas with varied years of teaching experience with students with disabilities.

Participants were recruited from the local school districts (Dallas, Forth Worth). First, the researcher contacted local school district directors by telephone, email, and in-person to explain the study's purpose and to gain permission to send emails to special education teachers to invite them to participate in the study using a link to the survey. Secondly, the researcher also recruited special education teachers from university teacher education programs by contacting the administration of Texas Woman's University to obtain permission to invite students who are special education teachers to participate. Third, the researcher completed the TWU listserv (University Announcements Listservs) application to ask permission to send emails to the

university community. Lastly, the researcher used various special education groups on social media (e.g., Facebook, Twitter) to recruit participants.

Power Analysis Information

An a priori power analysis was conducted using G*Power 3.1.9 to determine the minimum sample size required to find statistical significance using a one-way ANOVA with three groups (i.e., three respondent grade levels). With a desired level of power set at .80, an alpha (α) level at .05, and a medium effect size of .25 (*f*), it was determined that a minimum of 159 participants were required to ensure adequate power (Cohen, 1988). An additional power analysis was to determine the minimum sample size required to find statistical significance using regression analysis with one predictor. With a desired level of power set at .80, an alpha (α) level at .05, and a medium effect size of .15, it was determined that a minimum of 55 participants would be required to ensure adequate power (Cohen, 1988). Therefore, to ensure adequate power for all analyses, a minimum sample of 159 participants needed to be recruited.

Instrument

Construction

A thorough review of the literature was conducted by the author, which included a key word search of three electronic databases used in the study. In addition to reviewing titles and abstracts, a review of pertinent literature and a hand search of journals was conducted when necessary. The researcher did not identify studies that directly address the research interest. However, the researcher considered several variables that might affect special education teachers' perception of VM. These include gender, ethnicity, grade level (elementary, middle, and high school), VM training, teacher confidence, number of years of teaching, instructional setting, teachers' age, and geographic location. Next, the researcher determined which variables were

most likely to provide answers to the research questions. After this, the researcher developed a questionnaire based on the variables considered demographic variable (age; education level; years of teaching; grade level-elementary: middle, high school; teaching setting: resource room, self-contained, behavior classroom, other; work location: urban, suburban, rural) and VM training. Based on the variables identified, the researcher asked the following questions: (a) What is special education teachers' perceptions of VM? (b) What are the differences in teachers' perceptions of VM among special education teachers' demographic variables (grade, age, educational level, instructional setting, years of teaching, work location, and teacher training)? and (c) What is the relationship among special education teachers' training of VM use and their confidence?

The questionnaires were sent to two higher education professionals to review. One was a faculty member of special education at Texas Woman's University, and the other was a statistician and the director of the Center for Research Design and Analysis at Texas Woman's University. The researcher then revised the questionnaire based on their feedback.

Structure

The survey included an introduction, research questions, and four sections (see Appendix A). As part of the survey, the researcher provided potential participants with information on the study. The information in the introduction was as follows: (a) research objectives, (b) research questions, (c) a definition of VM, (d) incentives for participation, (e) participant's rights, and (f) the researcher's contact information (see Appendix A). Section 1 asked for demographic information about the participants. The following information was asked: age, highest educational level, years of teaching experience, grade level, classroom setting, geographic location, and whether they have been trained to use VM. The demographic information helped

identify special education teachers' characteristics in VM use. Section 2 asked about special education teachers' perceptions of VM to determine their general view about VM in teaching students with disabilities. Section 3 assessed special education teachers' training on VM to determine whether the teachers have been adequately trained on VM and have developed the skills necessary to implement VM when teaching students with disabilities. Finally, section 4 considered special education teachers' confidence in using VM. Teacher confidence is essential as a lack of confidence can prevent using VM effectively with students. Conversely, the more confident they are, the more likely to use VM intervention.

In the survey, respondents responded to one of the following options: (a) strongly disagree, (b) disagree, (c) agree, or (d) strongly agree to each dimension using a Likert rating scale to give respondents a series of dimensions of attitudes. The Likert rating scale scores ranged from 1 to 4. The survey was intended to be anonymous, without any tracking mechanisms, so the researcher could not identify which schools or teachers participated, IP addresses, or location information. The survey was mobile friendly and did not require a username or password to complete.

Distribution and Collection

The data distribution process began as soon as the Institutional Review Board (IRB) approved the study. The study used an online survey using PsychData forms to collect data. The researcher emailed the survey to potential participants in local school districts and special teachers at Texas Woman's University. The researcher also posted the survey link on his social media page timeline and social media groups such as the dyslexia support and resource, school psych, special education teachers, division of autism and developmental disabilities, teachers for special needs children, special needs education, the special education community, special

education resource, special education teachers (severe), among others. Every week, the survey link was reposted on Facebook and other social media platforms to reach non-respondent. Surveys remained open for 9 weeks before they were closed.

The researcher offered a reward as an incentive to participants in return for taking the survey. Respondents were entered into a drawing to win a $30 electronic gift card to encourage participation. This was spontaneous, and 10 winners were selected. The last question in the questionnaire asked if they wished to participate in the drawing. If they answered yes, they were prompted to enter their email so that the researcher could send them the gift card if they were selected. If they answered no, they could submit the questionnaire without entering their email address.

Data Analysis Procedures

Once the survey was removed from public access, the data was analyzed. In order to answer the research questions (a) What is special education teachers' perceptions of VM? (b) What are the differences in teachers' perceptions of VM among special education teachers' demographic variables (grade, age, educational level, instructional setting, years of teaching, work location, and teacher training)? and (c) What is the relationship among special education teachers' training of VM Use and their confidence? the collected data were analyzed using three statistical methods: (a) descriptive statistics, (b) one-way ANOVA, and (c) LR. In addition, IBM SPSS was used for the analyses. There were missing data from some participants, but these data were missing completely at random and were excluded from the analysis.

To answer the first research question (a) What is special education teachers' perceptions of VM? descriptive data about special education teachers' demographic characteristics and VM experiences were analyzed to see special education teachers' perceptions of VM by age,

educational level, years of teaching, instructional setting, grade level, location, and training on VM. By using descriptive data, we would be able to determine if special education teachers' perception of VM differs by grade level (PK through fifth grade, sixth through eighth grade, ninth through 12th grade), age of teacher (18-29, 30-39, 40-49, 50 and over), educational level (bachelor, master, and doctorate), instructional setting (resource room, self-contained, behavior classroom, other types of special education classroom), years of teaching or service (0-5 years, 6-10 years, 11-15 years, 16-20 years, 20+ years), work location (urban, suburban, rural), and teacher training by comparing their means.

