Filmmaking: A Video-Based Intervention for Developing Social Skills in Children With Autism Spectrum Disorder

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Video production can be easily used as a way to develop social skills in older children with higher-level autism and Asperger syndrome. The program described in this article is an inclusive program that employs a reverse inclusion strategy to teach social skills to children and adolescents with autism utilizing filmmaking. We discuss some of the social challenges faced by these children, the importance of addressing social skills, the program that we implement for developing social skills in children on the spectrum, and our experiences and observations with this program. We provide strategies that should be considered during filmmaking to help children on the spectrum develop social skills in integrated settings, share our perspectives of filmmaking, and our observations of the impact of filmmaking groups on learning.

Keywords: autism, autism spectrum disorders, Asperger syndrome, filmmaking, social skills development, social skills programs, video modeling

Filmmaking is an artistic way of helping children on the autism spectrum develop social skills. In this article, we describe how we use filmmaking as a reverse inclusion strategy to teach social skills to children and adolescents with autism. We start by discussing the social challenges faced by children and adolescents with autism, the importance of addressing social skills, and some of the barriers we faced as we addressed social skill differences in the design and implementation of our center's program, including the transfer of social skills and recruitment of typical peers. We also talk about the theoretical foundation that supports our center's activities and how our strategies are supported by research. Additionally, we provide suggestions on how teachers might set up video groups in their classrooms to support social skills development and inclusion. We discuss how our film groups helped children with autism and Asperger syndrome make friends and develop a sense of identity. And, we provide strategies on how to encourage social skills development when children are learning about filmmaking. It is hoped that the information we share will be useful for teachers working to develop integrated social experiences in their classrooms, schools that are developing naturalistic socialization programs for children with autism, nonprofits seeking to develop integrated out-of-school programs for children, parents, and adults on the autism spectrum who are seeking answers to questions on socialization services.

Social Challenges of Individuals with Autism

Difficulties with social skills are a defining characteristic of autism. Individuals with autism usually have problems interacting and communicating with people; and they are known to exhibit restricted, repetitive, or ritualistic behaviors, interests, and activities (Schall & McDonough, 2010). Challenges in the area of socialization persist for many individuals with autism regardless of cognitive or language ability (Carter, Davis, Klin, & Volkmar, 2005). These social challenges

also persist for adolescents with Asperger syndrome. It has been reported that adolescents with Asperger syndrome have fewer friends and more incidents of bullying (Koning & Magill-Evans, 2001). Thus, the social challenges experienced by students with autism and Asperger syndrome can shape their quality of life and future outcomes. It can also affect academic achievement and social adjustment for school-aged individuals. For adults on the spectrum, social challenges can affect underachievement in occupation, independent living, marriage, and friendships (Hendricks, 2010; Zercher, Li, Marquart, Sandal, & Brown, 2006; Howlin, 2000; Odom et al., 2006). Social skills do not come naturally to individuals with autism spectrum disorders. To master social skills, they must be taught the skills and given multiple opportunities to practice these skills again and again.

Social Skills Interventions

Research on social skills interventions describes an array of program models and services with varying results (Schreiber, 2011; Wilczynski & Pollack, 2009). According to Schreiber (2011), current research involving social skills interventions for school-aged children and teens with high functioning autism is still in its genesis. Most of the studies cited in Schreiber's literature review were case studies that contained small sample sizes. While single-subject designs with clinically significant outcomes may provide the first indication of efficacy in social skill intervention, it cannot be established without larger numbers. Only six studies had sample sizes of 25 or more, and only one study included effect sizes, which makes cross-study comparisons difficult. In addition, only seven of 38 studies included a control group, with only two of the seven using random assignment. Parents are often reluctant to give permission for their child to participate in a study if their child may be randomly assigned to a control group and excluded from a potentially helpful intervention. To address this issue, most studies that included a control group made use of a wait-list or delayed-treatment control group. Another difficulty in comparing interventions is the variety of social skills that were targeted, as well as outcome measures.

Two common challenges to the successful outcomes of most social skills interventions include generalizing and maintaining skills across environments and real-life situations (Rogers, 2000; Williams White, Keonig, & Scahill, 2007). This can be especially challenging when interventions fail to target meaningful skills taught in the context of natural settings (Bellini, Peters, Benner, & Hopf, 2007; Gresham, Sugai, & Horner, 2001; Rogers, 2000; Williams White et al, 2007). To address this challenge, educators need to identify practices that foster generalization and maintenance such as outings to community settings, opportunities for families to practice skills or activities outside of the intervention, and regular meetings with families (Mackay, Knott, & Dunlop, 2007).

