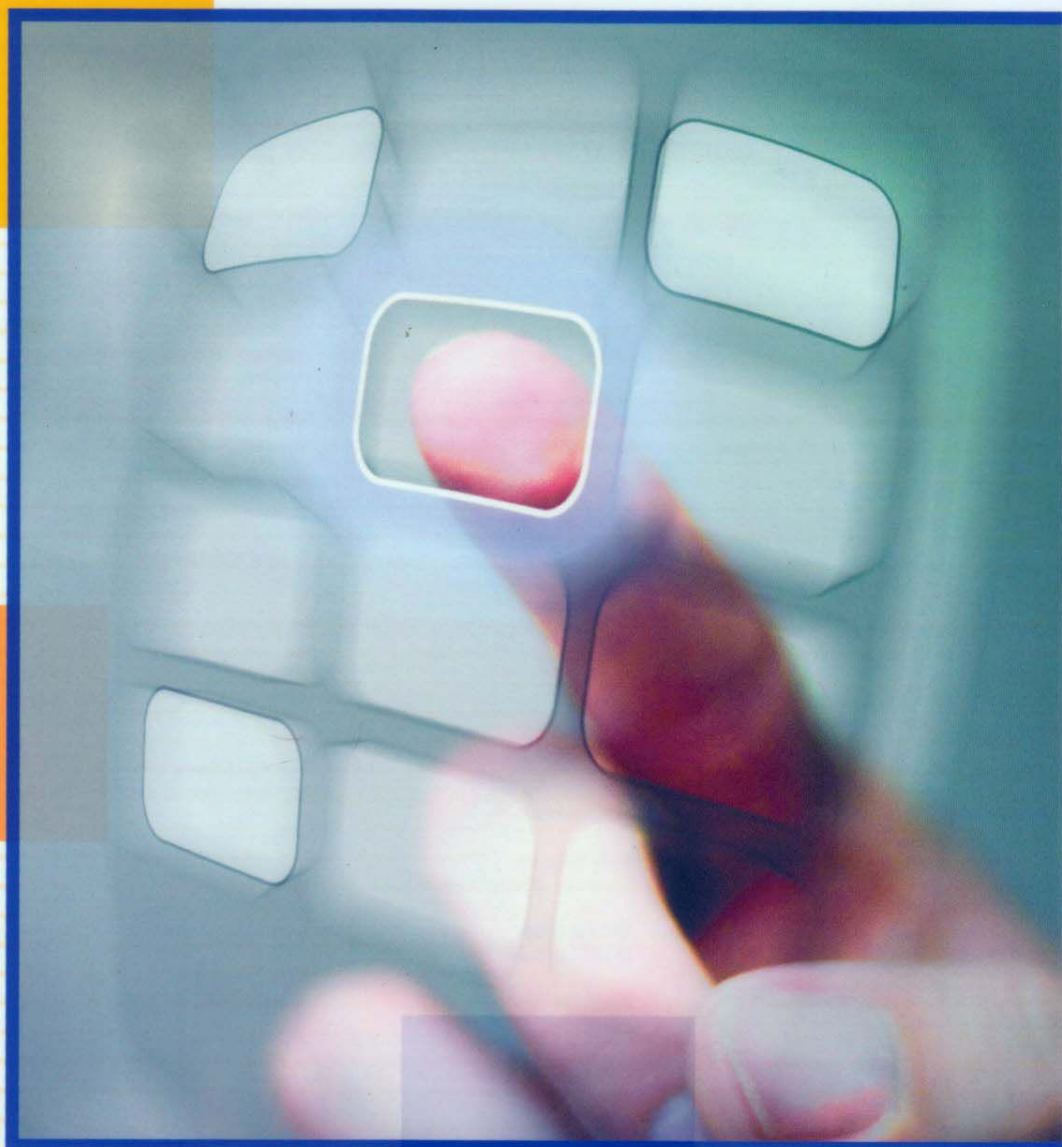


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The Effect of Video Modeling and Video Prompting Interventions on Individuals With Intellectual Disability: A Systematic Literature Review