To answer the second research question (b) What are the differences in teachers' perceptions of VM among special education teachers' demographic variables (grade, age, educational level, instructional setting, years of teaching, work location, and teacher training)? an ANOVA was used to evaluate the mean differences in the perception of VM use among special education teachers' demographic variables. The independent variables are the demographics of special education teachers (PK through fifth grade, sixth through eighth grade, ninth through 12th grade). Perception of VM serves as the dependent variable. For instance, the differences in perception among the grade level of respondents (i.e., elementary, middle, and high school) were analyzed by comparing the means of the grade levels to see if there were differences and be seen to satisfy the assumption of the model that there are statistically significant differences among these groups. Using an analysis of special education teachers' demographic variables, homogeneity of variance assumptions was checked, *f*-values and *p*-values were determined, and comparisons were made. Post-hoc tests were also used to investigate where the difference originates from.

To answer the third question (c) What is the relationship among special education teachers' training of VM Use and their confidence in the use of VM for students with disabilities? LR analysis was conducted to see if there is a relationship between special education teachers' training of VM use and confidence (i.e., will teachers' confidence in using VM increase as training of VM increases?). By running LR, the researcher obtained the *f*-test results and *p*-values to determine whether a relationship exists and is significant. In analyzing the linear regression results, the researcher looked at the normal probability plot to see if there were any patterns within the data.

Finally, the researcher examined the descriptive statistics by considering the mean and standard deviation of the independent variable (training) of VM use and dependent variable (confidence). The researcher then examined the correlation to determine whether there was a positive or negative correlation between training and confidence. For example, a positive coefficient would indicate that as the value of the training increases, the mean of special education teachers' confidence level would also tend to increase.

Two hundred and thirty-five special education teachers participated in the survey but only 230 provided usable data in the results section.

CHAPTER IV

RESULTS

Outcomes

This chapter summarizes the results of the survey on special education teachers' perception on VM use. Firstly, descriptive data about responders' demographic perceptions of VM experiences were analyzed. The demographic data included grade level, age, educational level, instructional setting, years of teaching, work location, and teacher training. Secondly, a *t*-test and an ANOVA were used to analyze the mean differences in the perception of VM use among special education teachers based on grade, age, educational level, instructional setting, years of teaching, work location, and teacher training to see if there are statistically significant differences. Lastly, a linear regression was conducted to see if there is a relationship between special education teachers' training and confidence.

Descriptive Statistics on Special Education Teachers' Perception on VM

Section 1 of the survey asked for demographic information about special education teachers (see Table 1). Two hundred and thirty-five special education teachers participated in the survey but only 230 provided usable data.

Table 1

Demographic Characteristics of Special Education Teachers

Characteristics	*N*[b]	%
Age of Special Education Teachers		
18-29	50	21.8%
30-39	113	49.3%
40-49	44	19.2%
50 and over	21	9.2%
Prefer not to answer	1	0.4%
Highest educational level		
Bachelor degree	78	34.5%
Master degree	114	50.4%
Doctorate degree	30	13.3%
Prefer not to answer	4	1.8%
Years teaching		
0-5 years	50	21.9%
6-10 years	103	45.2%
11-15 years	46	20.2%
16-20 years	21	9.2%
20+ years	8	3.5%
Grades taught		
PK-5th grade (Elementary School)	73	32.2%
6th grade- 8th grade (Middle School)	93	41.0%
9th grade- 12th grade (High School)	46	20.3%
Multiple grade level	15	6.6%
Instructional setting		
Resource	57	25.0%

Self-contained	94	41.2%
Behavior classroom	54	23.7%
Other special education classrooms	23	10.1%
Location of Work		
Urban	117	51.5%
Suburban	83	36.6%
Rural	27	11.9%
VM Training		
Yes	166	74.1%
No	58	25.9%

Note. *N* = the total number of special education teachers for each condition; % = Reflects the number and percentage of participants answering "Agree" and "Strongly Agree."
[b]Some participants did not provide data.

Special Education Teachers' Perceptions of VM

In section 2, the survey asked special education teachers about their perceptions of VM when teaching students with disabilities. Table 2 presents the descriptive analysis of the responses. Overall, special education teachers perceived VM as an effective intervention for instructing students with disabilities. Therefore, they are generally favorable to using VM. Of the respondents, 76.6% strongly agreed or agreed that using VM benefits students with disabilities, 74.8% strongly agreed or agreed that the use of VM is entertaining, and 84.6% strongly agreed or agreed that VM could also be an effective tool for assisting students with disabilities in gaining a greater understanding of content. Also, 81.3% indicated that using VM allows them to visually demonstrate information, concepts, and skills to support students learning, and 76.5% indicated that VM may be readily individualized to integrate a student's learning. Besides, 77.6% strongly agreed or agreed that there are a variety of skill sets that can be taught using VM in the

classroom, 79.0% strongly agreed or agreed students could view videos multiple times or even daily, and 76.4% strongly agreed or agreed VM shows students exactly what is expected of them. The results also showed that 81.9% of special education teachers strongly agreed or agreed to be interested in using VM in the classroom, 76.7% strongly agreed or agreed to be interested in making videos with their students, and 71.2% strongly agreed or agreed to be interested in using VM to help their students retain information. Moreover, 62.3% strongly agreed or agreed to have VM resources and materials for instruction, and 80.7% strongly agreed or agreed to have access to VM-related technology (e.g., iPad, laptop) at their campus.

Table 2

Perception on VM Means and Standard Deviation

Perception of Video Modeling	*n*[b]	% [a]	*M*	*SD*
1. VM is beneficial for students with disabilities.	222	76.6	2.919	0.761
2. VM is entertaining.	218	74.8	2.881	0.707
3. VM can be a useful tool to assist students with disabilities in understanding content.	221	84.6	3.072	0.682
4. VM allows teachers to demonstrate information, concepts, and skills visually to support students learning.	220	81.3	3.073	0.716
5. VM may be readily individualized to integrate a student's learning.	221	76.5	2.973	0.730
6. VM can be used to teach a variety of skill sets in the classroom.	223	77.6	3.005	0.749
7. VM can be viewed multiple times or even daily.	219	79.0	3.023	0.767
8. VM shows students exactly what is expected of them.	216	76.4	3.023	0.754
9. I would use VM for classroom teaching.	221	81.9	3.068	0.731
10. I am interested in making videos to use with my	218	76.7	2.959	0.780

Perception of Video Modeling	n[b]	% [a]	*M*	*SD*
students.				
11. I use VM to help students retain information.	219	71.2	2.858	0.818
12. I have good VM resources and materials for instruction.	220	62.3	2.673	0.849
13. I have access to VM-related technology (e.g., iPad, laptop) on my campus.	218	80.7	3.005	0.757

Note. n = the number of participants that answered the question; % [a] = Reflects the number and percentage of participants answering "Agree" and "Strongly Agree"
[b]Some participants did not provide data.

