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VIDEO MODELING AND ATTENTION DEFICIT DISORDER IN MILD AUTISTIC CHILDREN IN A CLASSROOM SITUATION: A CASE STUDY

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Abstract
In this study, video modelling was used to teach different social skills and behaviours in a classroom situation three mild autistic children with attention deficit disorder in a classroom situation, aged between 10 and 20 years. All the children had a formal diagnosis of attention deficit disorder and displayed traits of autism. The different social skills to be taught were greeting the class teacher and mates upon arrival in class and small talk, keeping the school bag where it is supposed to be in the classroom, taking the broom, sweeping the classroom and rearranging the benches the way they should be. The aim of this study was to investigate the rule video-modelling can play in the acquisition of basic social skills by autistic children with attention deficit disorder in a classroom situation and to add on the current literature on the efficacy and usage of video modelling for teaching social skills to children with autism. The overall results showed that video modelling if well exploited and used can serve as an effective resource for teaching social skills to children with autism spectrum disorder and other deficits particularly attention deficit disorder in a classroom situation.

Keywords: *Video Modelling, Attention Deficit, Autism, Classroom Situation, Social Skills.*

INTRODUCTION

Video modelling (VM) is an effective intervention used to teach target skills to students with autism. This type of intervention involves videotaping a target skill, which is modelled by self, peer, or adult in an environment similar to the environment in which the target skills is required. Video-self modelling, point-of-view modelling, and video prompting are three types of VM strategies currently being used as educational tools. Numerous research studies outline several benefits and advantages to using VM as an intervention within an educational setting.

Modelling is defined as an individual observing another person engaging in a target behaviour, which is subsequently imitated by the observer (Charlop-Christy, Le, & Freeman, 2000). Observational learning is learning that takes place by watching a model complete a task. Modelling has a tremendous effect on children because they will often imitate behaviours without reinforcement and they will then generalize these behaviours within different settings (Schmidt & Bonds-Raacke, 2013). The behaviour that is being modelled can be introduced in-vivo or by means of a video (Corbett & Abdullah, 2005).

Of the many characteristics that describe autism, the following four are the most common characteristics that require educational support: language, social interaction, plays skills, and functional skills (Brook, 2009; Corbett & Abdullah, 2005). Research supports the use of VM as an intervention strategy to facilitate the development of language, social interaction, play skills, and functional skills in children with autism. Individuals with autism process information better when it is presented in a visual format rather than an auditory format (Smith, Ayres, Mechling, & Smith, 2013). Visual representations do not impose social attention such as face-to-face interactions (Corbett, 2003; Corbett & Adbullah, 2005). Therefore, the presence of visually cued information makes VM an ideal medium for students with autism to learn new skills. Echolalia and excellent memory are both traits of a typical autistic student; VM is an excellent intervention because these characteristics promote exact replication of instruction (Brook, 2009). Thus, the presence of visual stimuli in video modelling promotes students with autism to acquire skills in communication, social interaction, play skills, and functional skills.

Video modelling is only one facet of the overall modelling paradigm; it is simply a technological extension of in-vivo modelling, wherein the model no longer needs to be in the same physical space as the observer. Both video modelling and in-vivo modelling are effective in acquiring new skills (Charlop-Christy et al., 2000). However, in-vivo modelling requires the model to be present during each intervention session (Lee, Anderson, & Moore, 2014). In fact, the cost for an in-vivo modelling intervention is greater than the cost of video modelling, because of the extra time and resources needed for the in-vivo modelling condition (Charlop-Christy et al., 2000). Additionally, video modelling is more effective because skills modelled in video modelling are formatted and presented in a standardized way, whereas with in-vivo the model might not present the target skill in the same way each time (Marcus & Wilder, 2009). Students with autism acquire and generalize skills quicker with video modelling than with in-vivo modelling (Charlop-Christy et al., 2000). Therefore, video modelling is superior to in-vivo modelling as an intervention for students with autism. Video modelling involves a student watching a video recording of a model highlighting target behaviour in a clear and concise manner (Lee et al., 2014). This method of intervention enables students to recognize both the target skill and the steps needed to imitate this skill. Implementing a video modelling intervention involves the following 6 steps:

- Define the target behavior.
- Construct a task analysis of the target behavior.
- Determine the ideal location of the camera to ensure that the target behaviour is captured.
- Demonstrate the target behaviour with the videotaping model at a slow place.
- Monitor the student's reaction to video modeling.
- Plan ahead (Brook, 2009; Wilson, 2013).

Target skills can be presented to students through the use of TVs, video games, computer programs, and hand-held devices such as iPads (Mechling & Gustafson, 2009; Smith et al., 2013). The use of iPads within the classroom is perceived a leisure activity, therefore motivating students to participate more readily within the classroom. Video modelling is an effective intervention that promotes students to use technology to acquire new target skills. Technologies are rapidly changing and becoming more pervasive within the educational system, enabling educators to use mobile devices to produce Video Modelling opportunities for students with autism.