On the other hand, some educators suggest specific supports for successful social skills interventions that place careful attention on environmental factors such as teaching social skills instruction embedded within preferred activities through a familiar and predictable school and home or community setting that limits unpleasant sensory stimulation (Marans, Rubin, & Laurent, 2005). Other recommendations for improving social skills programs include matching strategies and tailoring programs to the individualized needs of the student (Bellini et al., 2007; Gresham et al., 2001).

Many social skills training models used with higher-functioning students with autism focus on social cognition or understanding the principles behind social behavior based on Theory of Mind.

In brief, Theory of Mind is the ability to reflect on the contents of one's own mind and understanding another person's mind, like developing empathy. Although research indicates that individuals with autism can improve performance on false belief tests or perspective taking tasks with training, these improvements often do not translate into progress in everyday interactions (Ozonoff & Miller, 1995).

Additionally, research suggests that caution should be taken with programs that focus on social weaknesses or challenges since negative self-evaluation can impact the anxiety levels of some individuals with autism (Mundy, Henderson, Inge, & Coman, 2007). Concerns about anxiety are especially noteworthy as individuals on the spectrum exhibit significantly higher levels of anxiety than neurotypical individuals or individuals with learning disabilities (Bellini, 2006). Cognitive-behavioral therapy augmented with social skills training in a group setting may be an effective way to reduce anxiety, foster friendships, and improve social and adaptive skill deficits of individuals with high functioning autism (Lopata, Thomeer, Volker, & Nida, 2006; White, Ollendick, Scahill, Oswald, & Albano, 2009). By addressing the socialization needs that are unique to autism (due to higher levels of physiological arousal and challenges) with cognitive-behavior therapy (e.g., self-regulation and relaxation strategies) that is augmented with social skills training, it can reduce social anxiety as well as emphasize the importance of group participation with peers (Bellini, 2006; Lopata, et al., 2006; White et al, 2009). However, for the social skills to be maintained and generalized, they must be practiced in a naturalistic environment.

Activities generated from special interests of individuals with autism may be an excellent vehicle for promoting teamwork, as well as providing opportunities for these individuals to interact with a diverse social group in a relatively predictable environment. In Schreiber's (2011) analysis of the literature on social skills development in children with autism, it was suggested that educators might find it effective to incorporate "social stories" or another strategy that taps into the high verbal skills of this group. In the case of a visually based intervention such as filmmaking using "video groups," the social stories would be written through a video script thereby creating positive social experiences that can potentially lead to increased motivation on the part of the child to initiate and engage in further social interactions.

While research indicates that social skills program models that use adults as partners experience challenges in generalizing skills to peer settings (Rogers, 2000), intervention models based on socialization within a natural peer setting also have challenges. Parent, family, and peer training can be essential in ensuring a holistic social skills application; and, adult scaffolding is one intervention that can be used to encourage socialization skills among these entities (Prendeville, Prelock, & Unwin, 2006). Adult scaffolding is an assisted learning experience designed to increase the participation of children with autism spectrum disorder in social interactions. When using adult scaffolding, the parent (or another adult) arranges social interactions, such as playdates or outings for children with high functioning autism. As the child becomes more socially proficient and assumes more responsibility for the interaction, there is a gradual fading of parent support.

One of the most common challenges to peer group intervention is reduced natural motivation for neurotypical peers to engage in social interactions with peers with autism (Stichter, Randolph, Gage, & Schmidt, 2007). While programs that promote autism awareness and how to interact

with individuals with autism spectrum disorders can contribute to fostering positive peer interactions and acceptance (National Research Council, 2001; Bellini, 2006), recruiting neurotypical peers to voluntarily participate in programs remains a challenge for community-based intervention programs.

Moreover, social skill programs in community settings that include neurotypical peers report having difficulty accessing appropriately matched peers. In addition, programs that include typically developing peers or peers with other types of disabilities face the challenge of locating research-based techniques and practices that are widely applicable to a diverse group of students. Stahmer (2007) noted several difficulties in applying research-based programs in community setting such as the lack of published manuals and guidelines on research-based programs, particularly, guidelines geared towards the implementation of programs in a community setting, and applicable information on the type and intensity of parent involvement and peer recruitment as part of the programs.

