# *Video Self-Modeling Intervention on the Social Skills of Children with Autism Spectrum Disorder*

Mark Ryan F. Romero, Department of Education-Pasig City, Philippines

**Abstract**

Autism is a worldwide health dilemma that knows no boundaries—it does not categorize based on people, culture or societal status. Children with autism spectrum disorder (CWA) have social skill impairments that are predominantly challenging for them. The alarming impact of social skill impairments of CWA creates a need for an effective, evidence-based, best pedagogy and intervention that should be implemented early in a child's development to diminish barriers in acquiring important social engagements. This research aims to evaluate the use of Video Self-Modeling (VSM) as an intervention for social skills impairments of the CWA. The goal of the VSM is to transform a supported skill to an independent skill. It allows the child to see himself through videos performing targeted behaviors. The researcher used a purposive sampling of 10 children diagnosed with autism spectrum disorder. The research is a non-experimental, descriptive, case-study and utilized survey instruments, documentary analysis, interviews, and observations. The study revealed the common social skill impairments of the CWA negatively affecting their relationship with the others. After the use of the VSM intervention, most of the clients demonstrated substantial progress and development on their target social skill impairments. This result suggests that the use of VSM is an effective intervention for social skill impairments of the CWA. In addition, only a small number of clients showed no positive changes in their target behaviors. The research also revealed the difficulties experienced by the teachers and the students on the implementation of VSM.


Keywords: autism, social skills, and video self-modeling

**Introduction**

There are approximately 67 million people who are affected by autism spectrum disorder (ASD) around the world (Autism Speaks, 2008). Based on the current estimate of the United Nations, 1% of the global population are on the autism spectrum. In the Philippines, an estimated close to a million families deal with autism daily (Autism Society Philippines, 2012). The number of people with ASD in our country and other countries worldwide has almost doubled in the past six years and the number is still rising (Jaymalin, 2014). To recover the lives of the rising number of individuals and families shaken by this disturbing disorder, it is high time that the world begins to identify the magnitude of this problem and act not simply locally, but instead globally (Kopetz & Lee, 2012).

Autism is a complex neurological disorder diagnosed when an individual displays deficit in social-emotional mutuality ranging from abnormal social approach and failure of mutual conversation. Children with autism spectrum disorder (CWA) also manifest deficiencies in developing, maintaining, and understanding relationships. They also experience difficulties adjusting behavior to suit various social contexts; difficulties in sharing imaginative play or making friends; and absence of interest in peers (American Psychiatric Association, 2013). Apart from these challenges, most CWA still struggle to confidently stride over different life difficulties aside from their condition. Participation and engagement are such social skills that are being very difficult for the CWA. CWA who have failed to manifest these social skills behaviors are likely to be rejected by their peers. However, CWA who have acquired the appropriate social skills made it possible to initiate and develop positive social relationships with others and provide them communication strategies to highlight their needs, desires, and preferences.

Unfortunately, the education and psychology sectors have historical records that they have neglected these individuals (Boudreau & Harvey, 2013). They have engrossed their researches on disabilities and the deficiencies of CWA and unheeded the positive qualities such as relative strengths, positive emotions, fulfilment, life satisfaction, self-determination, and joy- qualities that make life worth living (Bellini & McConell, 2010). Most schools focused on academics and this ensues little time to engage CWA to acquire different social skills (Vining, 2010). The purpose of this paper is to assess the effectiveness of the video self-modeling intervention technique in modifying the social skill impairments of CWA.

This research utilized case study with combine data collection. The research is a qualitative type of study that used observation and formal interviews with parents and teachers in gathering data to address the main research questions and used the purposive sampling. 10 children with autism spectrum disorder are the clients of this research. The criteria used in the selection of the samples are (1) the client has an official diagnosis of having an autism spectrum disorder; (2) the client is currently enrolled in a segregated or mainstreamed class; (3) the client is under the age range of 6-15 years old. Questionnaire-survey/checklists were the primary tools used in gathering the data to achieve the goals of this study. The instruments were content validated and checked by the experts in Research and Special Education fields. The pilot test was conducted with participants that have similar profiles as those that will

participate in the implemented study. The pilot test assisted the researchers with the refinement of research questions.

