

THE EFFECTS OF VIDEO SELF MODELING ON SOCIAL SKILLS WITH HIGH SCHOOL STUDENTS WITH AUTISM

A Thesis by

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The following faculty members have examined the final copy of this thesis for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Education with a major in Special Education.

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DEDICATION

To my mom, my grandmother, my husband,
My children and my dear friends

ACKNOWLEDGMENTS

Five years ago, I was blessed to begin working with students who were diagnosed on the autism spectrum. My learning curve was great, but my desire to help my students was even greater. I soon learned a so many things that would help me become a better teacher, yet I saw that I did not have a good way to teach or reinforce the social skills that my students struggled with. While sitting in training one day listening to how video modeling was used to provide reinforcement for people with a disorganized mind, I began to wonder if this would be a technique that would be beneficial to my students. I began reading about video modeling and while I found very little research, but what I found was promising. Now, five years later, with the help of my thesis committee I can say, yes video modeling is a successful way to teach my students social skills. The process of reading and evaluating literature, putting an intervention in place and seeing successful results has made me a better teacher. It has made me a teacher who is willing to try new practices to help her students.

Thank you to the three women who served on my committee. A sincere thank you for all of the time that you spend working with me, guiding me and providing me your expertise. My mom and step-dad, who encouraged my questioning nature and listened to my stories about my students and how much I wanted to help them. My children, you are such an important part of my classroom and help me teach in so many ways. As I was writing I know you gave up so much attention so that I could focus on reading, creating and writing. You have helped me learn and I hope I have given you the understanding that something worth having may be difficult to earn. My new husband, it has been so much fun to teach you about my students and to see you enjoy being at Friendship Club events. While you came into my life a few years in to the learning process, your support has meant the world to me. Your desire to help my students be

their very best means the world to me. Thank you to my co-teachers. Thank you for doing more than your part as I worked to meet dead-lines and thank you for being great listeners when I was struggling to see how I would do it all.

Finally, thank you to the students and families I've worked with and grown with. Your trust in me and my ability to teach your students gives me such a sense of pride. You have each touched my life.

ABSTRACT

Students with autism spectrum disorder face many hardships and struggles in life. Video self-modeling appears to be one educational tool that will help to provide the necessary tools for students to be successful, decreases the potential for the student to be victimized by bullies, and increase the quality of life students will have. This study evaluates the use of video self-modeling with a high school freshman who is on the autism spectrum. Video self-modeling was used to decrease the maladaptive behavior of biting himself. The ABA research design allowed for a two week intervention where the student watched a video of himself demonstrating a replacement behavior instead of biting his arm. The study found a statistically significant difference in the incidents of biting in baseline one and baseline two.

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Chapter One

Introduction

Autism is a significant and complex disability. The effect that autism or Asperger Syndrome has on a person's life is dependent upon the severity of the autism and the symptoms the person has (Badesch, n.d; Charlop-Christy, Le, & Freeman, 2000; Weis & Harris, 2001). Autism is typically diagnosed before the age of three, because of the profound communication delays (Social stories, n.d. para. 1; Solomon, Goodlin-Jones, & Andres, 2004). Asperger Syndrome may be diagnosed after the age of three (NINDS Autism Information Page, 2011) because children with Asperger Syndrome may begin to speak at the developmentally appropriate age (Asperger's syndrome, 2010). As children begin to have longer conversations they tend to watch the listener to ensure that they are engaged, while children with Aspergers may have long winded conversations about a single topic without noticing if the listener is engaged (Solomon, et al, 2004)

Symptoms of Autism include profound communication deficits which may include significantly delayed speech, difficulty reading non-verbal communication clues and facial expressions, use of repetitive speech and struggle to make eye contact (Bellini & Akullian, 2007; Mechling & Gustafon, 2008; Shukla-Mehta, Weiss & Harris, 2001). Other symptoms are repetitive motor movements (flapping), sensory integration difficulties, struggle to regulate the sensory input and people may have unusual reactions to sensory input, not showing affection, and having little interest in their peers when they are younger. People with autism may also have a lower than normal IQ (Autism, 2010). However, individuals with Asperger Syndrome have a normal to above normal IQ, they still struggle with many of the same symptoms. People with

Asperger Syndrome tend to have particular speech patterns that make them stand out from their peers. They also struggle with reading non-verbal cues in conversations. They also may use repetitive behaviors or routines that can become obsessions (Autism, 2010; Solomon, et al., 2004).

Students with Autism Spectrum Disorder (ASD) as well as other disabilities often have social skills that are significantly below those of their neurotypical peers; peers who have had typical neurological development. Social skills are the subset of skills targeted in Social Skills Training (SST) such as maintaining eye contact during a conversation, taking turns in conversations, reading nonverbal cues, and maintaining appropriate social distances (Bellini & Akullian, 2007; Maag, 2006; Mechling & Gustafon, 2008; Shukla-Mehta, Miller & Callahan, 2011; Weiss & Harris, 2001). Due to having social skills deficits, students with ASD and other disabilities are often isolated and have an increased risk of being bullied (Caravita, Blasio, & Salmivalli, 2010; Humphrey & Symes 2010; Lee 2011; Scholte, & Bidden 2010; Symes & Humphrey 2010; Van Roekel). Solomon, Buaminger, and Roger (2010) stated that the social skill deficits that many people have with ASD might be the most debilitating symptom of autism.

Friendship and social interaction is critical for healthy human development. It is within our social connections we find the context for moral and emotional growth (Solomon, et al., 2010). Students with ASD tend to not engage in typical age appropriate activities because they do not know what to expect in such situations (Kokina & Kern, 2010). The inability to understand social situations is one of the major factors of the disability. A lack of involvement in the social aspect of school can lead to an inability to form friendships. Lack of friendships can lead to depression, poor school adjustment, and anxiety problems (Kokina & Kern, 2010; Solomon, et al., 2011; White, Koenig & Scahill, 2010). As students recognize they are not

fitting in with their peers, this isolation increases (White, et al., 2010). The need to learn and apply social skills is not only important for students while they are in school, but is also critical for life after their formal education career. An increase in social skills improves that person's ability to contribute to society (Koeyel & Frea, 1993; Womack, Marchant, & Borders, 2011). There are many Social Skills Training (SST) programs that use pull-out methods to teach social skills. Students learn and practice social skills in a special education classroom. However, the newly learned social skills are often not generalized from the special education classroom to real-world settings (Womack, et al., 2011). One of the problems with SST programs is that the intensity and amount of practice is not enough to allow for generalization. Maag (2006) stated that the SST programs should run six to nine months and include at least 60 hours of practice time.

Visual instruction

Visual instruction and information is very important for students with ASD, as many students with ASD are visual learners (Crozier & Tincani, 2005; Kokina & Kern, 2010; Schneider & Goldstein, 2010). Social stories were originally developed by Carol Gray (1991). Carol Gray was a teacher of students with ASD for 22 years (Social stories, Carol Gray, n.d. para. 1). She then became a consultant and opened The Gray Center of Social Learning and Understanding to work more exclusively with people with Autism.

Social stories are specific individualized short stories that provide instruction to a student and are considered in the literature to work well for students with ASD because they tend to have a strong visual memory (Schneider & Goldstein, 2010). Many social stories are written to provide instruction for social settings that commonly cause problems for students with ASD, as

discussed above (Crozier & Tincani, 2005; Kokina & Kern, 2010). These social stories give the student an insight into what may happen at an event, why someone reacts the way they do when the student says something, or specifics about expected behavior from the student.

Cue cards are also used with students to give the student a prescribed statement in a specific setting. Cue cards are shorter than social stories and are used to support the spoken words from adults and the teacher (Cihak & Schrader, 2008). The use of visual information is important because students with ASD are often described as being visual learners or visual thinkers. One drawback to social stories and cue cards is that the students using them must be able to read and comprehend what they are reading (Cihak & Schrader, 2008). Students also have to carry around a ring or notebook of stories and cards and be able to identify which story or card they need to use. This can cause students who already stand out, to stand out more.

Video Modeling

Video modeling (VM) is another technique that can be used to teach students with ASD. Video modeling is not a new teaching technique; Albert Bandura with his work introduced it in the 1960's and 70's (Bandura, 1969). His work encouraged the use of film to capture the student's behavior and actions. Bandura's Social Learning Theory focuses on the ability to use the video to provide instruction on salient features while a parallel instructional video was being played (Ayres & Lagone, 2008; Cihak & Schrader, 2008). Albert Bandura's work in the 1960's and 1970's led to the development of Social Learning Theory (Grusec, 1992). In his 1969 work, Bandura identified that individuals learn from models and in order to do so four components must be involved (Grusec, 1992; Ormond, 1999):

1. The observer must attend to the model and the events taking place.
2. The observer must retain information about the event or behavior that is modeled.

3. The observer must be able to replicate the event or behavior.
4. The observer must have some motivation to replicate the event or behavior.

Two types of video modeling are used to teach a variety of skills including play behaviors, daily living skills, adaptive social behaviors, and conversation skills to students with ASD (Charlop, et al., 2008; Cihak & Schrader, 2008). Video modeling (VM) uses a peer or adult as the model. The model is performing a specific targeted skill or behavior (Cihak & Schrader, 2008; Shukla-Mehta, et al., 2010). In video self modeling, (VSM) the student is the model. They watch a video of themselves in a successful skill or behavior. Bandura (1969) found that in order to learn from a model, the observer needed to feel a degree of similarity. Cihak and Schrader (2008) found that video may be successfully used as a guide after the students have learned a behavior, but to learn from a video the students must attend to the model. With VSM, students are more likely to attend to the model because they are watching themselves (Shukla-Mehta, et al., 2010). In both VM and VSM the student watches the video and then has the opportunity to perform the task or behavior. If an error is made while the student is completing the task or demonstrating the behavior, the video should be viewed again (Cihak & Schrader, 2008).