Special Education Teachers' Training on VM

In section 3, special education teachers were asked whether they had been trained on VM and possessed the skills to implement the intervention while teaching students with disabilities (see Table 3). Of the responders, 77% strongly agreed or agreed to have taught VM by themselves (e.g., "I have taught VM by myself"), 54.5% strongly agreed or agreed to have received training in their teacher preparation program, 56.2% received training through their school campus, and 57.7% received training through their school districts. Also, 81.4% strongly agreed or agreed that teachers should have VM training, 78.3% strongly agreed or agreed that teacher preparation programs should provide VM training, 80.0% strongly agreed or agreed that campuses should provide VM training, and 83.1% strongly agreed or agreed that school districts should provide VM training. Regarding using VM to teach skills, of the responders, 69.7% strongly agreed or agreed that they had used VM in the classroom, 73.1% strongly agreed or agreed to have the necessary technical skills and competencies to implement VM, and 61.1% strongly agreed or agreed to have experience with video editing software.

Table 3

Level of Knowledge and Training on VM

Training on VM	*n*[b]	% [a]	*M*	*SD*
1. Special education teachers should have training on how to use VM.	221	81.4	3.054	0.703
2. My teacher preparation program provided a training program on VM.	222	54.5	2.572	0.955
3. My school has provided training on VM.	219	56.2	2.543	0.922
4. My school district has provided training on VM.	222	57.7	2.635	0.953
5. I have taught VM by myself.	218	77.0	2.784	0.906
6. Teacher preparation programs should offer training on VM.	221	78.3	2.991	0.743
7. Campuses should offer training on VM.	219	80.0	3.050	0.735
8. School districts should offer training on VM.	219	83.1	3.082	0.697
9. I have practiced using VM to teach skills.	221	69.7	2.846	0.804
10. I have the necessary technical skills and competencies to implement VM.	219	73.1	2.909	0.800
11. I have experience with video editing software.	221	61.1	2.747	0.856

Note. *n* = the number of participants that answered the question; % [a] = Reflects the number and percentage of participants answering "Agree" and "Strongly Agree"
[b]Some participants did not provide data.

Special Education Teachers' Confidence in Use of VM

In section 4 of the survey, special education teachers were asked about their confidence in using VM. Table 4 presents the descriptive analysis of the responses. Out of the responses, 64.4% of the respondents strongly agreed or agreed to be confident in using VM to teach students with disabilities. Additionally, 75.5% strongly agreed or agreed to have knowledge of how VM can be used in the classroom; 63.3% strongly agreed or agreed to be confident in creating VM materials to use to teach students with disabilities; 62.7% strongly agreed or agreed

to have confidence in using VM to teach functional reading skills, functional math skills, social skills, life skills, behavior skills, job skills. Lastly, 73.3% strongly agreed or agreed to be confident in using VM in the classroom to teach various classroom routines and have students imitate them.

Table 4

Special Education Teachers' Confidence in Use of VM

Special Education Teachers' Confidence in Use of VM	*n*[b]	% [a]	*M*	*SD*
1. I am confident in using VM to teach students with disabilities.	222	64.4	2.729	0.788
2. I have knowledge of how VM can be used for teaching.	220	75.5	2.914	0.796
3. I am confident in creating VM materials for students with disabilities.	221	63.3	2.706	0.834
4. I am confident in using VM in the classroom in teaching (functional) reading skills.	220	62.7	2.764	0.852
5. I am confident in using VM in the classroom in teaching (functional) math skills.	221	64.7	2.751	0.838
6. I am confident in using VM in the classroom in teaching social skills.	219	68.9	2.836	0.817
7. I am confident in using VM in the classroom in teaching life skills.	220	68.6	2.855	0.813
8. I am confident in using VM in the classroom in teaching behavior skills.	221	71.5	2.909	0.829
9. I am confident in using VM in the classroom in teaching job skills.	218	64.7	2.752	0.786
10. I am confident in using VM in the classroom to teach various classroom routines and have students imitate.	217	73.3	2.862	0.785

Note. *n* = the number of participants that answered the question; % [a] = Reflects the number and percentage of participants responding "Agree" and "Strongly Agree"
[b]Some participants did not provide data.

The Differences in Perceptions of VM

The second research question examined differences in teachers' perceptions of VM among special education teachers' demographic variables. A one-way ANOVA was used to compare special education teachers' perception of VM based on grade level taught, age and educational level, instructional setting assigned to teach, years of teaching experience, work location, and teacher training. In addition, a two-sample *t*-test was used to compare special education teachers with and without VM training to explore if there were statistically significant differences in perceptions of VM.

Differences in Special Education Teachers' Perception of VM Based on Grade Levels

Table 5 shows a one-way ANOVA comparing the means of special education teachers' perceptions of VM based on the grade level taught. The means, standard deviation, values of *F*, and significance levels are listed in Table 5. In Pre-K to fifth grade, the perception is (M = 2.999, SD = 0.454), sixth to eighth grade is (M = 2.937, SD = 0.463), ninth to 12th grade is (M = 3.032, SD = 0.426), and multiple grade levels is (M = 3.039, SD = 0.513). The results indicated that there was no significant difference between grade levels [F (3, 190) = .520, p = .669], as shown in the results of the ANOVA table on special education teachers' perceptions of VM based on grade level (elementary, middle, and high school).

Table 5

Differences in Special Education Teachers' Perception of VM Based on Grade Levels

Variable	*n (%)*	*M*	*SD*	*F*	*p*
Grade Level-PK-5th	60 (30.93)	2.999	0.454	.520	.669
6th grade-8th	79 (40.72)	2.937	0.463		
9th grade-12th	41 (21.13)	3.032	0.426		
Multiple grade levels	14 (7.22)	3.039	0.513		
Total (*N*)	194				

Note. n (%) = the number and percentage of special education teachers for each condition; *N* = 194 (Total number of special education teachers who answered VM perception based on grade level question). Thirty-six participants did not provide their grade level information.

Differences in Special Education Teachers' Perception of VM Based on Age Groups

Special education teachers were surveyed to identify whether age affects their perception of VM. Table 6 shows a one-way ANOVA comparing the means of special education teachers' perceptions of VM based on age. The means, standard deviation, values of *F*, and significance levels are listed in the table. No significant differences were found for VM perception based on special education teachers' age.

The perception of VM for special education teachers between the age of 18 to 29 is (*M* = 2.973, *SD* = 0.419), 30 to 39 (*M* = 3.014, *SD* = 0.478), 40 to 49 (*M* = 2.905, *SD* = 0.478), 50 and older (*M* = 2.923, *SD* = 0.358) and prefer not to answer (*M* = 2.923, *SD* = 0.358). Table 6 shows no significant differences between the different age groups regarding the perception of VM [*F* (4, 191) = .405, *p* = .805] among the various age groups.