The direct interview of the researcher with the teachers and the parents of the CWA about the clients significantly helped the researcher in the examination of data and contributed weight to the reliability of the answers and how the respondents delivered evidences on their responses. Interviews provide in-depth information pertaining to participants' experiences and viewpoints on a specific topic. The interview schedule was validated by the Research and Special Education experts. After the validation stage, the pilot testing was also conducted to two teachers and two parents. Triangulation was also done by comparing the responses of the group of participants. To gather data and information from the participants of this research, which deepened the study about the social skill impairments of the CWA, the researcher conducted orientation for the parents and the teachers. In addition, survey-questionnaires were answered by 10 parents and eight teachers. Interviews were also employed to the parents and the teachers to expand the scope of this research. Lastly, a series of observations by the researcher were conducted to validate and confirm the answers from the respondents.

**Review of Literature**

Social skills are the ability to communicate, persuade, and interact with other members of the society without undue conflict or disharmony (American Psychiatric Association, 2013). Some examples of social skills include smiling and making eye contact, asking and responding to questions, greeting and starting conversation with others, and giving and acknowledging compliments during a social exchange (Rao, Beidel, & Murray, 2008). Developing good social skills include the development of the child's play skills embracing the skills in taking turns in a game, sharing a toy or material, joining a group of children who are already playing, and playing cooperatively with others. Better social skills also mean good communication skills manifested in choosing what to talk about or what body languages to use, introducing self to others, using appropriate tone and volume of voice, and taking turns in speaking. Suitable social skills also involve emotional skills which hold the ability to manage emotions and to understand how others feel (Raising Children Network, 2017). Good social skills lessen the chance for negative connections. Being the building blocks for friendship, social skills give children the chance to learn how to be considerate, confident, and caring of others.

Cullata, Tompkin, and Werts (2003) defined impairment as the lack of expertise or abilities to perform a task in the same manner as most persons. Children who have social skill impairments lack the behavioral collection necessary to interact with others, a deficit that affects both academic and social development. CWA experience impairments in social interaction and communication skills, with these impairments being identified as the most conspicuous feature of CWA. They demonstrate fewer social initiations and reactions. The social deficits exhibited by them disturb their ability to successfully interact with friends and adults, which results in decline opportunities to establish friendship and ensuing seclusion from peers (Radley et al., 2017). In addition, limited social skills can affect the child's ability to attain normal developmental milestones and establish sustaining peer and household relationships (Rao et al., 2008). It is also essential for children of all ages to gain proper social

skills, because social skills are the best portal in creating and maintaining relationships with others.

The DSM 5 (2013) as mentioned in American Psychiatric Association (2013) expounds that CWA prefer to play or spend time alone; they show little interest in making and keeping friends. They do not respond when their names are called or make facial expressions or gestures as signs of reciprocity. They do not like being touched and they resist cuddling. Furthermore, they do not seek or accept comfort when they are hurt, and they do not initiate social initiative play. It has been suggested that the impairments in social skill falls along a wide-ranging spectrum. Children who are under the spectrum opted to evade other people, do not know how to initiate and sustain communication, and therefore, their communication is usually unfitting. In addition, studies have reported that CWA cannot interpret the feelings and moods of others or foresee social events; they show impairments in listening and responding to others' demands, and in cooperating games and other activities. Furthermore, play skill impairment is also a common and critical component for children with autism, constrained play skills eradicate mutual tools needed to build independent performance and relationships (Morrison, Sainato, Benchaaban, & Endo, 2002). Moreover, some social signs, such as smiles and eye contact may be irrational to them (Golzari, Alamdarloo, & Moradi, 2015).