VSM has many potential benefits such as increasing the attention of the student as they will attend to seeing themselves on the screen. The video can be shot at a pace that is suitable for the student's learning, and the skills or behaviors can be broken down into sub-skills or behaviors to increase the student's abilities to copy the behavior they see. The researcher will have the ability to ensure that the behavior is one that the student can physically complete. Bandura (1969) stated that the ability to replicate the behavior is imitative to the individual learning the new behavior. He suggests building the new behavior on previously mastered elements or sub-skills to increase the individual's success with the new behavior (Bandura, 1969)

The use of video self modeling allows the students to access the information from an age appropriate device such as an iPod or iPad. Another advantage to using a video instruction method to deliver the information is that the student can be given information about the non-verbal aspects of a situation or conversation such as eye-contact and personal space (Charlop, et al., 2008).

Generalization

The generalization of skills learned in the classroom is one of the goals teachers have for all their students. Generalizing a skill allows students to apply the skill across a number of settings (Koegel & Frea, 1993). It is exceptionally difficult for most students with ASD to generalize new skills. Therefore, it becomes imperative that teachers ensure generalization is occurring when they are evaluating the effectiveness of a teaching method. Ayres and Langone (2008) stated there is little evidence of generalization to the community when skills are learned via “visual anchors”, (p. 3) such as social stories, cue cards and video modeling.

The struggles that students have with generalization prompts the question of how social skills can best be taught in order to be utilized in multiple settings. This study will seek to answer the question, how does the use of video self-modeling on a hand-held video device affect modification of a maladaptive behavior to that of an adaptive one?

The use of the iPod will allow students to take their “visual anchor” with them. Charlop, Gilmore, and Chang (2008) found that students with ASD needed multi-exemplar training to show an increase in generalization of skills. Taking the video with them will provide that needed training.

As students with ASD, need 60 hours of practice to generalize a new skill, the use of the video iPod allows students to view and practice the targeted behavior or skill multiple times a day increasing their practice time. With video self-modeling, students can have hand held video devices, such as an iPod, to watch as they successfully demonstrate social skills in a variety of settings. As many of the student's neurotypical peers walk the school halls with earphone attached, the use of an iPod provides an age appropriate method to provide social skill instruction. It allows students with social skill deficits to "fit in" better with their peers.

Bullying

Many students with ASD understand how hard it can be to fit in with their peers (White, et al., 2010). Studies show that students with ASD are more likely to be bullied than their peers who have various special education needs (Symes & Humphrey 2010; van Roekel, Scholte, & Didden, 2010). Much research has shown the bullying rates for students with ASD are at least three times higher (Humphrey & Symes 2010) and in some schools increases to 75%-90% of students with ASD reporting that they have been a victim of bullying (van Roekel, Scholte, & Didden, 2010). "Bullying is aggressive behavior that is intended to harm, usually takes place repeatedly, and involves an imbalance of power" (Rinaldo, 2011).

Researchers have defined bullying as the systematic abuse of power of a person or a group of people whose intent is to hurt the victim by causing emotional or physical harm (Caravita, et al., 2009; Humphrey & Symes, 2010; Symes & Humphrey, 2010; van Roekel, et al., 2010). This behavior is typically repeated and exhibited over an extended period of time (Humphrey & Symes, 2010; Symes & Humphrey, 2010; van Roekel, et al., 2010). One of the causes of the significant increase in bullying rates may be the "odd" behaviors such as rocking,

pacing, jumping, flapping the hands at or very close to the face, biting or pinching themselves, verbal stimulation (stimming) such as humming, talking in a voice that is different from the students normal voice, that students with ASD may display (Humphrey & Symes, 2010). These behaviors occur because students with ASD often struggle with sensory overload that can happen in the ever-hectic general education high school (Humphrey & Symes, 2010; Symes & Humphrey, 2010).

When researchers have evaluated what students with ASD need to know to allow them to better understand the movement and community of school, they find that students often lack knowledge of the “*Hidden Curriculum*” that exists in schools (Kokina & Kern, 2010; Lee, 2011). The hidden curriculum is the social expectations not directly taught in the classroom, which includes the behaviors and background knowledge that are expected by peers and teachers for a student to be successful both socially and academically. The reason that students may not be able to explain the problem is that they do not understand the hidden curriculum, that is, the unwritten and untaught rules and expectations (Lee, 2011). Hidden curriculum includes understanding teacher expectations, teacher pleasing behavior, the ability to identify who would make a good friend, and the difference between the behaviors that will get positive attention versus those that will get negative attention (Lee, 2011).

To lower the rate of bullying, researchers posit that a student with ASD should increase their social supports and build a friend-network that would defend them (Caravita, et al., 2009; Humphrey & Symes, 2010; Symes & Humphrey, 2010). There are many buddy programs such as Circle of Friends and Best Buddies, used nationwide to assist in building a friend-network. Such buddy programs are seen to benefit both the neurotypical peer and the student with ASD (Gus, 2000; Lee, 2011)

The use of VSM and hand-held video devices, such as an iPod, provides students with ASD a way to review specific social skills. If students with ASD are better equipped to understand the hidden curriculum in schools and community settings and are able to access a social network for support, they will be able to learn how to make and keep working relationships and friendships.

Purpose of the study

A review of research indicated that video self-modeling is a successful method to use when generalizing skills and adaptive behaviors with students who has ASD. VSM can be used in an age appropriate manner that provides a high number of practice hours. VSM provides a model that students will attend to thus increasing the potential learning experience. However the question has been raised about the effectiveness of VSM alone as an intervention. Many of the studies that use VSM also use teacher prompts and praise that may also increase skills and adaptive behaviors. This study will evaluate how the use of video self-modeling on a hand-held video device affect modification of a maladaptive behavior to that of an adaptive one.

Chapter Two

Literature Review

Autism is a disability that affects every aspect of life (Koegel & Frea, 1993), and it is important that the whole student must be instructed to help him or her learn. The Diagnostic and Statistical Manual of Mental Disorder (DSM, 2010) provides criteria for the diagnosis of autism. Within that criteria are three domains: An individual with autism will have impairments in reciprocal social interactions, communication, and repetitive restrictive interests and behaviors (Toth, 2011). Impairments in each one of these domains means that an individual with autism will have significant difficulties interacting with others (<http://www.thewatsoninstitute.org/>) Students with ASD should be taught social skills, conversational skills, how to read non-verbal cues, stress and sensory management as well as core academics.

Because social skill deficits are a defining characteristic of autism, holistic instruction in social skills methods that is both evidence based and promotes high levels of generalization must be used when teaching students with ASD. Many students with ASD need up to 60 hours of practice to generalize social skills (Maag, 2006); therefore, it is imperative that their school time be used wisely. In this paper, a review of literature will look at the need to increase social skills and how that can decrease the emotional trauma of bullying that happens to many students with ASD. It will also discuss the methods of video modeling (VM) and video self-modeling (VSM) that can be used to teach social skills and other behaviors.

Students with Autism Spectrum Disorder

Autism spectrum disorders (ASD), that includes Autism, Asperger Syndrome, and Pervasive Development Delay not otherwise specified (PDD-NOS), represent complex neurological disorders that are characterized by difficulties in communication, learning social skills, sensory integration, and self regulation (Bellini & Akullian, 2007; Humphrey & Symes, 2010; Koegel, Koegel, Hurley & Frea, 1992;; Maag, 2006; Mechling & Gustafon, 2008; Shukla-Mehta, Miller & Callahan, 2011; Weiss & Harris, 2001). Students who have ASD typically have a concentrated area of activities and interests, meaning that they have limited topics that they can converse about and they tend to bring most conversations back to preferred topics. The limited conversation topics can further lead to struggles with communication as they may struggle to carry on a conversation with their peers. These concentrated interests can also lead students with ASD to have the same conversation multiple times.

These challenging behaviors can lead to students with ASD facing problems in school settings where they may be placed in general education classes all or part of the school day, often referred to as inclusion. The definition of inclusion has evolved in recent years so that it does not simply address the academic setting, but it means that students with special learning needs are able to actively participate in all school activities (Humphrey & Symes, 2010). Full inclusion for students with ASD may be difficult because they tend to prefer routine, predictability, and having low sensory stimulation (Symes & Humphrey, 2010), each of which is difficult to obtain in a general education setting. As many students with ASD go through their school day, they are faced with a lack of understanding social stimuli, are unable to read social cues, and struggle with how to respond to bullying (Kokina & Kern, 2010; Weis & Harris, 2001). The inability to make use of the hidden curriculum in schools can make the social world a scary

and unpredictable place (Lee, 2011) and leads to students with ASD engaging in fewer social interactions, and thus spending an increased amount of time alone (Nikopoulos & Keenan, 2004; Shukla-Mehta, et al., 2010). This in turn causes teachers to think about educating students with ASD in a different manner. Mechling and Gustafson (2008) found that many teachers working with students with ASD do not have a firm understanding of how best to teach, as no single method is effective for all students with ASD (Crozer & Tincai, 2005).

Bullying and Student with Autism Spectrum Disorders

Bullying has become a common occurrence in many schools across America. Bullying is a serious offense because it can have severe and lasting emotional problems for both the victim and the bully (van Roekel, et al., 2010). “Bullying is aggressive behavior that is intended to harm, usually takes place repeatedly, and involves an imbalance of power” (Rinaldo, 2011).

Researchers have defined bullying as the systematic abuse of power of a person or a group of people whose intent is to hurt the victim by causing emotional or physical harm (Caravita, et al., 2009; Humphrey and Symes, 2010; Van Roekel, et al., 2010; Symes & Humphrey, 2010). This behavior is typically repeated and exhibited over an extended period of time (Humphrey & Symes, 2010; Van Roekel, et al., 2010; Symes & Humphrey, 2010). Van Roekel, Scholte, and Didden (2010) stated that bullying has two identifiable parts. The first part of bullying is that the action is perceived as aggressive in nature. The second part of bullying is that this action is directed at a person who is seen as weaker in an imbalance of power.