Jiyeon Park¹, Emily Bouck¹, and Ana Duenas¹

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Abstract

A popular technology-based intervention is video-based instruction (VBI). VBI is known to be effective in teaching various skills to individuals with intellectual disability. Although many researchers have taught this population various skills using video modeling and/or prompting, none have conducted a literature review for this population. The purpose of this review was to analyze different types of VBI (i.e., video modeling, video prompting) used in intervention research, the skills taught using these methods, and their effectiveness. The findings demonstrate both video modeling and video prompting were used to similar extents, daily/living skills were taught more often, and many studies combined video modeling or video prompting interventions with additional strategies (e.g., error correction, constant time delay).

Keywords

intellectual disability, video modeling, video prompting

In the field of special education, a variety of technologies are used to improve the overall outcomes of students with disabilities by providing them the opportunity to enhance their learning outcomes (Cihak & Bowlin, 2009; Edyburn, 2013). One popular and effective instructional technology is video-based instruction (VBI; Mechling, 2005). VBI is a type of multimedia learning that involves the use of words, pictures, and actions to promote learning (Mayer & Moreno, 2003). Video modeling and video prompting are two forms of VBI most often used in special education (Kellems & Edwards, 2016; Rayner, Denholm, & Sigafoos, 2009).

Video modeling is a teaching method that instructs students to watch a short video depicting a target skill followed by a request to imitate what they saw in the video (Alberto, Cihak, & Gama, 2005). Participants imitate the video after a varying passage of time ranging from immediately after the video ends (i.e., simultaneous video modeling) to an hour after (i.e., delayed video modeling). In video prompting, students are shown a video that depicts a sequence of steps, and in between each step, researchers ask the students to perform what they saw in the video, and the researchers provide feedback if needed (Alberto et al., 2005; Cihak, Alberto, Taber-Doughty, & Gama, 2006). Both video modeling and prompting are widely used for developing academic skills, functional/daily living skills, and social skills for individuals with disabilities (e.g., Cannella-Malone et al., 2016; Kellems et al., 2016;

Spivey & Mechling, 2016; Yakubova, Hughes, & Hornberger, 2015). The benefits of video modeling and prompting include immediate feedback, repetition of instruction, and cost efficiency (Kellems et al., 2016; Mechling, 2005). In addition, video prompting has the benefit of presenting instructions in smaller steps, which helps students with intellectual disability (ID) focus on each step rather than a whole task or activity (Kellems et al., 2016).

Both video modeling and video prompting can involve two different categories of models: *other as a model* (i.e., adult, peer, and point of view) and *self as a model* (e.g., Rayner et al., 2009). In videos with other as a model, the model played by an adult, a peer, or the videos can show a particular part rather than the whole person as a model (point-of-view modeling), such as showing hands when teaching mathematics using manipulatives (Yakubova et al., 2015). In videos with self as a model, individuals with disabilities themselves perform the targeted skills, giving them the opportunity to perform the skills. To create these videos, individuals with disabilities are

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Meta-Analysis of Video Prompting to Teach Daily Living Skills to Individuals With Autism Spectrum Disorder

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Mashal Salman Aljehany¹ and Kyle D. Bennett¹

Abstract

We conducted a meta-analysis of the single-case research design data on the effects of video prompting (VP) on the acquisition of daily living skills (DLS) among individuals with autism spectrum disorder (ASD). An analysis of potential moderators was conducted, and these included VP implemented alone versus VP with additional response prompting or error correction procedures, the effects of VP across participants' age range, and the effects of VP among participants with ASD versus those with ASD and intellectual disability. There were 54 participants across 17 studies meeting our inclusion criteria. The results from the included studies demonstrated a moderate effect size for VP on the acquisition of DLS among the targeted population. The analysis of potential moderators showed no significant differences. These results and implications for research and practice are discussed.