It is enormously imperative for educators to find significant and effective ways of supporting students with special needs to guarantee that they are confident and well-prepared to steer the social discernments and behavioral expectations of their school experiences. Equally within and outside of the school setting, Video Self-Modelling (VSM) has established to be both strong and efficient in addressing a variety of student problem behaviors. (Schaeffer, Hamilton & Johnson, 2016). The use of VSM, watching and learning from one's own positive behavior, is relatively a new modeling that first appeared in the literature in the early 1970's (Buggey & Ogle, 2012). Primarily, the goal of the VSM is to transform a supported skill to an independent skill. It allows the child to see himself through videos performing targeted behaviors (Bellini & McConnell, 2010). When the video is viewed in the VSM, the child only sees himself performing the specified target behavior at the mastery level, without errors, prompts, or off-task behaviors. Taking videos of individuals and watching themselves as the models is an intervention that maximizes characteristics and behaviors to promote modification to the model. Results from video modeling interventions have been promising in the acquirement, transmission, and preservation of target behaviors (Boudreau & Harvey, 2013).

VSM has been used across multiple disciplines including children with attention deficit hyperactivity disorder (ADHD), learning and cognitive disabilities, autism spectrum disorders, and various physical disabilities (Bellini & McConnell, 2010; Buggey & Ogley, 2012). VSM has also been used across a wide range of school ages, including preschool, elementary school, middle school, and high school (Prater, Carter, Hitchcock, & Dowrick, 2012). It is a strength-based intervention that focuses on the strengths of a child rather than on his weaknesses (Bellini & McConnell, 2010. Currently, VSM can be considered as an effective intervention for CWA across the four categories of language and communication, social skills, behavior and task instruction (Gelbar, McCarthy, & Buggey., 2012). In a classroom setting, the use of VSM has been effective and has shown ability in modifying the behavior of

individuals with ASD in both teaching skills and remediation problem behaviors (Gelbar et al., 2012). VSM has a precise, strong research base when implemented for CWA. Because of the proliferation of educational technology tools in the classroom, VSM has gained distinction as a means of improving behavior skills of those children with disabilities. The impact of the VSM as an intervention in the classroom has been the talk of the people searching for a dynamic intrusion for different skills.

Merrill and Risch (2014) presented a complete guide on the use of VSM. Ten steps are outlined which described how VSM is implemented with the CWA. The preliminary and most important step in implementing VSM is targeting a behavior for the intervention. The target behavior must be specific, attainable, and measurable. After successfully identifying the target behavior, having the correct equipment to be used must be the next priority. Facilitators should choose the fitting equipment based on the resources that are available in schools and in the locality and the budget limits. The third step is the planning stage. A task analysis is helpful for breaking down a difficult skill into an order of several behaviors. The plan should also contain a list of all the steps required to complete attaining the target behavior. Making the video is the heart of implementing the VSM. In creating the video, the facilitators must ensure that the videos made are acceptable in feature and accurately replicates the steps of the task analysis. After the video is recorded, it may need to be edited to eradicate any errors, and to take out prompts or added cues. Arranging the environment for watching the video is the subsequent procedure after the recording and editing process. The facilitators of the VSM should identify the environment where and when the video will be shown. Showing the video is the seventh step in implementing VSM. The facilitators of the VSM allow the CWA to watch the video and provide prompts needed to gain and/or keep attention. It is important to let the learner watch the video number of times before expecting the learner to demonstrate the target skill.

**Research Questions**

This research specifically answered the following questions:

1. What are the social skill impairments of children with autism spectrum disorder before the use of video self-modeling?

2. How is video self-modeling used in teaching social skills to children with autism spectrum disorder?

3. What changes were identified after the use of video self-modeling on the social skills of children with autism spectrum disorder?

4. What are the challenges experienced by the teachers and students on the use of video                                                                                          self-modeling?
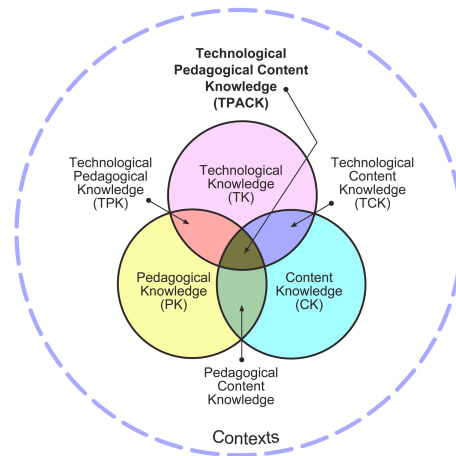
Figure 1: The Technology, Pedagogy, and Content Knowledge (TPACK) framework