Background

The community-based program model that we describe in this article is one that we implement at the Autism Social Connection (ASC). The ASC is a nonprofit organization that was founded five years ago by a group of parents, professionals, college faculty, and community members. This center provides out-of-school programs for children with autism in the San Francisco Bay area.

Children on the spectrum that participate in programs at the ASC are described as mild to moderate in their disability. Technology at the center includes user-friendly computers, cameras, lighting, microphones, a projector, and tripod. The staff at the center is trained to orchestrate filmmaking activities to promote a cycle of interaction and approbation. The staff model social interactions for the children and elicit these interactions from them.

When children with autism first start at the ASC, they usually do not have many friends and do not know what it means to have lasting friendships. Through filmmaking, they learn in subtle ways what it means to have a friend and be a friend to another child.

The primary mission of the ASC is to encourage children and adults with autism who participate in filmmaking activities to develop their socialization skills and embrace their identities through creativity and collaboration. Programs at the center focus on social relationships, rather than "surface behaviors," the child's interest, and natural motivation.

Activities that we implement at the ASC (i.e., video, art, photography, and drama) lend themselves easily to embedding social skills training because typically developing children learn to appreciate the art skills and ideas of children on the spectrum as they develop confidence and share more ideas. As a result, this becomes an iterative process of creativity, interaction, approbation, and confidence building for children with autism and typically developing peers.

In this article, we focus on the ASC filmmaking groups for boys and girls with autism and Asperger syndrome between the ages of 10 and 18. Although the social groups for the filmmaking classes were established in a non-profit community center, the program that we use at the center can be easily transferred and implemented in a classroom setting or after-school program.

Student Recruitment

Our experience with student recruitment echoed Stahmer's (2007) findings as we worked to develop interventions based on shared experiences with typically developing peers. In the beginning stages of our program, we implemented Wolfberg's (1995) Integrated Playgroups Model, which focuses on building children's play interests and abilities in a natural setting. Although research suggests that this play-based intervention may improve social patterns and symbolic play (Wolfberg, 1995), the challenge of trying to recruit and assess typically developing peers from the community outweighed the advantages. Our center was unable to continue with this model because we could not implement Integrated Play Groups with fidelity. In addition to difficulty with peer recruitment, we found that children wanted more variety in the selection of toys and activities than the Wolfberg model allowed.

Video Modeling

Video modeling is an effective teaching method for promoting social, language, and play skills of children, adolescents, and adults with autism spectrum disorders (Bellini & Akullian, 2007; Ganz, Earles-Vollrath, & Cook, 2011; McCoy & Hermansen, 2007; National Autism Center, 2009; Wilczynski & Pollack, 2009). Video modeling involves the use videos to provide modeling of targeted social skills (Bellini & Akullian, 2007). Filmmaking is the type of video modeling that we implement in the ASC where children reflect on their social behaviors and then reenact what they determine to be sociable behavior, but not in the context of what they are doing wrong, rather in the context of what a scene should look like in a movie.

There are four basic steps that we use for implementing filmmaking with students with autism—(1) identifying the target behavior (i.e., the social skills deficits), (2) identifying the target skills (i.e., the skills to be learned or developed), (3) video production (i.e., developing the video script, identifying who will demonstrate the behavior, identifying the scenario to be videotaped, and setting up and videotaping the scene), and (4) implementing the video modeling intervention (i.e., watching the videos, summarizing what has been observed in the videos, and practicing the skill in differing contexts).

All of the social skills intervention strategies that we implement at the ASC are evidenced-based. The filmmaking programs are designed around video modeling strategies that are proven effective in teaching social, language, and play skills to individuals with autism (Bellini & Akullian, 2007; McCoy & Hermansen, 2007; National Autism Center, 2009; Wilczynski & Pollack, 2009). Video modeling is especially effective for individuals with autism because it is highly motivating and engaging, and it focuses attention directly on targeted actions or cues. In addition, video modeling relieves anxiety by removing individuals from the intensity and uncertainty of spontaneous social interactions (Charlop-Christy, Le, & Freeman, 2000). With video modeling, children can watch a person (or character) on video, discuss his or her social interactions, and talk about the nature of the relationship. Some programs have the children videotape their contrived or scripted social interactions and then talk about their actions. In these situations, caution should be taken when talking about social challenges with children on the spectrum so as not to make them feel ashamed, humiliated, or embarrassed about how they acted or who they are as individuals.