Table 6

Differences in Special Education Teachers' Perception of VM Based on Age

Age Group	*n (%)*	*M*	*SD*	*F*	*p*
18-29	45 (22.95)	2.973	0.419		
30-39	95 (48.47)	3.014	0.478		
40-49	38 (19.38)	2.905	0.478	.405	.805
50 and over	17 (8.67)	2.950	0.495		
Prefer not to answer	1(0.51)	2.923	0.358		
Total (*N*)	196				

Note. n (%) = the number and percentage of special education teachers for each condition; *N* = 196 (Total number of special education teachers who answered VM perception based on age level question). Thirty-four participants provided age information but not on perception of VM.

Differences in Special Education Teachers' Perception of VM Based on Educational Level

In this study, the researcher aimed to explore whether special education teachers' educational level could influence their perceptions of VM. Table 7 shows a one-way ANOVA comparing the means of special education teachers' perception of VM based on their educational level. No significant differences were found among special education teachers' perceptions of VM based on educational level.

According to the survey (see Table 7), the perception of VM among special education teachers with bachelor degrees is (M = 3.029, SD = 0.429), master degrees (M = 2.938, SD = 0.476), doctoral degrees (M = 2.985, SD = 0.439), and prefer not to answer (M = 3.231, SD = 0.382). There were no significant differences in the perception of VM based on educational levels [F (3, 189) = .935, p = .425](see Table 7).

Table 7

Differences in Special Education Teachers' Perception of VM Based on Educational Level

Educational Level	*n (%)*	*M*	*SD*	*F*	*p*
Bachelor degree	63 (32.64)	3.029	0.429	.935	.425
Master degree	101(52.33)	2.938	0.476		
Doctorate degree	25 (12.95)	2.985	0.439		
Prefer not to answer	4 (2.07)	3.231	0.382		
Total (*N*)	193				

Note. n (%) = the number and percentage of special education teachers for each condition; *N* = 193 (all the special education teachers who answered VM perception based on educational level survey question). Thirty-seven participants provided educational level information but not on perception of VM.

Differences in Special Education Teachers' Perception of VM Based on Instructional Setting

The researcher assessed whether instructional settings could influence the perception of special education teachers regarding VM. Table 8 shows a one-way ANOVA comparing the means of special education teachers' perception of VM based on instructional setting. No significant differences were found in special education teachers' perceptions of VM based on the instructional setting.

The perception of VM based on an instructional setting for a special education teacher teaching in a resource room is (M = 3.044, SD = 0.546), self-contained (M = 2.913, SD = 0.427), behavior classroom (M = 2.968, SD = 0.437), and other type of special education classroom (M = 3.145, SD = 0.381; see Table 8). It was found that there were no significant differences between the instructional setting (resource room, self-contained, behavior classroom, other types of special education classroom) in which special education teachers teach on their perception of VM, [F (3, 191) = 1.690, p = .171]**.** Considering these results, one can conclude that special

education teachers' classroom assignments do not influence their perceptions of VM. There is no change in special education teachers' perception, whether in a resource room, self-contained room, behavior classroom, or any other type of classroom.

Table 8

Differences in Special Education Teachers' Perception of VM Based on Instructional Setting

Setting	*n (%)*	*M*	*SD*	*F*	*p*
Resource room	44 (22.56)	3.044	0.546	1.690	.171
Self-contained	83 (42.56)	2.913	0.427		
Behavior classroom	50 (25.64)	2.968	0.437		
Other special education classroom	18 (9.23)	3.145	0.381		
Total (*N*)	195				

Note. *n (%)* = the number and percentage of special education teachers for each condition. *N* = 195 (all the special education teachers who answered VM perception based on instructional level survey questions). Thirty-five participants provided information on instructional setting but not on perception of VM.

Differences in Special Education Teachers' Perception of VM Based on Years of Teaching

Table 9 and Figure 1 show a one-way ANOVA comparing the means of special education teachers' perceptions of VM based on years of teaching. The means, standard deviation, values of *F*, and significance levels are listed in the table. For a special education teacher who has been in the classroom from 0 to 5 years old, their perception of VM based on years of teaching is (*M* = 3.184, *SD* = 0.385), 6 to 10 years old (*M* = 2.823, *SD* = 0.459), 11 to 15 years old (*M* = 3.037, *SD* = 0.475), 16 to 20 years old (*M* = 2.953, SD = 0.411), and 20+ (*M* = 3.115, *SD* = 0.250). There were significant differences in the perception of VM based on years of teaching [*F* (4, 190) = 5.457, $p < .001$]. A follow-up test using the Bonferroni test for multiple comparisons found that the mean value of special education teachers' perception of VM was significantly

different between special education teachers with 0 to 5 years of experience and special education teachers with 6 to 10 years of experience ($p < .001$, 95% C.I. = [.1294, .5917]). No other years of service comparison were significant. Special education teachers with fewer years of teaching experience were more likely to use VM. VM's favorable perception seems to decrease with the length of teaching service.

Table 9

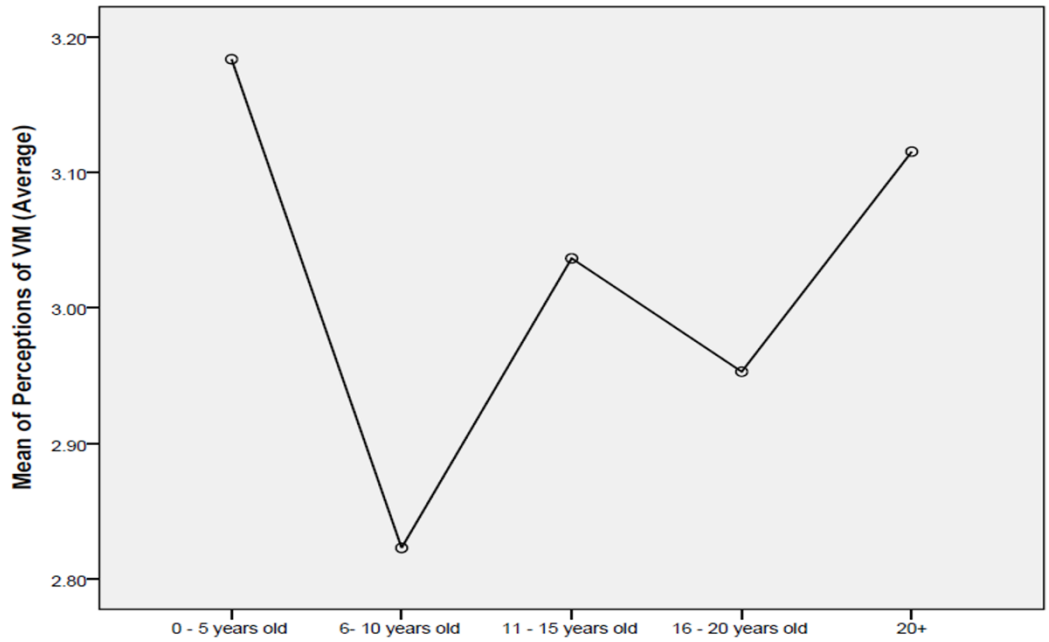
Differences in Special Education Teachers' Perception of VM Based on Years of Teaching