Figure 1 shows the Technology, Pedagogy, and Content Knowledge (TPACK) theory by Punya Mishra and Matthew J. Koehler form the core framework of this research. At the core of effective teaching with technology are three fundamental components: content, pedagogy, and technology, plus the connections amongst and between them. These three knowledge bases form the fundamentals of TPACK framework. On an academic level, newer digital technologies such as computers, handheld devices and software applications bring about new challenges to teachers who are struggling to utilize more technology in their teachings. Teaching with technology is a complex process. Teachers often have insufficient trainings by using digital technologies for teaching and learning. Many educators earned degrees at a time when educational technology was in a very different phase of advancement than it is presently. Consequently, it is not surprising that they do not consider themselves sufficiently prepared to use technology in the classroom and often do not have appreciate its value or relevance to teaching and learning (Mishra & Koehler, 2007).

**Conclusions**

| Client | Target behavior | Description |
|---|---|---|
| #1 | Join a group of children who are already playing | sometimes observed |
|  | Say "NO" to indicate disagreement | sometimes observed |
| #2 | Greet the teachers at the corridor | never observed |
|  | Say "EXCUSE ME" in appropriate situation | never observed |
| #3 | Invite others to play | never observed |
|  | Join a group of children who are already playing | sometimes observed |
| #4 | Invite others to play | never observed |
|  | Assist others in need of help | sometimes observed |
| #5 | Start a conversation with others | never observed |
|  | Establish eye contact with others during interaction | never observed |
| #6 | Ask others for help | sometimes observed |
|  | Give compliments to others | never observed |
| #7 | Asking permission when borrowing | never observed |
|  | Comfort others when they are upset or hurt | never observed |
| #8 | Start a conversation with others | never observed |
|  | Introduce self to others | never observed |
| #9 | Greet the teachers at the corridor | never observed |
|  | Join a group of children who are already playing | never observed |
| #10 | Greet the teachers at the corridor | never observed |
|  | Join a group of children who are already playing | never observed |

Table 1: The target behavior of the CWA before the VSM intervention.

In table 1 it shows that most clients manifested impairments in greeting the teachers and their classmates. The researcher had observed that clients rarely give compliments to others. Most of the CWA acted indifferently in situations where giving compliments are expected to be demonstrated by them.

Table 2 presents a sample pre-intervention social skill impairment of a client.

| Social skill impairments of the child with autism spectrum disorder inside the classroom | Codes |
|---|---|
| Client #3 is 7-year old girl diagnosed with autism spectrum disorder when she was four years old. She uttered her fist word when she was two years old but seems to have regressed and that she could now only say the words *"baho", "ice cream",* and *"birthday"* occasionally.  Her developmental report tells that her behaviors during the evaluation were significant for impaired social exchange including her play skills.  Her social and play responsiveness and the ability to interact with other children is on 3.0-3.3 age equivalent. | • prefers to play alone<br><br>• does not know how to invite others to play with her<br><br>• does not ask others to let her play with them |
| Inside the classroom, she does not bid for attention or help but rather does things on her own.  She is unable to establish and maintain eye contact with his classmates. She shows repetitive and restrictive behavior- lining up the toys according to color or size and gets upset when these were disturbed or disarranged. She prefers to play alone with her favorite toys and materials. She always plays with her clay.  She rarely invites others to either join her in playing or join other children who are already playing. | |
| Her developmental pediatrician recommended to have a one-on-one session with an occupational therapy-three times a week. She also needs to be exposed to other children for enhancement of her social and communication skills including her play skills. | |

Table 2: Pre-intervention Social Skill Impairments of Client #3

Once the goal has been determined and the equipment to be used has been completed, the researcher thoroughly designed the recording stage. The researcher prepared script using the task analysis of the behavior which will undertake intervention.  The scripts presented were not less than four steps, but not more than six steps. The researcher determined the location with restricted distractions for the video recording activity and additional supports were also included such as the parents, teachers, and classmates of the clients were involved to capitalize the natural setting of the recorded video.