Keywords

autism, exceptionality, assistive technology, technology perspectives, video prompting

Individuals with autism spectrum disorder (ASD) experience significant deficits in the domains of social communication and repetitive and restricted behaviors and interests (American Psychiatric Association, 2013). Features of the disorder such as difficulty with attending behaviors; deficits in imitation skills; issues with expressive, receptive, and pragmatic language; and the presence of stimulus overselectivity can result in complications that individuals with ASD experience while learning skills (Gonzalez, Cassel, Durocher, & Lee, 2017). Among the skills that seem to be affected are those related to functional living and vocational, and a lack of such skills can negatively impact independence and quality of life (Carothers & Taylor, 2008).

Daily living skills (DLS) refer to behaviors that allow individuals to function as independently as possible in everyday activities such as hygiene, domestic, community, employment, and leisure (Bennett & Dukes, 2014). Indeed, Domire and Wolfe (2014) contended that such skills are prerequisites needed to enhance job opportunities and independent living for individuals with ASD. Fortunately, there has been a recent increase in research activity to identify evidence-based practices for teaching DLS to individuals with ASD (Bennett & Dukes, 2014).

One evidence-based practice that has gained attention in recent years for teaching DLS is video-based instruction (VBI; Banda, Dogoe, & Matuszyny, 2011). This methodology includes several variations, with the most prominent being video modeling (VM) and video prompting (VP). During VM, a

practitioner plays a video clip of an entire task being performed from beginning to end before the student has an opportunity to perform the skill. When using VP, however, the practitioner plays a video clip of one task step being completed before the student attempts that skill, and this sequence repeats until all task steps have been attempted or completed (Sigafos et al., 2007).


Researchers have demonstrated the effectiveness of VP when teaching DLS to individuals with ASD. To date, three systematic reviews on VP have been conducted (Banda et al., 2011; Domire & Wolfe, 2014; Gardner & Wolfe, 2013). Banda, Dogoe, and Matuszyny (2011) were among the first researchers to examine the literature on the effects of VP with individuals with ASD learning skills. Their review of the literature assessed the effects of VP across 18 studies that were inclusive of 68 participants with developmental disabilities. The majority of participants in the studies were adolescents or adults, and many individuals had a dual diagnosis of ASD and intellectual disability (ID). A significant finding from the Banda et al. study was that VP has frequently been included with different

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Effects of an Interview Article Writing Intervention Using Class-wide SNS on Writing Abilities and Self-Esteem of Students With Intellectual Disabilities and Peers' Attitudes

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Zihyun Lim¹ and Suk-Hyang Lee¹

Abstract

This study was to investigate the effects of a process-based approach to writing interview articles using class-wide social network site (SNS) on the writing abilities and self-esteem of middle school students with intellectual disabilities. It also aimed at investigating these effects on attitudes of the students' peers who were interviewed. A multiple probe baseline design across participants was employed to assess the writing abilities of three students with intellectual disabilities. A one-group pre- and posttest design was used to examine the changes in the attitudes of peers toward the students with intellectual disabilities. The intervention improved the writing abilities of the three participants along with increases of their self-esteem. The participants' peers in the inclusive classrooms also showed positive changes in their attitudes toward the students with intellectual disabilities. This study has significance in that teaching interview article writing using class-wide SNS was effective not only in promoting the writing skills of students with intellectual disabilities but in improving their peers' attitudes toward them. Implications and directions for future research are discussed.