National bullying statistics indicate the number of students victimized falls between 20%-30% of 6th through 12th graders. Researchers have found that students with special learning needs

are bullied at a higher rate than their neurotypical peers (van Roekel, et al., 2010). The students with the highest rates of being bullied are those with ASD (Symes & Humphrey, 2010).

Researchers have found that the reports of bullying are at least three times higher than their neurotypical peers (Humphrey & Symes, 2010) and that in some settings as many as 94% of the students with ASD have made reports of bullying (van Roekel, et al., 2010).

These data bring researchers to ask why students with ASD are bullied at such high rates. Many students with ASD are bullied more frequently because their lower social competency leads to them having fewer friends (Humphrey & Symes, 2010). Researchers have found that when students who have special learning needs have a social network, such as a Circle of Friends or Best Buddies, because the buddies can act as a buffer to bullies (Lee, 2011). One reason students with ASD have a lower social competency is because they have a decrease in Theory of Mind.

Theory of Mind (ToM) is a person's ability to interpret others thoughts, beliefs, intentions, and expectations and react to them appropriately. Hilary Putnam proposed Computational Theory of Mind in 1961 (Horst, 2009) which led to Jerry Fodor developing the "representational theory of mind" (Perner, 1999). Combining the inability to read emotions with the decrease in ToM, means that students with ASD will not be able to identify why a person has reacted a specific way in a social setting. People with ASD may also display inappropriate behaviors such as laughing at an inappropriate time, not responding to a question in a timely manner, and an inability to display compassion, because they are unable to predict the response a person may have. A decrease in ToM and a history of victimization may also lead students with ASD to miss read social cues further alienating their peers.

A low social competency means that students with ASD do not understand how to use the few social supports that are available to them because they may be unable to explain the problem (Humphrey & Symes, 2010). This inability to understand the hidden curriculum can also cause a negative impact on the daily lives of students with ASD (Lee, 2010). Caravita, Blasio, and Salmivalli (2009) found that there is a relationship between bullying and a higher ToM as well as a relationship between having a lower ToM and being a victim of a bully. Students with higher ToM are able to understand the hidden curriculum in a variety of settings including the classroom, hallway, cafeteria, and restroom (Caravita, et al., 2009; Lee, 2010). This gives the bully the ability to identify when their victims are most vulnerable and is why it is imperative that students with ASD be taught social skills and the hidden curriculum so that they may have success in school as well as later in life (Humphrey and Symes, 2010; Lee, 2011).

Social skills

Social skills and the hidden curriculum have to be taught to students with ASD because many are not able to learn them in the typical method, that is, they do not learn them by observation (van Roekel, et al., 2010). Because schools do not directly teach students with ASD social skills and the hidden curriculum, many of them continue to have little insight to social processes and limited social networks (Symes & Humphrey, 2010; van Roekel, et al., 2010). These students are then often excluded from activities, are at a higher risk of being bullied, show increased isolation and decreased sociometric status, which refers to other's acceptance of a person, or an individual's popularity (Caravita, et al., 2009; Kokina & Kern, 2010; Symes & Humphrey, 2010). Bullying leads to a general distrust of people (Humphrey & Symes, 2010). The cycle then continues because students with ASD learn to not trust their peers because they are unable to predict how the peers are going to respond, and seek more isolation as a way to

protect themselves from bullies (Caravita, et al., 2009; Humphrey & Symes, 2010; Symes & Humphrey, 2010; Lee, 2011; Van Roekel, et al., 2010).

A proactive response to bullying is necessary to increase a student's understanding that social supports are actually available (Kokina & Kern, 2010). Teachers are often the first person to whom a student with ASD turns when they are bullied (Humphrey & Symes, 2010).

However, support from classmates and friends are identified as the most effective way to battle the negative impact of bullying (Pumley, 2009; Symes & Humphrey, 2010; Lee, 2011; van Roekel, et al., 2010; Wainscot, Naylor, Sutcliffe, et al., 2008). Providing this protective unit of friends can be difficult to accomplish due to the nature of ASD. Humphrey and Symes (2010) found that promoting acceptance and understanding among neurotypical peers is a significant challenge. Although it is a challenge for schools to put a Circle of Friends or Best Buddies type of program into place, it is important. When schools promote social skills training and programs students with ASD reported that having friends at school helps them to feel safe and secure (Gus 2000). Providing education about ASD is a key part of increasing the number of students who will reach out to become friends (Humphrey & Symes, 2010). A Circle of Friends (Gus, 2000) program assists students with disabilities through providing positive experiences with their neurotypical peers. This program allows friendships to develop and gives the student with ASD a social unit that can act as a barrier to bullies. Having a Circle of Friends is also a way to promote positive interaction between students with ASD and their neurotypical peers (Lee, 2011).

Struggles with Generalization

One specific struggle encountered with teaching students with ASD social skills and the hidden curriculum (Lee, 2011) is that these skills are often difficult to generalize (Schneider & Goldstein, 2010; Shukla-Mehta, et al., 2010; Weiss & Harris, 2001). Generalizability refers to a student's ability to transfer an adaptive behavior taught in a special education classroom across multiple settings and with multiple people and also to translate these skill into building blocks for new skills (Bandura, 1969; Bellini & Akullian, 2007). There is a need to improve the generalization of the social skills taught in isolation and there is little research to provide effective methods of doing so with adolescents. Many articles can be found that evaluate improving social skills involved in play with young children with ASD (Charlop-Christy, et al., 2000; Weiss & Harris, 2001; Nikopoulos & Keenan, 2004; Charlop, et al., 2008; Shukla-Mehta, et al., 2011; Bellini & Akullian, 2007), but it is difficult to find research that evaluates ways to increase generalization among adolescents. Information about strategies that are effective to teach social skills to older children, adolescents, and adults with ASD social skills are limited (Weiss & Harris, 2001). Teachers of students with ASD need to work toward the generalization of the social skills learned so that the skill becomes ingrained in the student's social repertee (Weiss & Harris, 2011).

With a 300% increase in the number of children being diagnosed on the autism spectrum (Toth, 2011), research based, effective strategies to increase social skills are imperative. Without appropriate social skills an individual with autism will have lifelong struggles. Generalization of social skills is crucial for students with ASD. Social skills can be taught and mastered in the special education classroom. If these social skills are not generalized, students remain at risk of being bullied and will struggle in vocational settings as adults.

Video Self Modeling

One such way to have social skills become generalized is to use technology and videos to teach and reinforce the skill (Ayres & Langone, 2008; Mikropoulos & Natsis, 2011).

Technology has long been used in the classroom to reinforce learned information and skills.

Technology is now being seen as a way to teach students with a variety of disabilities including students with ASD because it can help to increase their class participation (Schweder & Wissick, 2009). The use of technology also can to improve the quality of life for people with ASD.

When people with a disability are taught to use technology, they are provided with more opportunities and accommodations (Wehmeyer, et al., 2008). Therefore, technology is a way for teachers to bridge the gap between students with disabilities and their neurotypical peers (Schweder & Wissick, 2009).

When technology is used to teach or reinforce social skills, it is important that it is done in an age appropriate manner and that it is not disruptive to the class (Weiss & Harris, 2001).

When teachers employ methods that are not age appropriate, the student again is at risk to be bullied. Some strategies used to teach social skills can make students with ASD seem more different. For example, the use of a hula-hoop to teach personal space although workable in the classroom is difficult to take out of the classroom and doing so makes the student working on this important social skill appear unapproachable to peers who do not understand the lesson.

Teaching social skills in an age appropriate manner can be done with video self modeling (VSM) and video modeling (VM) through the use of a hand held video device.

Video modeling is rooted in Bandura's work on modeling (Bandura, 1969). Bandura believed that people learn by observing the behavior of others (modeling) and that this can and

should be used to teach students. He also believed that students should be filmed and then watch them-selves on a film strip showing appropriate behaviors (Ayres & Langone, 2008; Cihak & Schrader, 2008; Shukla-Mehta, et al., 2010). There are three types of video modeling. The person demonstrating the skill can be an adult or a peer, video modeling (VM). The model can be the student, who is video self-modeling (VSM). With point of view modeling (PVM), the video is shot from the student's point of view (Shukla-Mehta, et al., 2010).

While the literature on teaching social skills to adolescents and young adults has not been as extensive and varied as the literature involving younger children, video modeling is one area that is providing more research with the adolescence population. The use of video modeling and video self modeling is increasing in popularity because researchers are finding it an effective practice to teach a variety of skills in context (Lee, 2011; Mechling & Gustafson, 2008; Shukla-Mehta, et al., 2010). Shukla-Mehta, Miller, and Callahan (2010) have conducted a review of current research of case studies that use VM and VSM as a part of the intervention. They state that the number of case studies with significant findings indicate that VM and VSM can be qualified as evidence based practice. Researchers also state that after creating the video, evaluating the effectiveness can be easy for teachers because a simple check list can be created for the teacher to use (Bellini & Akullian, 2007; Shukla-Mehta, et al., 2010). This check list should detail when and where the video was shown as well as document any events that caused the video to not be shown as scheduled or needed.

Bandura (1969) stated that modeling could be used to build upon mastered skills. VM and VSM have been used to teach and reinforce a multitude of skills across settings and with many populations (Bellini & Akullian, 2007; Ayres & Langone, 2008). VM has been used to teach or reinforce academic skills that students have learned as well as daily living skills,

communication skills, and social skills (Charlop, et al., 2008; Mechling & Gustafson, 2008) The use of video allows the students to see the skill they are working on in a real-life setting. This taps into their background knowledge and may increase the retention rate as well as promote generalization (Ayres & Langone, 2008; Mechling & Gustafson, 2008). Cihak and Schrader (2008) used VM and VSM to teach daily living skills to help clients to purchase and prep meals. Other researchers have learned that VM and VSM can be successful in decreasing maladaptive behaviors including aggression and tantrums while increasing adaptive behavior, self-monitoring skills, and emotional regulation (Bellini & Akullian, 2007; Charlop, et al., 2008; Mechling & Gustafson, 2008). The use of VM and VSM may be successful because the video can repeatedly provide reinforcement of the behavior or skill while a teacher may be interrupted and cannot always provide repetition of instruction (Mechling & Gustafson, 2008).