To minimize distractions and interferences, most of the recording activities were done after the class. Blocking, lighting, and the set design were given attention to produce a seamless video clip. The researcher recorded the target behavior for at least four to six to display the expected skills as early as possible. For non-verbal clients, gestures, signs and body language were very important part of the recording process. The researcher used video editing applications downloaded in an android tablet for editing

the raw videos. The videos were edited to remove the teacher's prompting and other visual supports that were employed in the recording process. Additional positive reinforcers, such as music or the sound of clapping, were also added to supplement the affirmation component. But the researcher noted that if too many special effects such as music background noises or fancy transitions were added, these potentially take the child's attention away from the target behavior. The whole implementing process lasted for 10 days. On the first day up to fourth day of the implementation, the clients watched the video with a close monitoring and guidance of the teacher. On the fifth up to the seventh day of the implementation, the teacher provided the subject with the questions and asked the subject to imitate or demonstrate the actions shown in the video for each step. On the eight to the 10th day of the intervention, the videos will no longer be shown, but drills and practices were done demonstrating the target behavior.

Table 3 shows a sample post-intervention social skill impairment of a client.

| Changes observed to the client with social skill impairments after the use of Video Self-Modeling inside the classroom | Codes |
| --- | --- |
| On the first two days of the intervention, the researcher had difficulty motivating the client to watch the videos. The client wanted to do her daily routine inside the classroom. On the succeeding days, she viewed the videos with limited verbal responses but showed positive facial expressions and gestures. Her strong attachment to her favorite materials had manifested during the viewing stage, but showed significant interest responding on the questions of the researcher. Her VSM video teaches her to initiate play with her classmates by tapping the shoulder of her classmates or by sharing toys with them. Generally, she enjoyed watching her own videos.<br><br>During the demonstration stage of the target behaviors, the client tried her best to invite her classmates to play with her. She tapped the shoulder of her classmates and offered her toys as shown in the VSM videos- indicators that she wanted to play with them. The researcher noted the shifting of the client from being passive to an active player after the implementation of the VSM intervention. She now expresses her desire to play with her classmates and now enjoys sharing the classroom materials with her classmates. She started to open herself to play with her peers- substantial change that VSM brought to the client. | • She starts to mingle with the group of children who are playing.<br><br>• She initiates play with her classmates. |

Table 3: Post-intervention Social Skill Impairments of Client #3

Table 3 shows the post-intervention social skill impairments of client #3. In general, after the intervention, the data gathered from the 10 clients revealed that VSM really helped improve most of the social skill impairments of the CWA such as asking others for help, introducing self to others, greeting the teachers and peers, and inviting and joining others to play with. Prater et al. (2012) said that the use of VSM served as a strong motivator for social skills improvement; and some students can be trained

also to support with the recording and editing, freeing the teachers to continue with their typical duties. Furthermore, Schaeffer et al. (2016) concluded that the VSM videos are easily created and implemented into the genuine school setting and can focus on social skills needed for social success. They have also underscored that VSM is a significant and effective intervention of supporting CWA to guarantee that they are assertive and equipped to steer the social discernments and social expectations of their school experiences. The positive testimonies gathered by the researcher from the teachers who facilitated the VSM as well as the interviews with the parents supported the claims of   Schaeffer et al. (2016) who posited that VSM has established to be both strong and efficient in addressing a variety of student problem behaviors. In addition, their testimonies also intensified his proposition that the use of VSM is effective because people learn best from the models that most resembles them and having oneself as the model improves this element.

The different challenges experienced by the teachers, the recorder and the editor of the videos, and the students revealed that the implementation of VSM intervention required extra time and effort. It can also be inferred that having advanced technological skills in creating, and editing videos are essentials for a teacher to implement the intervention. This supported the idea posited by Mishra & Koehler (2006) that using technology in education required a deeper, more vital understanding and fluency of the technology for information processing, communication, and problem solving.  The different challenges mentioned supported the claims of Buggey and Ogley (2012) that despite of the overwhelming empirical support for the efficacy of VSM, there are only minute numbers of schools implementing VSM in their classrooms. This lack of implementation can be attributed in large part to the apparent trouble involved in editing and producing videos, ability to purchase equipment, and the amount of time required for implementation. Bellini and McConell (2010) also supported the findings that the impermeable impediment that educators and parents report is the time constrictions.