Years of Teaching	*n (%)*	*M*	*SD*	*F*	*p*
0 - 5 years old	44 (22.56)	3.184	0.385	5.457	<.001
6 - 10 years old	83 (42.56)	2.823	0.459		
11 - 15 years old	42 (21.53)	3.037	0.475		
16 - 20 years old	18 (9.23)	2.953	0.411		
20+	8 (4.10)	3.115	0.250		
Total (*N*)	195				

Note. n (%) = the number and percentage of special education teachers for each condition. *N* = 195 (Total number of special education teachers who answered VM perception based on years of teaching survey question). Thirty-five participants provided information on years of teaching but not on perception of VM.

Figure 1

Special Education Special Education Teachers' Perception of VM Based on Years of Teaching



Differences in Special Education Teachers' Perception of VM Based on Work Location

The work location of a special education teacher could be in an urban area, a suburban area, or a rural area. Table 10 shows a one-way ANOVA comparing the means of special education teachers' work location. The means, standard deviation, values of *F*, and significance levels are listed in the table. There was no significant difference in perceptions of VM by special education teachers at different places of employment based on their work location.

According to the information provided by special education teachers in terms of their perception of VM based on where they work (employment location), the perception of VM for special education teachers in urban areas is (M = 3.024, SD = 0.424), suburban areas (M = 2.889, SD = 0.464), and rural areas (M = 3.040, SD = 0.545). According to Table 10, the study's results

did not result in a statistically significant difference. Their employment location did not significantly influence special education teachers' perception of VM (urban, suburban, rural), [$F(2, 191) = 2.090$, $p = .126$](see Table 10).

Table 10

Differences in Special Education Teachers' Perception of VM Based on Employment Location

Location	*n (%)*	*M*	*SD*	*F*	*p*
Urban	98 (50.52)	3.024	0.424	2.090	.126
Suburban	73 (37.63)	2.889	0.464		
Rural	23 (11.86)	3.040	0.545		
Total (*N*)	194				

Note. *n (%)* = the number and percentage of special education teachers for each condition. *N* = 194 (Total number of special education teachers who answered VM perception based on employment location survey question). Thirty-six participants provided employment location information but not on perception of VM.

Differences in Special Education Teachers' Perception of VM Based on Training

Some special education teachers have had VM training, and others have not had VM training (see Figure 2). A two-sample *t*-test was performed to compare special education teachers with and without VM training to explore if there were statistically significant differences in perceptions of VM. The number and percentage of special education teachers for each age group (*n %*), means, standard deviation, degrees of freedom (*df*), *t*-value, and significance levels (*p*) are listed in Table 11.

The perception of VM among special education teachers with VM training ($M = 2.965$, $SD = 0.469$) was not significantly different from special education teachers without VM training ($M = 2.986$, $SD = 0.422$); $t\ (189) = -.278$, $p = .084$. Considering these results, it would appear

that there is no significant difference in perception between special education teachers with and without VM training, and whether special education teachers had received training on VM or not does not significantly affect their perception of VM. However, the number of special education teachers with VM training (N = 142) was significantly higher than those without VM training (N = 49).

Table 11

t-test - Differences in Special Education Teachers' Perception of VM Based on Training and Without VM Training

Training	*n (%)*	*M*	*SD*	*df*	*t*	*p*
Yes	142 (74.35)	2.965	0.469	189	.278	.084
No	49 (25.65)	2.986	0.422			
Total (*N*)	191					

Note. n (%) = the number and percentage of special education teachers for each age group. N = 196 (total number of special education teachers who answered VM perception based on training survey question). Thirty-nine participants provided information on training but not on perception of VM.

Special Education Teachers' Training of VM Use and Their Confidence

An LR analysis was conducted for research question three to determine whether there is a relationship between special education teachers training of VM use and their confidence. It was hypothesized that the more training special education teachers have, the greater their confidence will be. Conversely, if special education teachers have limited training of VM use, their confidence will be low. Training of VM use is the predictor variable; confidence is the outcome variable, and N (Pairs of scores for special education teachers who answered the survey questions on the training of VM use and confidence of VM). Table 12 displayed information on

the relationship between training and confidence. Results indicated a statistically significant positive correlation exists between training and special education teachers' confidence (r = (196) = .790, p < .001; see Table 12). Given the results, it is evident that VM training significantly impacts special education teachers' confidence in using VM. Therefore, special education teachers are more likely to be confident when they have training.

Table 12

Correlation Between Training and Confidence

	Correlation	Confidence of VM
Training of VM Use	Pearson Correlation	.790**
	Sig. (2-tailed)	.000
	N	196

Note. ** Correlation is significant at the 0.01 level (2-tailed).

A simple LR analysis was used to test if Training of VM use significantly predicted special education teachers' confidence of VM (see Table 13). The results of the regression indicated that the training of VM use predictor explained 62.4% of the variance in teachers' confidence of VM (R^2 = .624, F (1,194) = 321.814, p <.001.

Table 13

Simple LR Training of VM Use and Confidence of VM

Source	*B*	*SEB*	*β*	*t*	*p*	95% CI
Training of VM Use	.965	.054	0.790	17.939	.000	.859 -1.071

First, results from the analysis of special education teachers' perception of VM indicate a positive perception of VM use. Second, results from the data analysis suggest no significant

difference in special education teachers' perception of VM based on grade, age, educational level, instructional setting, work location, and training or without training. However, there were significant differences in the perception of VM based on years of teaching for special education teachers with 0 to 5 years of experience and special education teachers with 6 to 10 years of experience. Finally, results indicated a statistically significant positive correlation between the training of VM use and confidence.

CHAPTER V

DISCUSSION

The present study answered three questions: (a) What is special education teachers' perception of VM in teaching students with disabilities? (b) What are the differences in teachers' perceptions of VM among special education teachers' demographic variables (grade, age, educational level, instructional setting, years of teaching, work location, and teacher training)? and (c) What is the relationship among special education teachers' training of VM Use and their confidence?

Teacher's Perception of VM

A number of empirical studies have demonstrated that VM is an effective method of teaching various skills to students with disabilities (Acar & Diken, 2012; Almalki, 2020; Ayres & Langone, 2008). Based on the existing research, VM may benefit students with disabilities in multiple ways, including enhancing their functional, social, life, and communication skills in various settings. In addition, teachers report that VM helps students with disabilities understand the content of a lesson (Cardon et al., 2020; Meister & Salls, 2015).