VSM and VM are both effective interventions when used with students with ASD characteristics. They are effective within a short time frame when compared to other interventions, one researcher found that they are effective after nine to ten sessions (Bellini & Akullian, 2007; Mechling & Gustafson, 2008) and many researchers found that the skills learned are maintained for months after the intervention is stopped (Nikopoulos & Keenan, 2004; Charlop-Christy, et al., 2000). When VM and Vivo modeling (modeling involving a live model) were compared, students generalized the skills that were presented via VM but did not generalize the skills presented via Vivo modeling (Charlop-Christy, et al., 2000). Also the VM had fewer presentations to reach that generalization. Charlop, Gilmore, and Chang (2008) cited the 2011 study done by Sheerer and colleagues where VM was used to teach students to ask follow up questions in conversations. Three of the five participants generalized the specific questions and answers. They also discussed the 2008 study by Charlop where students learned to generalize the

conversational skills across conditions and into untrained conversation. In the Mechling and Gustafson study (2008), all six of the student participants made significant gains in the number of tasks completed and one student was able to reach 100% accuracy. This mastery and generalization of skills is imperative for students with ASD as it provides the students with a higher quality of life because it increases their opportunities.

Researchers have found that the most effective model is one that is close to the student as the student is more likely to attend to the model (Bandura, 1969; Bellini & Akullian, 2007; Cihak & Schrader, 2008; Mechling & Gustafson, 2008). VSM may be the most effective type of modeling because it allows students to see themselves be successful demonstrating a skill or behavior. This provides self-efficacy or the belief that he or she can be successful (Bellini & Akullian, 2007; Cihak & Schrader, 2008; Mechling & Gustafson, 2008). Another benefit of using VSM is that the video can be shot to include preferred items or topics (Mechling & Gustafson, 2008). This can be a powerful way to grab the attention of a student with ASD.

Students with ASD typically have strong visual learning styles and the use of VSM supports this learning style (Mechling & Gustafson, 2008; Shukla-Mehta, et al., 2010). It may also be an effective method to teach and reinforce many skills because it removes the need for social interactions that can increase the student's anxiety and decrease the mindset needed to learn (Bellini & Akullian, 2007; Mechling & Gustafson, 2008). VSM is found to be most effective when it is used with a student who enjoys watching themselves (Bellini & Akullian, 2007). The use of VSM with students with ASD increases their ability to generalize skills to new settings and with a variety of people, and improves the maintenance of these skills (Ayres & Langone, 2008; Charlop-Christy, et al., 2000; Cihak & Schrader, 2008). This can be done without the students having to work through a fading process and in an age appropriate manner

that is not disruptive (Charlop-Christy, et al., 2000; Weiss & Harris, 2001). It may be the ability to have repeated instruction and the fact that the videos are dynamic and set in the student's own environment that make VSM successful (Charlop-Christy, et al., 2000; Mechling & Gustafson, 2008), but it has become evident that the use of observation is a necessity to generalizing skills and behaviors learned in isolated settings (Charlop, et al., 2008).

Before using VSM with students, researchers will need to identify the students ability to attend to a video for at least one minute (Shukla-Mehta, et al., 2010) as well as the students ability to mimic a behavior as that is what they will be doing at the beginning of the intervention (Shukla-Mehta, et al., 2010;). VSM has two main components. The student watches him/herself successfully display the skill or behavior and immediately has the opportunity to practice the skill or behavior (Bellini & Akullian, 2007; Cihak & Schrader, 2008; Shukla-Mehta, et al., 2010). When this is done, the student's behavior or mastery of the skill tends to begin to change (Shukla-Mehta, et al., 2010). The behavior or skill used in the VSM video should be a targeted task or behavior that is chosen for the specific needs of the student who is viewing it (Charlop-Christy, et al., 2000; Shukla-Mehta, et al., 2010). The behavior or skill should be an exemplary model of this targeted skill or behavior (Shukla-Mehta, et al., 2010). There are discussions about the most effective method to produce a video for VSM use. The video should be between three and five minutes long (Bellini & Akullian, 2007; Shukla-Mehta, et al., 2010), and shot at a close angle to remove distracters or edited to remove them (Bellini & Akullian, 2007; Shukla-Mehta, et al., 2010). These distracters may include the teacher prompts. Removal of the teacher prompts provides the student with a video where the skill or behavior seems spontaneous and may enforce the self-efficacy effect of the video (Bellini & Akullian, 2007; Shukla-Mehta, et al., 2010). However, researchers have also used videos with teacher prompts included to reinforce

the action seen. The video can be played on a computer, DVD player, or downloaded to a hand held video device (Ayres & Langone, 2008; Mechling & Gustafson, 2008; Schweder & Wissick, 2009; Wehmeyer, et al., 2008).

Benefits and Obstacles

Although VSM is promising, there are also some concerns. The videos that are commercially produced may not be effective for many students with ASD because they are not able to attend to the model, the rate of presentation may be too fast for them to learn the skill or behavior and the language used in the video may be too advanced for the student to understand (Mechling & Gustafson, 2008). There are few videos that target an entire behavioral chain (Charlop, et al., 2008), that is, evaluating each step that a student will need to be able to complete in order to master a new skill. Breaking the adaptive skill or behavior into sub skills or behaviors has been found to increase the “rote” response, that is the response will be automatic and the student will not have to think through the sub-skills or behaviors to display the appropriate one (Ayres and Langone, 2008; Mechling, et al., 2008). Making the adaptive behavior a “rote” response is one of the challenges of generalization because it requires a high level of practice and often the use of a “visual anchor.” (Ayres & Langone, 2008; Charlop, et al., 2008). A visual anchor is a visual reminder or schedule and is often carried by students with ASD.

It has also been found that there are few studies where the VM or VSM is the only intervention. It is often used with praise, rewards for displaying the adaptive behavior, or correctly completing the skill, teacher prompts, and error correction (Bellini & Akullian, 2007; Shukla-Mehta, et al., 2010). In a meta-analysis Horner et al. (2005) found that only 4 of 23

studies used VM or VSM as the only intervention (Shukla-Mehta, et al., 2010). In a meta-analysis by Bellini and Akullian (2007) seven of the 23 studies used VM or VSM alone (page 284). Other studies used additional prompts or a reinforcer along with VM or VSM. This signifies the need to complete studies where VM and VSM are the only interventions.

Conclusion

Generalization of social skills is imperative for individual with autism finding success in academic and daily life. Teachers should use research based methods to teach social skills and find age appropriate ways to provide ample practice time. VSM is one method to do this and should be used in teaching students with ASD social skills as it is an intervention that can go with the student. However there is need to evaluate the use of VSM alone as it is often paired with other interventions such as praise or tangible rewards. This study will look at the use of VSM alone in modifying a maladaptive behavior and will answer the research question; This study will evaluate how the use of video self-modeling on a hand-held video device affect modification of a maladaptive behavior to that of an adaptive one.

The researcher will work to answer three questions. First, did the biting incidents (maladaptive behavior) decrease between baseline one and baseline two? The researcher hypothesizes that the biting will decrease during baseline two. Second, did the biting incidents per hour decrease due to an interaction between the intervention and behavior during structured versus unstructured time? The researcher hypothesizes that the biting incidents during the structured time will decrease slightly while the biting incidents during the unstructured time will show a prominent decrease. Third, did the use of the backpack remain constant or increase

between the intervention and baseline two? The researcher hypothesizes that the use of the backpack will increase between the intervention and baseline two.

Chapter Three

Research Methodology

This chapter provides information about the methodology used to achieve the purpose of the study. It includes the design of the research, procedures for determining the population and instruments used in the study and the Instructional Review Board. This chapter also includes all teacher-made data collection materials, establishment of validity, and reliability.

The review of literature has led to the researcher's question: how does the use of video self-modeling on a hand-held video device affect modification of a maladaptive behavior to that of an adaptive one?

Research Design

The researcher used a case study approach using a multi-baseline approach. A case study is an intervention based method of study that allows the researcher to investigate an intervention in a specific situation (Wiersma, 1995 p.17; Shuttlesworth, 2008). Case studies can be useful to determine whether theories can work in real life. Case studies can be included in reviews when researchers are looking at methods to teach social skills and have been used to identify specific methods as evidence based practices (Wiersma, 1995 p. 152). To ensure that a case study is valid, a multiple base-line approach should be used, and the intervention should be operationally defined. The context of the study should be defined as well (McNamara, n.d.).

Instructional Review Board (IRB)

According to federal regulation and Wichita State University, policy requires a proper review and approval of all research studies that involve human subjects in order for the researcher to conduct his/her study. This review was required by Wichita State University as to protect the rights of those participants in the study. In compliance with the above-mentioned policy, this study received the proper review and was granted permission to continue. (Appendix A)

Validity

According to Wiersma (1995), the validity of a single subject case study is increased by using a multiple baseline research design. The researcher used an ABA research design. Each section of the research was for the same length of time and the data collection materials collected the frequency and location of the maladaptive behavior. The researcher also changed only the single variable addressed in the intervention, the use of the backpack and fidgets as a replacement behavior. All other parts of the student's school day remained the same for the duration of the research. If the pattern shown during each cycle of the research was consistent, the conclusion made about the intervention may be made with confidence in its validity.

To ensure that the research project has reliability the researcher used the same survey to collect information from parents and other staff at the beginning and end of the intervention. The behavior was objectively described at the top of the data collection pages and all data collection pages collected information of the frequency and location of the behavior. The data taken also included any changes to the student's school day such as substitute teachers, interruptions to the school day (fire drills), and changes to the student's schedule.