Keywords

students with intellectual disabilities, writing intervention, social service network, self-esteem, peers' attitudes

Since promoting access to general education curriculum for students with disabilities has been receiving increasing attention from practitioners and researchers in special education (Lee, Wehmeyer, Soukup, & Palmer, 2010; Petersen, 2016), academic engagement and the progress of students with intellectual disabilities in inclusive classrooms have been emphasized (Carter, Sisco, Brown, Brickham, & Al-Khabbaz, 2008). In this respect, academic skills, including reading, writing, and mathematics, are beginning to be considered as among the important factors for academic achievement and successful inclusive education (Cannella-Malone, Konrad, & Pennington, 2015; Karvonen, Flowers, & Wakeman, 2013; O'Connor et al., 2017). Especially, writing is an important skill for participating in inclusive environments (Bray, Mrachko, & Lemons, 2014). In spite of that fact, lots of people with intellectual disabilities have deficits in written communication capacity such as delivering information (Belva, Matson, Sipes, & Bamburg, 2012). In addition, most students with intellectual disabilities have difficulties with expressing their thoughts through writing and with acquiring and maintaining writing strategies (Guzel-Ozmen, 2006; Konrad, Clark, & Test, 2017). To address these issues, various strategies have been suggested as useful tools to

enhance writing skills and written communication, such as concept mapping to support generating content (Flanagan & Bouck, 2015), writing software for organizing proper structure (Park, Ambrose, Coleman, & Moore, 2017), a graphic organizer to help compose complicated written expression (Lee, Browder, Hawley, Flowers, & Wakeman, 2016), and writing dialogue journals to develop written expression (Regan, 2003). These strategies are applicable to writing instruction, which focuses on developing the sophisticated writing skills required in each stage of the writing process (Rogers & Graham, 2008).

In the process-based approach to writing instruction, students are encouraged to use specific strategies according to stages of the writing process such as planning, drafting, revising, and publishing (MacArthur, Graham, Schwartz, & Schafer,

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An Exploration of Multimedia Supports for Diverse Learners During Core Math Instruction

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Tara L. Kaczorowski¹ , Andrew I. Hashey², and Dane Marco Di Cesare³

Abstract

In the present study, mobile technology was leveraged as a learning tool for core math instruction during a whole number multiplication and division unit. The researchers redesigned paper-pencil worksheets from the math curriculum into multimedia-enhanced, interactive math practice (the eWorkbook) accessed by students on an iPad. With this eWorkbook, which was conceptualized within a Universal Design for Learning framework, we aimed to reduce barriers and capitalize on strengths by embedding flexible scaffolds/supports, allowing for student choice, and incorporating evidence-based teaching practices. Results of this case study suggest students with and without learning disabilities can leverage multimedia to foster unique opportunities for the understanding and expression of mathematical knowledge. Additional affordances of the eWorkbook include extending the reach of teacher support while encouraging self-support. Implications for teachers and researchers are discussed.

Keywords

instructional technology, specific learning disabilities, Universal Design for Learning, mathematics, multimedia learning

As schools continue to move toward more inclusive models of special education, teachers are faced with the incredible challenge of meeting the instructional needs of every student in their classroom while adhering to rigorous learning standards. Among those students with the most intensive instructional needs are those with learning disabilities (LDs). Students with LD make up approximately 4.5% of the school-age population (U.S. Department of Education, National Center for Education Statistics, 2016), and about two thirds of these students spend 80% or more of their days in a general education setting (Cortiella & Horowitz, 2014). As a result, educators must ensure they are able to provide the intensive, targeted instruction needed by these students within general education classrooms.

LDs typically manifest in specific areas rather than across all subjects; thus, when a child is classified with LD, the classification is often specified in areas related to either reading or math (Compton, Fuchs, Fuchs, Lambert, & Hamlett, 2012). Students with mathematics LDs (MLDs) tend to demonstrate poor number sense (Geary, 2011), an overall lack of schema-based problem-solving strategies (Jitendra & Star, 2011), and while their struggles are generally related to math skills, many also have weak reading and comprehension skills, making word problems particularly difficult (Landerl, Göbel, & Moll, 2013). Additionally, given that students with MLD tend to have poor organizational skills (Cave & Brown, 2010), they may need more support with self-instruction, self-questioning, and self-monitoring while they problem-solve (Montague,

Enders, & Dietz, 2011). Fortunately, current research can direct us toward solutions that can address these barriers.