The Relevance of Video Modelling in Teaching Children with ASD

The delivery of visual supports through the use of technology creates advantageous educational opportunities for students with disabilities (Acar & Diken, 2012). The following are advantages of using Video Modelling within an educational setting:

It is both a time-efficient and cost-effective intervention, potential for systematic repetition, presence of a variety of examples, use of models in more than one intervention, and flexibility of video editing (Corbett, 2003; Mechling & Gustafson, 2009). The development of videos used in Video Modelling is both cost and time effective because models need to be present only once during the filming of the target skill. Once videos are created, they can be presented countless times to a specific student until he/she establishes the target skill.

Videos can also be reused in different interventions, provided the target skills presented within the video are the desired skills to be established in each intervention.

Also, a model can film more than one example during a videotaping session to promote generalization of the target skill.

Zoom features of video cameras allow the recorder to zoom in on key aspects of the model, which removes any distracting visual stimuli.

Similarity, editing features within video programs enable the creator to accentuate certain features and remove any distracting features, which prevents stimulus over selectivity (LeBlanc et al., 2003).

These advantages are reasons for technologies becoming a popular method for educators to use as an intervention strategy within their classrooms. In addition, video modelling offers numerous benefits when it is used as an intervention strategy.

First, video modelling provides the opportunity for students to watch the desired target skill being performed in the exact setting in which they are required to imitate the skill (Ayres & Langone, 2008). Modelling the target skill in the same setting increases the likelihood that students will be successful in attaining the target skill.

Second, using video modelling increases the motivation of students and acts as a naturally reinforcing method of skill acquisition (Acar & Diken, 2012). Since motivation increases the desire to practise a skill, target behaviours are often rapidly achieved compared to other interventions. Third, video modelling offers the opportunity for educators to slowly remove the presence of the videos to promote independence in maintaining the desired target skill. Students only acquire and maintain target skills, but they learn to generalize these skills within other environments (Akmanoglu, Yanaradag, & Batu, 2014). By means of video modelling , students observe targets

skills in required environments, gain motivations through the use of an appealing method of delivery, and gain independence by fading the presence of the video.

Video modeling is thought to improve stimulus control, as it is able to selectively direct the child's attention to a particular element within a scene or image (McCoy and Hermansen 2007; Sturmey 2003). This increases the likelihood of accurate imitation, with less confusion as to which element of a scene is the focus of attention. Well-constructed videos that capture the child's attention, portray the task clearly with sufficient detail and provide multiple exemplars of the modeled behavior, and which include elements that aid retention are likely to be more effective that those videos that do not. There are several types of video modeling including scene view video modeling (e.g., Nikopoulos and Keenan 2004; Kleeberger and Mirenda 2010), video self-modeling (e.g., Buggey 2005), and point-of-view video modeling (e.g., Hine and Wolery 2006). All have shown promise as an intervention for children with Autism Spectrum Disorder. Point-of-view video modeling (POVM) involves filming from the perspective of the person who is the target of the intervention (Hine and Wolery 2006). It is a relatively novel approach, with little research available concerning its effectiveness. It possibly improves stimulus control through selectively directing the viewer's attention to specific elements within the image.

RELATED THEORIES

Video-modelling stems from Bandura's (1997) social learning theory, which focuses on the concept that observational learning through modelling has a profound impact on the skill development of children. According to this theory, people learn from each other by watching and copying. Another key concept in Bandura's social learning theory is self-efficacy, which pertains to one's beliefs about their performance capabilities and their influence over events that affect their life; linking to their motivations and behaviours. Thus, video modelling, where individuals watch footage of themselves (video self-modelling) or others (pre-taped video-modelling) demonstrating desired target behaviours successfully and discussing the behaviours, reflects aspects of both Bandura's (1997) social learning theory and Barkley's (1997) cognitive model of behavioural inhibition. Video-modelling is an empirically validated psychosocial intervention technique for children with other developmental disabilities who have significant social problems, such as children with autism spectrum disorders (ASDs) and behavioural difficulties (Nikopoulos & Keenan, 2004; Rai, 2008). Given that video-modelling supports self-reflection, evaluation of one's own performance, and the ability to anticipate situations, there is also potential for this approach to support self-awareness and perception and, therefore, alter metacognition (Zlotnik et al., 2020).

METHODOLOGY

Design

This study utilized a descriptive survey design where qualitative approaches were used in data collection and analysis. A research design is described by Creswell (2009) as the plan and procedures for conducting research. According to Creswell an appropriate research design is essential to help collect, analyze and interpret data so as to answer the research question(s).

Study Site

The study was conducted in the special school in PROMHANDICAM Yaounde. Purposeful sampling was used to select three children from this center.

Sampling

The sample included 3 participants from a population of 20. This sample was deemed fit based on Cohen, Manion and Morrison (2002, p.94) to allow generalization of the findings.