Setting

The study took place in a general education high school where the student receives special education services. The data was collected within multiple settings. The main setting was in the Functional Applied Academics classroom, a pullout classroom with a special education teacher. This classroom is where the students work on all Individual Education Plan (IEP) goals including social skills goals. Other data collection places were dependent on the student's schedule. The data was collected in general education classrooms where the student is a member. These classrooms provide the student with a natural setting to practice the replacement behavior.

Population and Participant

The researcher utilized a purposive sample to identify a population that met the criteria from the DSM-5. Autism spectrum disorder must meet three criteria: there are persistent deficits in social communication and interactions, the student may display maladaptive behaviors in the sharing of interests, eye contact, inability to read body language, and an inability to adjust behavior to a variety of social settings; the individual displays repetitive behaviors and has limited interests and activities, the student may use echolalia or repetitive speech, display an inflexibility in routine both verbal and behavioral, may fixate on specific topics or objects, and may have unusual sensory reactions; the individual may have developed the symptoms in early childhood; symptoms will cause complications in daily living

The possible pool of participants was 36 students in the functional behavior class program in the 2011-2012 school year. Of those 36 students, three students had ASD and five students had autistic tendencies. The researcher began observations of students in the functional

classroom in order to identify maladaptive behaviors that resulted in the student being isolated from his/her peers and had increased the potential of the student being at risk for bullying. The researcher was able to identify three students who displayed such behaviors. Two of the students were not considered because the frequency of the behavior was sporadic and may not happen for a week or more.

The researcher held a telephone interview with the parent of the third student to discuss possible participation. The telephone interview resulted in identifying the student as the participant in the study and wrist biting as the maladaptive behavior. During the telephone interview the pre-survey (Appendix B) was completed. Letter of Consent (Appendix C) was sent home with the student and returned signed by the father of the student.

It appeared that the student would bite his wrist when he was over-stimulated and/or as a result of self-stimulation that has lasted too long. The parent stated that the student has been wrist biting on his arm for years and has a permanent bruise on his forearm as a result of the biting. Parent spoke of the student using spoons in the car to keep his hands busy and to keep him from biting his arm, but the parent did not allow the student to bring spoons into community settings as the student was loud with them. The spoons provided the student with a fidget in the car and thus decreased the biting the student did.

Biting provides the student with a deep sensory input as well as having something to do with his hands. The biting causes marked isolation of the student as his peers were observed to move away from his desk, stepped out of his path, would move from his lunch table and to observe him with questioning looks when he was biting.

The researcher designed the video self-modeling to teach the student how carry a backpack with a weight for need for deep pressure and variety of fidgets, which would be appropriate in community settings to decrease the self-biting. A storyboard (Appendix D) was designed to follow when shooting the video. The video was shot in one day and downloaded, edited and saved to an iPod.

Selection of behavior

After the participant was identified, parents and staff working with the student gave a teacher-made pre-intervention survey. This survey was designed to identify maladaptive behaviors that impede in the student's daily life. A maladaptive behavior is one that impedes the students' ability to adapt to a situation and it also causes isolation of the student and causes the student to be non-productive. The behavior selected was one that shows in multiple settings including educational, daily living (lunch room, hallway, home), and vocation location (community). The behavior was selected and objectively described for the study (Appendix E).

Instrumentation and Data collection

The instrument used in this study was a teacher made data collection device (Appendices F through H) constructed to evaluate the frequency of the maladaptive/replacement behavior including the setting the behavior is happened in. Specifically, this device assessed the location the student was in, the use of the scheduled video viewing, student's response to the video, attempt to practice the replacement behavior and the success of that practice. All staff working in the FAA program and in the vocational program was possible observers and all were trained in the procedures used in this study.

A schedule for viewing the video during the intervention stages of the study (Appendix I) was included with the daily data collection device. This schedule indicated when the staff member working with the student will give the prompt to view the video.

Collection of Data

The parents and staff working with the student completed a task analysis of the replacement behavior and created a story board (Appendix E) demonstrating the replacement behavior. This story board was used to film the video and was used after. The researcher and student filmed the video segments and the researcher edited the video to create a video of three to five minutes that was downloaded to the student's hand held video device (iPod). The researcher's voice and instructions were edited out of the video. The student received instruction on how to use the iPod, provided by the teacher to ensure that cost was not a factor in participating in the study, and had practice time to allow the use of the video to be independent.

The beginning of the fourth week of the study, the video was presented to the student. The staff used the schedule and gave the student the prompt to view the video. Data was collected on the student's ability to demonstrate the replacement behavior. After each viewing of the video, the student then had the opportunity to demonstrate the replacement behavior. If the student was not able to demonstrate the replacement behavior the student would re-watch the video one time. Data was taken each time the student watched the video. The data collected included whether the student was able to demonstrate the replacement behavior successfully and whether the student received verbal praise after the replacement behavior was demonstrated. Data on verbal praise was collected to allow the researcher to discount those data points and the verbal praise as a cause in generalization. Data included what response the student had if he/she

was unsuccessful in demonstrating the replacement behavior. This continued for two full weeks. The scheduled viewing of the video and practice was 200 minutes during this phase of the study.

After two weeks spent using the schedule and staff prompts to watch the video the schedule and prompts were removed. The student continued to have access to the video but had to initiate watching the video. Frequency data of the maladaptive behavior was observed and recorded as well as the frequency of the replacement behavior (use of fidgets in the backpack). The location of each time period was recorded. This data collection lasted two weeks for base line number two.

Data was collected on the student's success to demonstrate the replacement behavior and frequency of the maladaptive behavior and each setting it was displayed in. After each viewing of the video, the student then had the opportunity to demonstrate the replacement behavior. If the student was not able to demonstrate the replacement behavior the student re-watched the video one time. Data was taken each time the student watched the video. The data included whether the replacement behavior was successfully demonstrated and whether the student received verbal praise after the replacement behavior was demonstrated. Data was also collected on the frequency of the maladaptive behavior. Due to the time constraints of the study the amount of time that the student was able to watch the video and practice the replacement behavior did not meet the recommended 60 hours of practice time. The student was able to watch the video and practice during the intervention 3 hours and had an additional 2 hours of practice during baseline two.

These data points were evaluated to assess the success of the video to promote the generalization of the replacement behavior across all settings during the school day. There was

then a researcher-made Post-Intervention survey (Appendix J) given to the parents and staff who had worked with the student and collected data. Both the second base-line and the post intervention survey were used to provide the final information used to evaluate the generalization of the replacement behavior.

Procedure

Baseline One

The observers were special education staff working with the student. They were given a description of the maladaptive behavior that is the student is biting himself on the arm. They were asked to count using a tally chart (Appendix F) the number of bites during a specific time period. The time periods were broken up by the school schedule. The time periods consisted of: Adaptive Physical Education for 83 minutes, Math for 83 minutes, En cor (a study period) for 30 minutes, lunch for 30 minutes, Reading for 83 minutes and Pre-vocational skills for 83 minutes. En cor was a study period that was used to promote social skills in the functional classroom. It is a time that general education students came in to the functional classroom as part of a Circle of Friends program. During the observation the observers were given a clicker to keep count of the number of bites. The observer would return the clicker to the teacher at the end of each time period. This baseline continued for two weeks. They were also asked if there were any events that made the students day different, and did anything happen that made them unable to complete their observations for the full time.

Intervention

The video shot of the student was presented to the student on an iPod. When the student observed the video he was fully engaged with watching it and identified himself on the video.

The video was 2 minutes and 18 seconds long, fitting the recommended length of 2-5 minutes (Bellini & Akullian, 2007). The video demonstrated the student identifying that he had wait time and getting into his backpack to get out a timer and a fidget. This was designed as the replacement behavior. Having a fidget met the students need to have his hands occupied. The student would set the timer for two minutes and then would get to use the fidget. When the timer went off the student looked for his work and if there were none, identified that he needed to reset the timer and choose a different fidget. The researcher identified two minutes as an appropriate length of time for one fidget as it allowed the student to use the fidget but did not allow him time to begin to over-stimulate with it.

The video was shot in the classroom where the student spent the majority of the day and when the video was presented to the student it was presented in this classroom. The video was presented to the student at scheduled times of the day when he was in his homeroom classroom. The video was presented 8 times a day and the student would practice getting the timer and a fidget out of the backpack after each viewing. Magg (2006) stated that 60 hours of practice with a new social skill is needed for a student to learn and generalize it. This intervention did not reach the recommended 60 hours of practice time due to time constraint. Instead the student received 3 hours of practice time during the intervention phase.

People with ASD sometimes bite to meet a need for deep tissue pressure. This can be something used to sooth when an individual is over stimulated. Deep pressure stimuli provides a calming response and it is theorized that one reason students with autism bite is that it can calm them after being over stimulated or frustrated (Grandin, 1992). To replace the need for deep pressure, a weight was included in the backpack the student's fidgets were in. This was added after a discussion with the occupational therapist.

Staff members who worked with the student were given an Intervention Data Collection page (Appendix G) to record the frequency of the bites, the video viewing and practice of the replacement behavior. The staff was also asked if there were any events that made the student's day different, and if anything happened that made them unable to complete their observations for the full time.

Baseline Two

During the second baseline, the scheduled viewing of the video was removed. The student continued to have access to the video however he was not prompted to watch it. The student also continued to carry his backpack with him with the same fidgets and weight in the backpack. The same staff continued to work with the student and was taking data on the number of times the student bit himself, got a fidget from his backpack, and initiated watching the video. Staff reported back to the researcher using the same schedule as baseline one. Staff also recorded any response to the biting, such as prompts not to bite given by them or someone else. Data was kept about events that caused differences in the school day as this changed the staff working with the student. They were also asked if there were any events that made the students day different, and did anything happen that made them unable to complete their observations for the full time.

Generalization across settings

The student watched the video during structured times as it was scheduled, but viewing the video was not scheduled during unstructured times. The student was prompted to take his backpack with him when he left the classroom and was headed to a more unstructured time. This

may have influenced the response; however the student was not prompted to use the fidgets in the backpack.