Based on the data obtained from the survey by the teacher and parents of the CWA and the researcher, the most prominent social skill impairments of the CWA were the following: impairments in greeting others, initiating conversation, using fitting tone and volume of voice, taking turns in speaking, establishing eye contact and body languages including total lack of facial expressions, developing, maintaining, and understanding relationships,  and impairment in sharing imaginative play or making friends including absence of interest in peers. The VSM has been used in teaching social skills to CWA. This research implemented VSM in teaching the social skills with the following steps:  choosing the target behavior, gathering the correct equipment, planning the recording activity, recording the videos, editing the videos, and implementing the VSM to the clients. After the implementation of the VSM with clients, series of observations were conducted to assess the effects of the VSM on the social skills of the CWA. The VSM intervention lasted for 10 days, which includes the viewing stage for four days, the practice stage for three days and the post intervention stage for two days. The result of the VSM intervention for each client ranges from no positive result at all to substantial progress demonstrated for each skill. Some clients also showed slight progress on their impairments. It was also found out that the use of VSM as an intervention on the social skills of CWA is effective in a broad age range of children and can be implemented in a variety of settings. Most teachers and parents expressed their gratefulness in the positive impact of using VSM

on the social skill impairments of the CWA. The 10-day implementation of the VSM consumed much time on the part of the teacher since they were the facilitators of the intervention. The challenges encountered by the teachers and the researcher also included the extensive effort utilized in creating seamless videos.  Viewing and practicing sessions of the VSM for each client resulted also in class disruption. And lastly, all teachers agreed that VSM intervention is a costly mediation activity since there were equipment utilized during the implementation.

The challenges encountered by the students include their inability to act out in front of the camera demonstrating desirable behavior, their readiness in attending or watching the videos daily, their atypical behavior in demonstrating or practicing the target behavior, and the extension of the VSM intervention due to their frequent absences in the class. The data gathered from the social skills survey were utilized by the researcher in delimiting the use of VSM in the social skill impairments of the CWA that can only be recorded using VSM. The reorganization of the steps on the use of VSM was transformed into a more fitting intervention based from the principles of VSM. Thus, the number of days for video viewing was lengthened. Since the use of VSM at home setting yielded positive results on the social skill impairments of the CWA, instructions were also provided for the use of VSM at home setting. The challenges experienced by the teachers like the expenditure of having a costly video recorder was addressed by providing ideas in utilizing cheaper but practical equipment.

Based from the findings of the study, the following conclusions were drawn: (1) children with autism spectrum disorder (CWA) experience a wide-ranging area of social skill impairments, including impairments in social-emotional exchange, impairment in nonverbal communicative behaviors, impairment in establishing and maintaining relationships, and  impairment in play skills; (2) implementing VSM in teaching social skills to CWA were methodical, easy-to-implement and result-oriented; the use of the VSM as an intervention for the social skills of CWA has proven to be effective, (3) and produced substantial changes and progress, as well as minor or insignificant advancement in broad age range. The change was not limited only to new and improved skills demonstrated by the client at school, but also to skills demonstrated at home; (4) the implementer of the VSM intervention experienced concerns involved in the time-consuming recording and editing stages of the videos and the cost it incurred for the equipment; the findings of the research were utilized in developing a users' guide on the use VSM response to the need for an up to date and advanced intervention to enhance the social skills of CWA.

Based from the findings and conclusions of the study, the following are recommended: (a) additional interventions and activities supporting VSM like Pictorial Self-management or Social Stories addressing the CWA social skill impairments must be included on their Individualized Education Plan and other programs in the school since unmodified social skill impairments of CWA may impose a greater risk for their holistic development; (b) implementation and development of VSM are recommended  for teaching desirable social skills since VSM is a result-oriented intervention in both home and school settings; (c) integration of supplementary interventions to yield more substantial changes along with the use of VSM; improvement of time-efficient and cost-efficient procedures to record, edit, and view the VSM videos must be developed to lessen the difficulties in

implementing the VSM; (d) and the conduct parallel studies on the use of VSM intervention in teaching self-help skills, fine motor skills or gross motor skills to CWA to assess the effectivity of the intervention in other impaired learning areas of the CWA.

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**Contact email:** markryan.romero@deped.gov.ph