In 2009, the National Autism Center (NAC) published a document written by a panel of experts who rated interventions considered evidence-based, according to extensive research reviews. The

panel classified each intervention based on widely accepted experimental evidence standards and related outcomes to determine if an intervention is established, emerging, not established or harmful. They found modeling to be effective, and specifically stated that video modeling was effective for children ages 3-18 years. They also determined that naturalistic teaching strategies are effective for children from age 0 to 9 years. Additionally, peer-training interventions were deemed effective for children ages 3-14 years. The NAC categorized developmental relationship-based treatment as emerging. Thus, the theoretical foundation for the interventions developed and implemented by the center were strongly supported by research of the NAC for providing appropriate interventions to students with autism spectrum disorders.

The Teaching Environment

The teaching environment at the ASC is an inclusive setting. The social groups were comprised of children and adolescents with autism and Asperger syndrome, as well as typically developing peers. Occasionally, the ASC would offer social groups for participants from preschool through adult. For younger children, the center provided integrated playgroups and play-dates. For older children in upper elementary, middle, and high school, the ASC offered film, drama, art, photography, cooking, and movement groups depending on demand and needs identified by participating parents and advisory board members.

The staff at the ASC tries to bring children together based on special interests. Currently, the film groups are experiencing a high demand because many children with autism are interested in movies or movie making, and parents appreciate the development of filmmaking skills as well as social skills. Parents have reported that their children look forward to attending filmmaking groups. Adults with autism also enjoy filmmaking classes because these classes provide a venue for them to demonstrate talent, communicate and learn vocational skills, and improve their social abilities.

The Filmmaking Groups

Children with autism make up the majority of participants in film groups. Their families pay for the services, which are supplemented by grants and fundraising. Typical peers are volunteers that we recruit from private (mostly religious) schools to join children with autism in these reverse inclusion settings.

Figure 1. Setting Up Scene

The ASC works with approximately 20 to 25 children on the spectrum and 15 typically developing children at one time. The children range in age from 8 to 16 years. Children under eight are mostly involved in integrated playgroups, art, or music groups.

The ratio of boys to girls with autism who come to the ASC is about 4 to 1; the ratio of girls to boys without autism is approximately 2 to 1.

Because girls are more likely to volunteer as typically developing peers, it can pose a challenge for teachers since girls and boys usually want to do different things during their social time.

Figure 2. Shooting Scene

Although many of the children participating in the film groups have what we describe as a mild disability, two of the children with Asperger syndrome had a few academic challenges but their social challenges presented serious problems in school. For example, one child in elementary school who was fully integrated into general education kept up with his peers academically and acted fairly typical during classes, but at recess he preferred to sit by himself on the playing field, bang sticks on the ground and hum.

Since many children with autism have focused interests that can seem like obsessions, when they first come to the ASC they show little curiosity in other children's interests. As a result, many of these children were not in a general education setting even though most of them could keep up with their peers academically and had no other behavior problems. The teachers explained that a few of the children with autism experienced delays in receptive language processing (a few seconds), as well as speech and language. Some children had problems with pragmatic speech and could not carry on an extended conversation. Some had minor behavior problems, mostly anxiety-related, where they might engage in slightly disruptive social behaviors. Nonetheless, all of the children in the film groups were considered high functioning.

Implementing Filmmaking in the Classroom

Teachers can use a number of strategies to implement filmmaking in their classroom. However, we suggest using a peer-assisted learning strategy to create heterogeneous groups of children, including children on the spectrum. It is important to have children in a group with different functioning levels so that all high achievers do not end up in one group and low achievers in another. We suggest placing children in groups of six. Having a group of this size will allow children to act as crew and cast to produce a good video. Some children will be recording the video while others are acting.