Researchers and educators are increasingly searching for evidence-based practices to support students with disabilities as they present unique challenges. As a tool for acquiring skills and addressing deficits, VM has proven to be quite successful for students with disabilities. The current study's findings indicate that many special education teachers support using VM in the classroom for teaching students with disabilities (see Table 2). Special education teachers perceived that using VM is beneficial for supporting social, domestic, play, daily life, academics, and language. This is aligned with the literature on VM, which suggests that VM can be an effective teaching tool for teaching a variety of skills to individuals with disabilities using

observational learning methods (Corbett & Abdullah, 2005; Delano, 2007; Haydon et al., 2017). VM visually appeals and may help increase student motivation, engagement, and attention to learn new skills and behaviors, particularly for students with ASD who have shown to possess relative strengths in visual information (Mineo et al., 2009; Omar et al., 2020). VM can be used in the classroom to teach (functional) reading (Ok & Howorth, 2020), (functional) math (Burton et al., 2013), social skills (Park et al., 2020), life skills (Ozcan & Merdan, 2020), vocational skills (Allen et al., 2010; English et al., 2017), and classroom routines (Cihak et al., 2010). Teachers have reported that VM is useful for teaching skills and that students can apply those skills across various settings (Gül et al., 2019).

Difference in Perceptions Among Special Education Teachers

In the second research question, the researcher examined whether special education teachers' perceptions of VM differed based on their demographics. The demographic factors included grade level, age, education level, instructional setting, years of teaching, work location, and VM training. The study found that special education teachers can use VM regardless of grade, age, educational level, instructional setting, experience, location, and training.

Special Education Teachers' Grade Levels for Teaching

There was no significant difference based on grade level**.** A special education teacher's grade level (elementary, middle, or high school) does not significantly affect how VMs are perceived. Results from various studies have indicated that using VM in elementary schools (Ayres & Langone, 2007), middle schools (Hughes, 2019), and high schools (Mechling et al., 2014) can help students gain a better understanding of content. Based on the study results, special education teachers' perceptions about VM remain the same regardless of the grade levels they teach.

Special Education Teachers' Age

Based on the study results there are no statistically significant difference in perception between special education teachers of different ages regarding VM. The results from the study suggest that old and younger special education teachers have similar perceptions of VM, and their age does not affect VM's usefulness. Videos have been shown to help teachers of all ages teach, even though there is still a substantial difference between older and younger adult users (Czaja & Sharit, 1998; Laguna & Babcock, 1997; Ziefle & Baym, 2005). Many younger teachers grew up around technology; however, this does not give them an advantage over their older counterparts, although older adults may struggle with technology due to a lack of familiarity and not being exposed to technology at a younger age than their younger counterparts (Charness et al., 2001).

Special Education Teachers' Educational Level

As part of this study, the researcher sought to explore whether the educational level of a special education teacher influences VM perception**.** Based on the study results, it can be concluded that the level of education of a special education teacher (bachelor, master, doctorate) has no significant impact on how VMs are perceived. In the classroom, special education teachers with varying degrees (bachelor, master, doctoral) work together to ensure that students with disabilities have more options to select from and to enhance their participation and engagement. Therefore, there was no significant correlation between the educational level of a special education teacher and their VM perception.

Special Education Teachers' Instructional Setting

The VM perception of special education teachers was also not affected by the instructional setting of the classroom. Students with disabilities may be taught in resource rooms,

self-contained classrooms, behavior classrooms, or other special education classrooms.VM has successfully been implemented in various settings of the school environment (Ayres & Langone, 2007; Çattık & Ergenekon, 2018; Hughes, 2019; Olçay Gül, 2016; Satsangi et al., 2020). Perhaps this is why special education teachers' perception of VM was not significantly affected by the instructional setting.

Special Education Teachers' Years of Teaching

There were significant differences in the perception of VM based on years of teaching experience. Special education teachers' perception of VM significantly differed between teachers with 0 to 5 years of teaching experience and teachers with 6 to 10 years of teaching experience. Some research has shown that teachers' years of teaching experience do not affect the use of technology in the classroom (Niederhauser & Stoddart, 2001). However, many studies report that years of teaching experience influence the successful use of technology in classrooms (Giordano, 2007; Hernández-Ramos, 2005; Wong & Li, 2008) and that teachers with fewer years of teaching experience were more inclined to use technology than their more experienced colleagues. Therefore, special education teachers' years of teaching experience significantly influence their perceptions of VM. In a similar study, Wynkoop et al. (2020) found that teachers' interest in using VM is influenced by years of teaching experience. As years of teaching experience increase, interest in VM decreases.

As teachers gain more experience using VM in the classroom, they may use other strategies rather than the same approach. This may be because the beginning years of teaching are tough, and the time needed to learn new strategies and experiment with new tools may be challenging for some teachers. As a result, they may use the tools and techniques taught during their teacher preparation program. However, over time, as they gain confidence and experience,

they may use other techniques, try out new ideas, make tough decisions, use old tools occasionally, replace some strategies with new ones that are easier to implement or give up some methods altogether.

Since special education teachers who have taught for a few years are more likely to use VM, it is suggested that VM training should be provided in special education teacher preparation programs and when special education teachers are hired rather than after they have taught for a while. Furthermore, it would be beneficial if school districts could provide special education teachers with some form of professional development (workshops, conferences, or meetings) to assist them in using VM to help their students succeed. Rice (2010) reported that teachers' productivity spikes during their first few years on the job but then levels off. Therefore, as part of campus and district programs, it would be an excellent idea to encourage special education teachers with long years of teaching experience to continue using VM to ensure they do not abandon it but use it more often to foster active learning and engagement and to help students understand lessons.

Special Education Teachers' Geographical Work Location

Special education teachers' perceptions of VM did not significantly differ based on where they worked. A special education teacher's work location does not impact their VM perception, regardless of where they choose to teach. Special education teachers use VM to teach skills and behaviors, although they do not appear to use it in their classrooms regularly. No matter where they work, special education teachers perceive VM as a valuable teaching and learning tool for promoting good behavior, academic success, social development, and independent living skills in the classroom, as well as a useful intervention that can make a significant difference in these areas.

Special Education Teachers' Training

No significant differences were found in VM training. This could be due to (a) the training program was not good enough or outdated and/or (b) everybody knows how to use technology these days. Training is needed before the teachers use VM intervention (Almalki, 2020). The value of VM training is that it can significantly benefit both teachers and children alike, as it can enhance teaching skills and assist the learning process of individuals (Plavnick, 2013; Wang & Koyama, 2014). Many teachers and caregivers find VM exciting and would like to learn more about the intervention (Wynkoop et al., 2020).