Chapter Four

Results

The study followed the changes in a maladaptive behavior displayed by one student within various settings in a general education high school building. The data was collected from September 2011 through October 2011 including pre and post interview with the parent of the student. The author collected data on the number of biting incidents that the student had during a two week baseline, the number of biting incidents during a two week intervention where a replacement behavior was introduced, and the number of biting incidents during a two week baseline two as well as the number of times the backpack (replacement behavior) was used during the second baseline and during the intervention. Table 1 contains the descriptive statistics for the number of biting incidents per hour during structured and unstructured times, for each stage of the study.

The author then used the data to evaluate three research questions. First, did the biting incidents decrease between baseline one and baseline two? Second, did the biting incidents per hour decrease due to an interaction between the intervention and behavior during structured versus unstructured time? Third, did the use of the backpack remain constant or increase between the intervention and baseline two?

Initial Data Collection

Data collected during baseline one indicated the biting of his arm was a prominent behavior and the student needed a replacement behavior. Background information was collected from the father of the student indicating that the student had been biting his arm for several years. The father shared that the student would bit his arm when out in community settings such

as at the grocery store. To help decrease the number of times the student would bite his arm, the father gave him two spoons to tap together. However, the father felt that this was not appropriate in public settings because of the noise the student can make with the spoons.

A clicker was given to the staff working with the student and the following description of the behavior was provided. A bite is when the student places any part of his hand, other than fingers into his mouth including his wrist and bites. Staff was instructed to count each bite by depressing the clicker. The staff was then instructed to bring the clicker back to the author at the end of a specified time. The author then recorded the number of bites that occurred during the time and gave the clicker to the next staff member. At the time that the clicker was delivered to the author, this question was asked: “Was there anything that caused you to miss time observing the student?” “Any activities that happened that were out of the normal routine?”

The student would engage in biting his arm during structured time when his work would be difficult for him to do, when he was trying to recall specific information such as math processes, during down time in the classroom and during unstructured class time. He bit his arm an average of 7.17 times per hour ($SD=7.19$) during baseline one.

Because of the frequency that the student was biting himself, he was isolated from both his peers in the special education classroom and his general education peers. His peers would move away from him when he was biting and in the lunch room students moved away from his table.

Intervention data collection

On the first day of the intervention, the student was presented with the video on an iPod. He was instructed to watch the video and then tell the researcher what happens in it. After

watching the video for the first time the student gave an oral review of what he observed in the video. The student was then instructed to practice with backpack. On all subsequent days of the intervention, the student followed his visual schedule (Appendix I) and watched the video during the eight scheduled times. The staff who worked with the student continued to use the clicker to report the frequency of the number of bites during their specific time. The staff were asked the same questions from baseline one each time they returned the clicker to the author and data was collected on the answers.

Baseline Two

During baseline two the scheduled viewing of the video was removed. The student continued to have access to the video to watch but he now had to initiate viewing it. The staff members working with the student were instructed to continue using the double clicker to count the number of bites he had in a specific time frame. The staff was also counting the number of times he got into his backpack. The staff was asked the same questions as they were asked in baseline one each time they returned the clicker to the author and data was collected on the answers. The student bit his arm an average of 4.46 (SD=4.46) times per hour. The first research question was to examine whether the biting incidents per hour decreased from baseline one to baseline two. This was assessed using a *t*-test, and it was found that biting incidents significantly decreased from baseline one to baseline two, $t(118) = 2.56, p = .01, d = .47$.

The second research question assessed whether baseline one versus baseline two interacted with structured versus unstructured time to affect the number of biting incidents per hour. There was a main effect of the intervention, such that biting incidents decreased from baseline one to baseline two, $F(1, 116) = 11.77, p = .001, \eta^2 = .09$. There was no main effect of

structured versus unstructured time, $F(1,116) = .10, p = .75, \eta^2 = .001$. There was an interaction between the intervention and structured versus unstructured time, $F(1,116) = 8.24, p = .005, \eta^2 = .07$. During structured time, the number of biting incidents per hour was not significantly different from baseline one to baseline two ($p = .59$). However, during unstructured time, the biting incidents decreased significantly from baseline one to baseline two ($p = .003$).

The third research question was to examine whether the use of the backpack as a replacement behavior remained constant or increased between the intervention and baseline two. During the intervention the student used the backpack 1.65 (mean) times per hour (SD = .253). A decrease of the backpack usage was seen in baseline two with the student using it .527 (mean) times per hour (SD = .786). A t -test determined that this difference was statistically significant $t(118) = 10.59, p < .001, d = 1.93$.

Although the student was not using the backpack at the same frequency rate, the biting incidences decreased significantly during unstructured time and overall.

Parent observations

The father of the student completed a pre and post intervention survey requesting information about the maladaptive behavior seen at home and seen in the community. In the pre-intervention interview the father of the student identified that the student bites his arm on a regular basis. He bites his arm at home and when they go shopping in the community. He used to bite his arm in the car, but the father gave the student two spoons to use in the car, however he does not let the student take the spoons into the community because of the noise the student makes with them. The father said he had to tell the student to stop biting his arm 10-15 times on a regular basis.

During the post intervention interview, the father identified that the student was still biting his arm at home, and in the community. He stated that the student was not biting his arm in the car and was using the spoons more without having to be told to use them. While the student was still biting, the father stated that he feels he is telling the student to stop biting less, maybe 5-10 times a day compared to 25 or more times a day.

Chapter Five

Discussion

The current study adds to the growing body of studies that are being used to identify VSM and VM as a research based intervention. VSM and VM can be used to teach students with ASD daily living skills, vocational tasks, academic tasks, and social skills. By providing teachers with a research based intervention to improve the social skills of students, they are in turn able to help students have a higher quality of life.

This case study found that the use of VSM caused a significant change in the maladaptive behavior of one student. The author was able to observe two incidents that occurred during baseline two where the student identified that he needed to use a replacement behavior. During the first incident the student made eye contact with the teacher, voiced that it was wait time not work time, then voiced that he need fidget. He went fully through the process of getting the timer and a fidget out without watching the video. Work time was identified as any time that the student had work to do at his desk. Wait time is any time that the student did not have work to do, this is identified as unstructured time.

The other incident occurred when the student came into the classroom after lunch. As lunch is very loud and there is a lot of movement the student often got over-stimulated. The student walked into the classroom and moved his arm up to bite it. He then moved his arm down, and said “no biting, get fidget.” If the student had been able to reach the 60 hours of practice time, perhaps the biting would have been extinguished.

The deep purple bruise, once thought to be permanent, has healed. While the student still has a bump where the muscles have changed their shape due to repeated biting, the purple color

is gone and the staff working with the student can now begin to work with the muscles to decrease the bump on his arm.

The father of the student reported that the student was biting less at home and he was not biting at all in the car, which had been a place the student struggled with.

Current research

This study found a statistically significant difference in the frequency of biting between baseline one and baseline two after the use of a VSM intervention. The current literature reflects that VSM is a successful strategy but is difficult to pinpoint how successful it is as it is often paired with other interventions such as token reward programs and verbal praise (Shukla-Mehta, et al., 2010). Bellini and Akullian (2007) in a meta-analysis of 23 studies using VM and VSM found a moderate intervention effect, while none of the studies reached statistical significant in the use of VSM or VM to teach and promote generalization of the learned skill.

Implications for teaching

Teachers of students with ASD often search for ways to improve social skills and thus improve the quality of life their students will have as adults. VSM is one of the ways that teachers can meet the social needs of students. With improved social skills, students with ASD will increase their network of friends and will be able to have a more normalized high school experience. Increasing their network of friends and improving the social skills of students will decrease the potential of them being victimized by bullies.

Teachers can create short videos for students to use after initial instruction. This will allow some students to have the repetitive practice needed to master such a skill while others can

move on to work on new skills. Studies have also shown that VSM can also have impact of academic and vocational training of students.

Implications for students with ASD and parents

Students with ASD can use VSM to improve their social skills, provide needed information and reminders in an age appropriate way. Because students with ASD already stand out from their peers, it is vitally important that methods used to teach or reinforce social skills be done in a way that does not make them stand out more. The use of a hand-held video device such as an iPod is age appropriate. High school students are often seen walking the halls with headphones or ear buds playing music. Thus using an iPod to provide this much needed instruction matches the society of high school students.

Limitations

The small population of a case study is one limitation to the research. A single-subject design can lead to concerns about validity. To increase the validity of the study the author used an ABA research design. The duration of each stage of the research, the number of observations, the location of the observations, and the staff completing the observations were kept constant as is suggested by Wiersma (1995). The use of VSM to modify behavior requires that the replacement behavior match the student's capability, thus the possibility of having a larger population when using VSM to teach social skills is difficult.

The limitations to using VSM involve how much time it can take to make the story board and edit the video. As teachers often have more work than they can get done in a day adding this work that can be extensive at first, to an already packed day may cause of teachers to overlook the value of VSM. However, the author found that once the video was in use the amount of

teacher involvement needed to correct the maladaptive behavior was notably less than it would be without the use of the video.

This study focused on using VSM alone to increase generalization of a social skill. The design of the study made it imperative that the video be used in a constant manner. The use of the schedule assisted in ensuring that the use of the video was done often during the school day. It is important that the student have multiple practices during the school day, however it is difficult to provide the student with the needed 60 hours of practice (Magg, 2006). To be most effective, the student should use the video in as many places as possible. The school and family need to work together so that the video can be taken home and used in the community. Due to family needs, this was not possible for the student involved.

Another limitation to using VSM with multiple students in the classroom would be the cost involved. Each student would need to have their own video device and the cost could lead to teachers not being able to work the cost into the school budgets. Within this study the author identified three students who would benefit from using VSM to learn social skills. With the cost of a video device being between \$40.00-\$200.00 per device the cost for all students would be between \$120.00-\$600.00. As many families who have students with significant disabilities have an increase in daily living costs, being able to afford a video device could prevent the student from benefiting from using VSM.