Data Collection

Observation was the main data collection tool that was used. The children were closely observed in a classroom context. This tool was chosen due to the fact that most children with ASD do not speak. The researcher presented prepared videos for the participants to watch and execute or imitate what they watched. The participants watched the video in a laptop computer. The video comprised of a girl who comes to school in the morning, enters the classroom, greets the teacher and friends, keeps her school bag where it is supposed to be, takes the broom, sweeps the floor and rearranges the benches the where she met them. The duration of the video was 15minutes.

Results

Transitioned to self-monitoring behaviour in classroom for 15 min a day, two days a week was observed. On task behaviours defined as they concentrate on task trying to imitate what was watched in the video without talking to neighbours, fidgeting or being out of seat out of class. On the first week, it was conspicuously noticed that the children first of all developed interest in watching the video. When they were asked to reproduce the behaviour they watched, they did it with a lot of difficulties as it was observed that forgot some of the activities watched.

On the second week, it was observed that the rate at which they made errors reduced as they watched the video over and over and try to imitate the behaviour observed. They continued to show much interest in watching the video. On the third week, it was observed that the desire to watch the video continued and they made significant improvement in the reproduction of observed tasks. The same observations were made on the fourth week with greater improvement noticed. Generally, the children's' desire to watch the video remained constant at some point as they struggled to reproduce exactly watched in the video.

INTERPRETATION AND DISCUSSION

I identified, appraised, and synthesized the usage of video-modelling interventions for individuals with attention deficit disorder having autistic traits in a classroom situation. Video-modelling studies for children with attention deficit disorder having autistic traits contain preliminary evidence for effectiveness with small samples; evidence from this study suggests this approach has the potential to be an effective technique to capture the attention of children with attention deficit disorder having autistic traits (Dowrick, 1999). The findings from these studies were consistent with previous studies using video-modelling to improve the social skills of children with other diagnoses (Dowrick, 1999, 2012; Wang et al., 2011). Effects during the intervention were all positive except for Embregts (2002) and Foley-Nicpon et al. (2017) who reported mixed results. Embregts (2002) study included children with ADHD and mild mental retardation. The authors highlighted the mixed effects among participants and the need to consider children's cognitive development. The results from this study indicate that video-modelling may be best suited for children with ADHD who do not have any intellectual impairment and who attend mainstream classes. Given the cognitive difficulties associated with the disorder, another consideration is the timing of video-feedback. According to Barkley (1997), children with ADHD have difficulty anticipating and performing the needed skills in the moment of interaction Thus, a video-feedback session may be most effective when an opportunity to practise the desired skills follows immediately. In this instance, video-feedback prepares children to think about the skills demonstrated in the video as they enter forthcoming interactions (Axelrod et al., 2014; Laurin, 1993; Wilkes et al., 2011). According to Axelrod et al. (2014), Laurin (1993) and Wilkes et al. (2011), when the practice opportunity involves spontaneous peer interactions and adult assistance, skill development may be further enhanced.

Improvements during the intervention period decreased during the withdrawal/follow-up phase. (Axelrod et al., 2014; Laurin, 1993; Woltersdorf, 1992) These findings are similar to previous research on psychosocial interventions for children with ADHD that show children have difficulty maintaining and generalizing treatment gains over time, after the discrete intervention period.

These findings may suggest that video-modelling used in conjunction with other intervention components (i.e., parent training and involvement) and extending the use of video-modelling to multiple settings may increase generalisation and maintenance of treatment effects over time (Abikoff, 2009). Suggesting a helpful type of parent involvement would enable parents to use social skills focus methods combined with positive behaviour strategies to help coach and facilitate children's social skills and peer relationships long after intervention is finished. As video-modelling uses a positive behaviour approach to target social skills and relationships, it has the potential to be used in social skills interventions to help address current shortfalls by continuing parent involvement and skill generalisation after the intervention period. However, further research is required to confirm these postulations.

CONCLUSION AND SUGGESTIONS

The results of this study are primordial for we actually need to do further larger-scale studies to investigate the effectiveness of video-modelling for improving the skills/behaviours of individuals with attention deficit disorder in a classroom situation of all categories. The ongoing social difficulties experienced by individuals with attention deficit disorder in a classroom situation and shortcomings of current pharmacological and social skill interventions make the investigation of alternate psychosocial interventions essential (Storebø et al., 2011), particularly when such interventions have the capacity to be used in conjunction with medication and implemented feasibly over time and across different settings.

The results indicates that video-modelling can be a promising intervention approach for targeting the social skills and behaviours of individuals with attention deficit disorder in a classroom situation when used in conjunction with other intervention components. However, more studies with adequate sample sizes and more rigorous research designs are needed before the effectiveness of this approach can be fully confirmed.

We suggest that studies should be carried out to (a) calculate appropriate sample sizes; (b) ensure randomisation, allocation and concealment, and blinding procedures are clearly planned and reported; (c) control for medication as a potential confounding variable; (d) examine the effectiveness of video-modelling as both the whole intervention and intervention component; (e) ensure the included population has a clear diagnosis of attention deficit disorder in other settings other than in a classroom situation (f) use valid and reliable outcome measures in

conjunction with observational behaviour frequency ratings; and (g) ensure an adequate follow-up after treatment phase.

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