Researchers of mathematics instruction for students with MLD identify some instructional practices evidenced to improve student learning in mathematics. These practices include using explicit instruction, allowing for student verbalization of mathematical thinking, presenting visual representations, and providing heuristics to organize ideas (van Garderen, Poch, Jackson, & Roberts, 2017). Doabler and colleagues (2012) describe many of the same practices while stressing the importance of preteaching requisite skills, modeling proficient problem-solving, scaffolding instruction by slowly fading prompts/supports, and providing meaningful practice opportunities with timely feedback.

By late elementary school, these instructional practices should be incorporated to support the acquisition of procedural knowledge and skills related to multiplication and division. One way to improve students' procedural automaticity is to

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Comparison of Tablet-Delivered and Instructor-Delivered Teaching on Receptive Identification in Children With Autism Spectrum Disorders

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Sabine Saade Chebli¹, Marc J. Lanovaz¹, and Marie-Michèle Dufour¹

Abstract

The purpose of our study was to compare the effectiveness of tablet- and instructor-delivered teaching (i.e., prompting and reinforcement) on the receptive identification of one-word concepts in children with autism spectrum disorders (ASDs). To this end, we embedded a multielement design within a multiple probe design to compare the effectiveness of the two instructional modalities in seven participants. Two of the seven participants showed generalization on all concepts in fewer instructional trials following instructor-delivered teaching, whereas the remaining five participants had mixed results depending on the concept. In total, the participants showed more rapid generalization with the instructor for 14 of the 19 concepts taught. Our results suggest that tablets should not systematically replace instructor-delivered prompting and reinforcement, but that they may be used to provide supplementary teaching to children with ASD.

Keywords

autism, tablet, generalization, teaching, technology, receptive identification

In recent years, researchers and practitioners have been adopting the use of technology for teaching children with autism spectrum disorders (ASDs; Alzayer, Banda, & Koul, 2014; Kagohara et al., 2013; Knight, McKissick, & Saunders, 2013; Lorah, Parnell, Whitby, & Hantula, 2015; Ploog, Scharf, Nelson, & Brooks, 2012; Ramdoss et al., 2011; Saade Chebli, Lanovaz, & Dufour, 2017; Sansosti & Powell-Smith, 2008; Stephenson & Limbrick, 2015). Even though the literature abounds with examples validating the effectiveness of computer technology with this population, few studies have compared the effectiveness of technologically delivered instruction with traditional teaching (i.e., one that is delivered by a human instructor). Because of the dearth of studies comparing the two modalities, not much is known about the effectiveness of computer-delivered instruction relative to traditional teaching. Despite the growing body of literature pertaining to the effectiveness of technologically delivered prompts (e.g., Goldsmith & Leblanc, 2004; Saade Chebli et al., 2017), whether computer-integrated prompts are more effective than instructor-delivered prompts to teach children with ASD receptive language remains open to debate. Given their increased use in educational and clinical settings, comparing the effectiveness of tablet-delivered teaching (i.e., prompting and reinforcement) with that of a human instructor warrants our attention.

In a notable example, Moore and Calvert (2000) examined the effects of both modalities on the acquisition of vocabulary words in 14 children diagnosed with ASD. Results of the study indicated that children had more favorable outcomes with the computer-delivered condition: They learned more words, were more attentive, and were more motivated during the computer-delivered instruction. While this study represents a strong illustration of the importance of comparing the relative effectiveness of computer- and instructor-delivered teaching, the trainers only used flash cards or pictures during instruction. As such, it is unclear whether learning with technology led to generalization of the concepts to three-dimensional representations. Moreover, both the computer-delivered and instructor-delivered conditions involved the same instructor-delivered verbal prompts, which prevent conclusions from being drawn regarding the relative effectiveness of computer-delivered and instructor-delivered prompts.

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