Future Studies

The current research has led to questions regarding the use of VSM in teaching. Can videos be created that will give instruction to a small group (3-4 students)? Teachers may find it difficult to block out the needed time to create a video for one student. Thus, if a video can be

created and used in small group instruction, teachers may be more willing to embrace the use of VM and VSM as teaching strategies.

Would a student be able to use an iPod the way that social stories are often used? That is would a student be able to access a video demonstrating appropriate behavior or a needed skill for a specific setting or event? If a student would be able to access videos and watch themselves be successful would that further improve their ability to function in society and provide them with a greater quality of life?

Would VSM and VM be successful for teachers who are working with students with a variety of disabilities? As educational programs move from categorical to need based, students with a variety of disabilities are combined in one program or classroom. Would VM or VSM be successful in teaching students with emotional disabilities problems solving and stress management techniques? Would the repetitive nature of the VM and VSM be successful in helping students with intelligential disabilities learn daily living skills or increasing their academics?

Research answering these questions would be beneficial to the educational community. It would provide teachers who work students who have low incidents disabilities, additional strategies to reach students.

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APPENDIXES

Appendix A
Institutional Review Board

IRB No. _____

Reviewer _____

Wichita State University
Institutional Review Board (IRB) for the Protection of Human Subjects

Application for Approval of Research Involving Human Subjects

Please check spelling, punctuation, and grammar before submitting.

Name of Principal Investigator(s): ___Donna
Sayman_____

(For a student project, Principal Investigator **must** be a WSU faculty member; student is listed as Co-Investigator.)

Departmental/Program Affiliation of PI: _____ C&I _____ Campus Box: ___28___ Phone
___x6877_____

E-mail _donna.sayman@wichita.edu_____

Name(s) of Co-Investigator(s): _____Thea
Harroald_____

Co-Investigator(s) is/are: ___ Faculty Member X Graduate Student ___ Undergraduate Student
Other, please specify _____

Type of Project: ___ Class Project ___ Capstone Project X Thesis or Dissertation ___ Funded Research ___ Unfunded Research ___ Secondary Data Collection/Analysis ___ Program Evaluation

___ Revision or Extension of Previous Approved IRB -

Title: _____

Title of Project/Proposal:

Expected Completion Date: _December 2011_____ **Funding Agency (if applicable):**

Please attach additional sheets, if necessary, with numbers of responses corresponding to those listed below.

1. Describe the research in non-technical language.
The researcher will be working with students who have autism or autistic characteristics and have poor social skills. The researcher will be using video self-modeling to teach social skills. These students will have multiple practices for these social skills during this time. Practice will take place in a general education building in both special education and general education classrooms.

2. Describe the study/research design.
The researcher will be using a single subject multi-baseline design. The baseline will be taken weeks 2, 3, 6, and 7. These baselines will be compared to evaluate the generalization of the skill/behavior. The intervention video will be available for the student throughout the entire study, but the teacher prompt to view the video and the schedule to view the video will be removed after initial intervention during weeks 4 and 5. Data will continue to be taken during weeks 6 and 7. Week 8 and 9 the teacher prompt and schedule will be put back into place. After week 9 the prompt will be removed. This will allow the researcher to determine if the video is what is helping the student to generalize the behavior.

3. Describe the benefits of the research to the human subjects, if any, and of the benefits to human or scientific knowledge.

The researcher's plan is to use video self modeling and hand held video devices to provide instruction on specific social skills. Students will learn better social skills and will be able to generalize them into other areas of their life easier as they will be able to practice these social skills in multiple settings. They will also have a genuine interest in the video as they will be the focus of the video. The students will also see themselves be successful at the specific behavior or skill and that will increase their belief that they can be successful at that behavior or skill. Students with better social skills will have increase opportunities to take classes and have new opportunities outside of school. When they begin to be successful they will also increase their self-esteem. A higher self-esteem allows students to be better advocates for themselves. Adults who have better social skills are better able to function in our society. They hold jobs longer and form meaningful relationships which lead to them having better quality of life.

4. Describe the subjects, how the subjects are to be selected, how many are to be used, and indicate explicitly whether any are minors (under age 18 per Kansas law) or otherwise members of "vulnerable" populations, including, but not limited to, pregnant women, prisoners, psychiatric patients, etc.

Participants are all students in the Functional Applied Academics program at Maize High School who demonstrate maladaptive behaviors, , such as yelling, hitting, scratching, and lack of personal space and have autism or autistic characteristics. Teaching replacement behaviors is part of the students' school day. All students are currently and will remain under the age of 18 during this intervention. All students have cognitive disabilities such as downs syndrome, testing in an MR range, an inability to generalize skills, and low adaptive skills. Anticipated participants: 1

5. Describe each procedure step-by-step, including the frequency, duration, and location of each procedure.

Starting in August, parents will be sent permission slips. Upon return of those slips, parents will then be called for an interview using the teacher created Pre-Intervention Survey Form. During the same week, on Monday, Staff working with students will be asked to fill out a social skill inventory for the students who will be involved in the intervention. All inventories will be completed within five days of being given. Specific skills/behaviors will be identified and replacement behaviors will be decided upon.

Week one will consist of getting the above information and meeting with parents who agree to have their students participate.

Starting in September baseline data will be gathered to be able to identify the frequency and location of the behavior(s) being addressed. Data will be collected in all settings the student is in during the school day including but not limited to: Function Academics classroom, vocational setting, general education classroom, lunch room, hall, and gym. A story line will be created which identifies all the sub-skills of the behavior. Video will be shot with the student, who will be demonstrating the scripted sub-skill with teacher instruction. The teacher voice will be edited out of the video. The videos will be edited together to have one video where the student demonstrates the replacement behavior. This will last for 2.5 weeks

Following the baseline gathering, the intervention will be put into place. The student will be instructed to watch the video at the scheduled times. The student will then have the opportunity to demonstrate the replacement behavior. If the student is not able to demonstrate the replacement behavior the student will re-watch the video. Data will be taken each time the student watches the video. The data will include the student's response to the video, was the replacement behavior successfully demonstrated, was the student given verbal praise after the replacement behavior was demonstrated, the setting that the video was viewed and was the teacher prompt needed to have the student view the video. Data will also include what response the student had if he/she was unsuccessful in demonstrating the replacement behavior. This will also last for 2.5 weeks.

Starting October the teacher prompt and scheduled viewing of the video parts of the intervention will be removed. However the video will still be assessable to the student. The student will have to initiate viewing the video. Data will be taken each time the student views the video on his/her own, each time the skill or behavior is displayed in both appropriate and maladaptive forms. This phase will last 2.5 weeks.

After the second baseline is established the teacher prompt and the scheduled viewing of the video parts of the intervention will be put back into place. The student will be instructed to watch the video at the scheduled times. The student will then have the opportunity to demonstrate the replacement behavior. If the student is not able to demonstrate the replacement behavior the student will re-watch the video. Data will be taken each time the student watches the video. The data will include the student's response to the video, was the replacement behavior successfully demonstrated, was the student given verbal praise after the replacement behavior was demonstrated, setting that the video was viewed and was the teacher prompt needed to have the student view the video. Data will also include what response the student had if he/she was unsuccessful in demonstrating the replacement behavior. This phase will be 2.5 weeks and will end in November.

Beginning in November the second intervention phase will be complete and the teacher prompt to view the video will be removed. The student will continue to have access to the video but will no longer be prompted. Data will continue to be taken each time the student uses the video and demonstrates the

replacement behavior, demonstrates the replacement behavior without the use of the video, and displays the maladaptive behavior. This data will include setting, students response to the video, teacher response to the behavior (replacement and maladaptive). A Post-Intervention survey will also be sent home to parents asking specific questions about the replacement behavior.

After the intervention is complete the data analysis will be completed and results section started.

6. Describe any risks or discomforts (physical, psychological, or social) and how they will be minimized.

There are no physical discomforts; there is a minimal chance of social discomfort due to the videotaping sessions and the expectations that may place on the student. These concerns will be address by having the videotaping sessions done at a time that other students and staff are not in the classroom.

7. Describe how the subject's personal privacy is to be protected and confidentiality of information guaranteed (e.g. disposition of questionnaires, interview notes, recorded audio or videotapes, etc.).

All intervention forms, other then the consent forms and data will be kept in a seperate folder in a cabinet containing my students' confidential records that are only accessed with my consent. Consent forms will be kept in a locked cabinet separate from all other intervention forms. The hand held video devise will be stored in this cabinet each evening. Files from the computer will be down loaded and saved to a thumb drive and stored in the cabinet as well. Files will be deleted from the computer. Files will be retained by me should I leave the district for a period of three years. To ensure confidentiality of all parties, numbers will be assigned to student participants (student 1, student 2 ect.). The families will have a corresponding number. A master list of student names and assigned number will be kept in the locked cabinet with the consent forms. The student number will be used on all other intervention materials.

8. Describe the informed consent process and attach a copy of all consent and/or assent documents. These documents **must** be retained for three years beyond completion of the study. Any waiver of written informed consent must be justified.

Parents will be informed about the purpose of the intervention as well as the process that will be followed to implement it. They will be given a copy of all teacher-created material to be used during the intervention.

9. Attach all supporting material, including, but not limited to, questionnaire or survey forms and letters of approval from cooperating institutions.

The Principal Investigator agrees to abide by the federal regulations for the protection of human subjects and to retain consent forms for a minimum of three (3) years beyond the completion of the study. If the data collection or testing of subjects is to be performed by student assistants, the Principal Investigator will assume full responsibility for supervising the students to ensure that human subjects are adequately protected.

Signature of Principal Investigator

Date

Signature of Co-Investigator (for student project)

Date

APPENDIX B

Pre intervention survey

1. How do you feel about the school your child is at?
2. Do you have concerns that your child is bullied at school?
3. Does your child have friends they spend time with outside of school?
4. Do you have any concerns about behaviors your child has?
5. How would you describe this/these behaviors?
6. How long has your child displayed this behavior?
7. Do they happen in the community? If so, where and when?