Even though some school districts and teacher preparation programs have trained special education teachers in VM, many still lack training or are unfamiliar with how to use it. About half of special education teachers 54.5% received VM training through their teacher preparation program, 56.2% through their campus, and 57.7% via their school district, indicating that there is still a need for training (see Table 3). Wynkoop et al. (2020) noted that lack of training was the most significant barrier to using VM. Many respondents believe special education teachers should receive training in VM through their school districts, campuses, and teacher preparation programs. However, recently there have been many other ways to learn VM, such as online training, reading peer-reviewed articles, and watching YouTube videos. Furthermore, in several school districts, children and their teachers have easy access to new technology, such as iPads and laptops, which usually helps implement VM.

Relationship Between Special Education Teachers' Confidence and VM Training

The third research question addressed the relationship between special education teachers' training on VM and their confidence in the use of VM for students with disabilities. The study results indicated that special education teachers' confidence level in using VM increases when

they receive training of VM use. This is consistent with the findings of Liu et al. (2017) and Kreijns et al. (2013). They found that teacher confidence and comfort influenced classroom technology use. Confidence is vital in every aspect of life. Having a lack of confidence can have a significant impact on one's ability to accomplish a goal satisfactorily. Training in VM can help special education teachers gain more confidence and implement this intervention more effectively. Peralta and Costa (2007) examined the competence and confidence of 20 teachers when it came to using information and communication technology in the classroom (ICT). Their study found that teachers' technical competence with technology contributes to higher confidence in using ICT.

Limitations

First, an email was sent to school directors to ask permission to send emails to their special education teachers who provide special education services to students with disabilities to invite them to participate in the study. Unfortunately, several school directors did not respond to the researcher's request for permission to send emails to their special education teachers. As a result, the researcher could not send emails to special education teachers, which impacted the number of participants who could have been potentially recruited to participate in the study.

Second, 235 special education teachers participated in the survey, but only 230 provided usable data. Therefore, the number of special education teachers responding to each characteristic (grade level, age, educational level, instructional setting, years of teaching, work location, and teacher training) varied.

Third, considering the large number of emails sent to special education teachers and the weekly social media post to special education teachers, the response rate is likely to be small. Many special education teachers may not be active social media users and could not be reached.

Also, the researcher could not email all special education teachers in Texas, which could account for the comparatively low response rate.

Finally, emails were sent out during summer break when special education teachers were on vacation, so it is possible many did not access or monitor their emails which may have impacted the response rate. In addition, many special education teachers to whom emails were sent had their email accounts set up for an autoreply to indicate that their emails were not monitored. Moreover, this was a research-based survey that did not include all analyses for validation. As well, perceptions are difficult to assess by means of a survey.

Implications for Practice

Although VM is an EBP (Dieker et al., 2009; Mason, Ganz et al., 2012; Seok et al., 2018) that teachers can use to help students with disabilities learn various skills, implementing a successful VM intervention without the appropriate training may prove difficult. Cardon et al. (2020) reported that VM is well-known among practitioners who have used it successfully with their clients. However, training and video creation barriers still exist, and more training is required (Catania et al., 2009; Weldy et al., 2014; Wynkoop et al., 2020). For this reason, special education teacher preparation programs should provide early exposure to VM interventions to prepare future special education teachers for classroom success. Teacher training in VM is crucial in helping special education teachers use it in their instructions (Wynkoop et al., 2020). Additionally, by providing special education teachers with adequate training and learning opportunities, and exposure to all the features of VM, such as through in-service or regular staff training, or by providing them with training through teacher education programs, special education teachers can gain confidence in its use.

While some special education teachers have heard about VM and are interested in the strategy, they have not seen it implemented or used it themselves. Therefore, it might be necessary to investigate whether special education teachers in schools use VM in teaching students with disabilities, as almost all the research on VM comes from the researcher's perspective, not the practitioners.

When this survey was posted on social media platforms for special education teachers, many expressed interest and wanted to learn more about the intervention. Therefore, providing special education teachers with more exposure and opportunities to learn the intervention by school districts will be a good step. However, this may not always be possible. Special education teachers can, however, be able to learn how to implement the intervention on YouTube and other online platforms. In addition, for special education teachers with no or limited knowledge about VM applications, background information about the implementation of VM applications can be shared through videos to assist them in using VM to help students with disabilities understand the content.

Future Research

First, based on the results of this study, special education teachers' demographics may be a potentially critical factor influencing how special education teachers perceive VM. The number of teaching years and training affects the effectiveness of VM integration in the classroom. A more comprehensive investigation of the role of demographics is needed to provide school practitioners and researchers with relevant insight into how to support VM integration in teacher education preparation programs and school districts. A continuous effort should be made to research special education teachers experiences using VM in the classroom to explore whether it has had a positive effect and why they might want to use it.

Second, implementing VM will be problematic if special education teachers have little or no formal training. Many special education teachers have not been exposed to VM in teacher preparation programs or district training. Educators' technical knowledge can constrain their perception of VM. As a result, newly credentialed educators report feeling inadequately prepared to work with children with disabilities (Busby et al., 2012; Carroll et al., 2003; Norman et al., 1998) and have poor treatment integrity and implementation outcomes (Digennaro-Reed et al., 2010). Effective professional development strategies are necessary so special education teachers can provide evidence-based instruction and support to students with disabilities (Brock et al., 2018).

Therefore, in addition to focusing on the effectiveness of VM, it is recommended that a greater focus should be placed on how to help special education teachers use the intervention. Future research could focus on equipping special education teachers to use the intervention and what type of support they need to implement VM. Kellems and Edwards (2016) provided resources and practical steps to implement VM successfully to meet individual students' needs.

In addition to providing professional training and mentoring programs to special education teachers to encourage them to use VM, Brock and Carter (2017) recommended combining modeling with coaching and performance feedback as individual components of professional development. The purpose of modeling is to show a teacher how to implement a given practice. In contrast, coaching highlights positive aspects of implementation and opportunities for improvement. In Brock and Carter’s view, these practices are linked by clearly communicating how to implement a practice through modeling and providing teachers with tools to improve their implementation through coaching.

Third, this study did not record special education teachers' daily VM experiences in class. Future studies could look closely at how special education teachers have been implementing VM in the classroom and determine what challenges they encounter. Researchers and practitioners can use this information to learn about best practices for VM integration in the classroom. This may help to better understand how to improve these practices to optimize learning outcomes and teaching to maximize student achievement.

Fourth, according to the findings of this study, many special education teachers do not use VM, either due to a lack of training or because they do not know how to use it. Duchnowski et al. (2006) and Landrum et al. (2003) confirmed that teachers do not consistently use technology with students with special needs in the classroom. Researchers should explore why special education teachers do not consistently use VM in the school and find ways to increase the consistent use of VM with students with disabilities.