Is there anything that you have done that has helped decrease the behaviors?

Appendix C

Notice of Consent sent to parent

This form requests your consent to have your minor student participate in a research and evaluation study that evaluates the use of video self modeling to increase generalization of appropriate social behavior. Data collection and analysis will be completed under the direction of Dr. Sayman, Assistant Professor in Curriculum and Instruction and Thea Harroald, student in the College of Education.

Project description: This project involves an interview with parents to identify a maladaptive behavior that is displayed in multiple settings and is of concern. The student will view a video of themselves being successful in displaying the replacement behavior. The success of the generalization will be evaluated by using a multi-baseline study and a post intervention survey.

Potential Benefits and Concerns: Potential benefits are that students will learn better social skills and will be able to generalize them into other areas of their life easier as they will be able to practice these social skills in multiple settings. They will also have a genuine interest in the video as they will be the focus of the video. The students will also see themselves be successful at the specific behavior or skill and that will increase their belief that they can be successful at that behavior or skill. Students with better social skills will have increase opportunities to take classes and have new opportunities outside of school. When they begin to be successful they will also increase their self-esteem

There are no physical discomforts; there is a minimal chance of social discomfort due to the videotaping sessions and the expectations that may place on the student. These concerns will be address by having the videotaping sessions done at a time that other students and staff are not in the classroom.

Confidentiality: All information regarding this project will be kept confidential according to legal and ethical guidelines. All information associated with project participants will be kept in locked files accessible only the researchers. In accordance with Federal regulations, the research materials will be kept for a period of 3 years after the completion of the research project. No comments will be attributed to you or your student by name in any reports. Provided that the information will not identify you or your student, you or your student may be identified by category but by an assigned student and family number. This consent form will be kept separate from other intervention papers. It will be kept in a locked cabinet.

Audio taping: All interviews will be recorded using an audio recording device, unless you prefer to have the interview conducted without taping. If you agree to have the interview recorded, you have the right to request the tape be stopped at any time-either to stop the interview completely or to continue the interview unrecorded.

Videotaping: Videotaping sessions will be completed in a classroom with only the student being recorded and the researcher. The video tape will be kept in a locked cabinet with the consent forms.

Participation is voluntary: Your participation is entirely voluntary, and you can decline to answer any questions you do not wish to answer or withdrawal your participation in this study at any time without

penalty. You can freely withdraw from the project at any time without negative consequences, and all data pertaining to you and your student will be destroyed. Anticipated participants: 1

Contact information: If you have any questions concerning the research project or intervention please contact Graduate student researcher: Thea Harroald at 316-350-2206, Maize High School 11600 W. 45th St. N, Maize, KS 67101; tharroald@usd266.com or principal investigator: Donna Sayman at 316-978-6877, Wichita State University, Department Curriculum and Instruction; donna.sayman@wichita.edu

Questions: Please contact with any questions or concerns. If you have any questions about your rights as a research project participant, you may contact the WSU Office of Research Administration at Wichita State University, Wichita, KS 67260-0007, (316) 978-3285.

Please check the appropriate line to indicate that you have read and understand this letter:

_____ I agree to have my student participate, and I give consent that the interview can be recorded. I understand that, at any time, I may ask that the recording or interview be stopped.

_____ I agree to participate, but do not give consent to record the interview.

Signed: _____ (Date)

CHILD ASSENT FORM

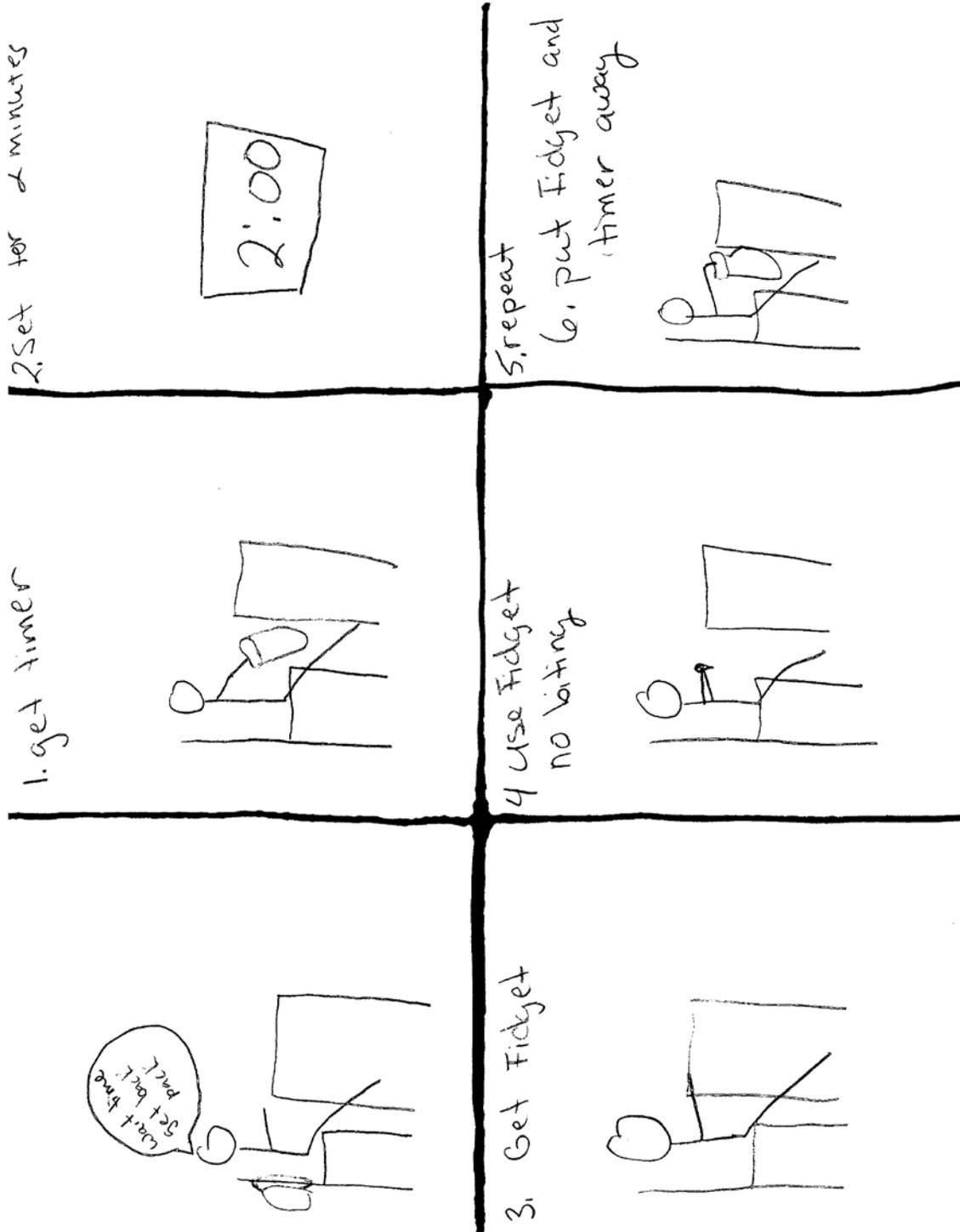
I have been told that my parents (mom or dad) have said that it's ok (or, have given permission) for me to participate, if I want to, in a project about video self modeling and social skills. I know that I can stop at any time I want to and it will be ok if I want to stop.

Name

Date

Appendix D

Story Board



Appendix E

Target behavior

During times that the student does not have class work (unstructured time) he will bit his arm just above the wrist leaving teeth marks in his arm. This behavior is also observed when the student is working on a task that he has not mastered. Father states that he observes it in the car, when they are shopping, and at home when the TV is shut off.

Appendix F

Baseline Data collection page for Baseline 1

Observer: _____

Setting/time: Before school, 1st block _____, 2nd block _____,

Encor _____, lunch, 3rd block _____, 4th
block _____

date	Maladaptive behavior observed Tally each time observed in a setting

Appendix G

Data collection page Intervention

DATE: _____

Setting	Observer	Video viewed	Replacement behavior attempted	Replacement behavior successful	Biting
1 st block		Y/N	Y/N	Y/N	
1 st block		Y/N	Y/N	Y/N	
2 nd block		Y/N	Y/N	Y/N	
2 nd block		Y/N	Y/N	Y/N	
Encor		Y/N	Y/N	Y/N	
Lunch		Y/N	Y/N	Y/N	
3 rd block		Y/N	Y/N	Y/N	
3 rd block		Y/N	Y/N	Y/N	
4 th block		Y/N	Y/N	Y/N	
4 th block		Y/N	Y/N	Y/N	

Appendix H

Baseline Data collection page for Baseline 2

Observer: _____

Setting/time: Before school, 1st block _____, 2nd block _____,

Encor _____, lunch, 3rd block _____, 4th block _____

Date	Adaptive behavior successful after video?	maladaptive behavior demonstrated (record time)	Video viewed after maladaptive behavior shown
	Y/N		Y/N

Appendix J

Schedule

Get off bus and put away backpack

Come and get shirt/shorts for put on

Come to E-21 and watch video

and practice wait time

Go to PE class

Come to E-21 and watch video

and practice wait time

Go to math class

Go to E-21 and watch video

and practice wait time

Go to Encor in E-21

Put magazine in wait time

backpack for lunch

Sensory input _____

Lunch

Hygiene

Sensory input _____

Watch video in E-21

and practice wait time

Task _____

Task _____

Watch video in E-21

and practice wait time

Task _____

Task _____

4th block bell

Watch video in E-21

and practice wait time

Task _____

Task _____

Watch video in E-21

and practice wait time

Task _____

Task _____

APPENDIX K

Post intervention survey

1. Have you noticed any changes in the behavior we identified to work on?
2. If so, what changes have you noticed?
3. Has this changed at home? In the community?
4. Do you feel that using the video at home would help?