Lastly, given that many special education teachers are not using this intervention, it will be necessary for special education teacher preparation programs to incorporate VM practice into their practicum. School districts can offer training opportunities on VM to special education teachers working with students with disabilities and provide them with the necessary support and resources to implement VM in the classroom.

Conclusion

According to this study about special education teachers' perceptions of VM, those who have used VM for teaching students with disabilities have a favorable view of VM's use. A key factor in creating the conditions for teachers to learn and use VM is teacher training. Providing special education teachers with training can increase their confidence and overall attitude towards using VM. Additionally, the study found that special education teachers' years of

classroom experience could influence their use of VM, and their interest in VM decreased as their classroom experience increased. To promote positive attitudes toward and potential use of this effective and efficient teaching tool, it is imperative that special education teachers are exposed to it early and frequently in teacher education preparation programs and within their schools.

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APPENDIX A

SECTION 1: DEMOGRAPHIC INFORMATION

1. **What is your age?**

   (a) 18-29

   (b) 30-39

   (c) 40-49

   (d) 50 and Over

   (e) Prefer not to answer

2. **What is your highest educational level?**

   (a) Bachelor degree

   (b) Master degree

   (c) Doctorate degree

   (d) Prefer not to answer

3. **How many years have you been teaching in total?**

   (a) 0 - 5 years old

   (b) 6- 10 years old

   (c) 11 - 15 years old222

   (d) 16- 20 years old

   (e) 20+

4. **What grade level do you teach?**

   (a) PK-5th grade (Elementary School)

   (b) 6th grade- 8th grade (Middle School)

   (c) 9th grade- 12th grade (High School)

(d) Multiple grade level

5. **In what capacity do you serve?**

   (a) Resource room

   (b) Self-contained

   (c) Behavior classroom

   (d) Other types of special education classroom

6. **What area do you work?**

   (a) Urban

   (b) Suburban

   (c) Rural

7. **Have you had training on using video modeling? (VM)**

   (a) Yes

   (b) No

APPENDIX B

SECTION 2: PERCEPTION ON VIDEO MODELING

Rate your current level of knowledge and preparedness about Video Modeling on the following scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree.				
	Strongly disagree	**Disagree**	**Agree**	**Strongly agree**
1. VM is beneficial for students with disabilities.	1	2	3	4
2. VM is entertaining.	1	2	3	4
3. VM can be a useful tool to assist students with disabilities in understanding content.	1	2	3	4
4. VM allows teachers to demonstrate information, concepts, and skills visually to support students learning.	1	2	3	4
5. VM may be readily individualized to integrate a student's learning.	1	2	3	4
6. VM can be used to teach a variety of skill sets in the classroom.	1	2	3	4
7. VM can be viewed multiple times or even daily.	1	2	3	4
8. VM shows students exactly what is expected of them.	1	2	3	4
9. I would use VM for classroom teaching.	1	2	3	4
10. I am interested in making videos to use with my students.	1	2	3	4
11. I use VM to help students retain information.	1	2	3	4
12. I have good VM resources and materials for instruction.	1	2	3	4
13. I have access to VM-related technology (e.g., iPad, Laptop) on my campus.	1	2	3	4

APPENDIX C

SECTION 3: TRAINING ON VIDEO MODELING

Rate your current level of knowledge and preparedness about Video Modeling on the following scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree.				
	Strongly disagree	**Disagree**	**Agree**	**Strongly agree**
1. Special Education teachers should have training on how to use VM.	1	2	3	4
2. My teacher preparation program provided a training program on VM.	1	2	3	4
3. My school has provided training on VM.	1	2	3	4
4. My school district has provided a training on VM.	1	2	3	4
5. I have taught VM by myself.	1	2	3	4
6. Teacher preparation programs should offer training on VM.	1	2	3	4
7. Campuses should offer training on VM.	1	2	3	4
8. School districts should offer training on VM.	1	2	3	4
9. I have practiced using VM to teach skills.	1	2	3	4
10. I have the necessary technical skills and competencies to implement VM.	1	2	3	4
11. I have experience with video editing software.	1	2	3	4

APPENDIX D

SECTION 4: TEACHER CONFIDENCE IN USE OF VIDEO MODELING

Please rate your current level of confidence in Video Modeling (VM) intervention on the following scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree and 4 = Strongly Agree.				
	Strongly disagree	**Disagree**	**Agree**	**Strongly agree**
1. I am confident in using VM to teach students with disabilities.	1	2	3	4
2. I have knowledge of how VM can be used for teaching.	1	2	3	4
3. I am confident in creating VM materials for students with disabilities.	1	2	3	4
4. I am confident in using VM in the classroom in teaching (functional) reading skills.	1	2	3	4
5. I am confident in using VM in the classroom in teaching (functional) math skills.	1	2	3	4
6. I am confident in using VM in the classroom in teaching social skills.	1	2	3	4
7. I am confident in using VM in the classroom in teaching life skills.	1	2	3	4
8. I am confident in using VM in the classroom in teaching behavior skills.	1	2	3	4
9. I am confident in using VM in the classroom in teaching job skills.	1	2	3	4
10. I am confident in using VM in the classroom to teach various classroom routines and have students imitate.	1	2	3	4

APPENDIX E

RECRUITMENT EMAIL

My name is Emmanuel Sefah, and I am a doctoral student in Special Education at Texas Woman's University. I am studying special education teachers' perceptions on Video Modeling (VM) and Video Prompting (VP) in the classroom for students with disabilities to determine if there are differences in the perception of video technology use among special education teachers and the relationship among Special Education Teacher's VT training, teacher confidence, and use of VT for students with disabilities?

***For the study, I am looking for special education teachers who are currently working with students with disabilities in a school setting (kindergarten through grade 12) to obtain their perspectives regarding the use of VM and VP to enhance educational opportunities for students with disabilities*.**

After you have completed the survey, you will be entered into a drawing to win a $30 gift card. There will be 15 winners. You may request a copy of the research findings. It is hoped that the survey will contribute to the literature on effective teaching practices for special education teachers.

Definition of Terms

Video Modeling (VM) *is a technique for teaching where an individual watches a videotaped*

demonstration of how to perform a task/skill.

Video prompting *(VP), also referred to as video instruction, is a method of providing instruction that breaks down target skills into steps, followed by the opportunity for the person to complete the step before moving on to the next one.*

The survey is available from June 1, 2022, to August 01, 2022. Your participation in the study is voluntary, and you can withdraw at any time.

Please Note: There is the potential risk of loss of confidentiality in all emails, downloading, and internet transactions. To reduce these risks, no identifying information will be collected.

Thank you for your participation. If you have any questions, please you may contact Emmanuel Sefah (esefah@twu.edu) with any questions before, during, or after the completion of the study.

The survey can be completed online. To participate in the survey, please click on the link below, or copy and paste it: https://www.psychdata.com/auto/surveyedit.asp?UID=97319&SID=196001