Prior to filming, ask the children to write a script together. Initially, the children should be encouraged to write scripts about friendships. In this way, the teacher can talk naturally about social skills, making friends, and anti-bullying. Students could also be asked to start by brainstorming ideas for a story. Teach the children how to brainstorm by asking them to write any idea down, no matter how outrageous. Brainstorming encourages the sharing of ideas, and sometimes the most outrageous ideas can be the best. Also, brainstorming creates a ideal opportunity for children to get to know each other, learn to cooperate, talk with each other, laugh together, and allow each other to have the spotlight (when their ideas are accepted by the group) and have fun together. Alternatively, the teacher could ask the children to write a script at home

or in another class, such as social studies, to bring other content areas to the forefront of the process. Or, the teacher could place children in pairs and have each pair work on an idea and then come together as a group to share their ideas and formulate a decision about which script they want to work on together. Such an activity forces the group to learn to negotiate and to communicate openly and honestly. Also, the children can read each other's scripts and decide how they want to make the movie. In groups, children can negotiate script changes (e.g., cutting scenes, adding scenes, changing characters or names of characters) or changing the name of the video. All of these activities combine to create a process of story telling, writing, editing, and working with other children to create a workable script that requires a negotiated interaction.

In the next step, ask the children to set up scenes, select costumes, and construct the set. You could also have the children draw a storyboard and encourage them to write stories that do not require elaborate costumes or sets. The videos should be short and require just a few scenes to put together. Long videos take more time to edit and children can get bored if the video takes too long to make. Videos should also be short because scenes often need to be repeated over and over, and multiple shots can get tedious for some children. In addition, the script should be fairly simplistic, without a lot of elaborate dialog, especially if high quality sound equipment is not available. Because everyone needs to hear what the children are saying in the film, when sound is unclear everyone loses interest in the film and the filmmakers become very disappointed. To avoid low level or unclear sound, teachers should have students use microphones when possible.

As filmmaking continues, ask the children to take on a different role each time they meet for filmmaking. The children can, among themselves, negotiate who will take each acting role. In this way, each child will have an opportunity to have a special acting role in each production. However, it should be noted that each week the children should also take on a different role thereby having a chance to understand and practice each role. Typical roles for filmmaking include director, cameraman, lighting expert, the person who holds the boom, the person holding the slate, and the sound expert. The amount of communication and collaboration in the interaction of filmmaking is abundant.

During post-production, children can work in pairs to develop music and sound effects for their film, in addition to editing (e.g., scenes, titles, subtitles, transitions). At the ASC, the teachers work on editing with younger children. Younger children find editing challenging and sometimes boring because they are eager see the final product. Teachers might recruit parent volunteers to do the editing or help the children with the editing. It is also helpful if teachers work together on a weekly basis to edit some scenes of the children's work so that they can see the progress of their work from week to week. In doing so, the children can feel a sense of accomplishment and they can see themselves on video. A good time to talk about their short film and social skills is at the beginning of a class session when teachers show the children what they did the week before and help them plan for the day.

Teachers only need to know a little about specialized technology to implement a filmmaking project. At the ASC, we use a portable green screen or stand up lighting, but with today's less expensive high definition hand held cameras, iMovie, and other technology, filmmaking and movie making does not require as much skill or money as it once did. Teachers can paint a wall green or cover a wall with green paper to make a background for special effects or they can take

children outside to use natural light to make their movies. However, teachers need to know how to use basic movie making hardware and software applications. It would be ideal if teachers knew how to make graphics for movie titles, use a green screen for special effects, and access public domain music, even if they don't know how to use something like Garage Band to teach children how to compose music for their production.

Teachers who only use a video camera will probably experience difficulty if they have children point and click to make a movie. Children need to be taught the "how to" skills in filmmaking and they need to learn some basic movie making skills like when and how to capture close ups and wide angled scenes, and when and how to edit and merge those scenes together. Children will get bored, and the quality of the film will be poor, when teachers allow them to simply film scene after scene without using editing or special effects software.

During filmmaking, it is important that teachers keep in mind that adolescents and teenagers with autism need to stay with the same group for a long period of time (e.g., an entire school year) because it takes a longer time for these children to get to know other people. Therefore, allow extended time for them to connect with other children before deciding that the group composition is not working. Ideally, it would be beneficial if the groups could continue to work together for several years. However, teachers can change the schedule and have the children work together more often for a shorter amount of time. At the ASC children work together once a week for two hours, and most of them come to the center for many years.

Parent and Peer Involvement

Parent Involvement

Parental involvement in helping children with autism develop socialization skills is critical. One way teachers can bring together parents of children with autism and parents of typically developing peers is by having a movie premiere. At the ASC, parents always attend special movie showing events to support their children and the teacher. These events are successful because parents get to know each other, participate more in activities, and learn about autism. Some of the videos created by children at the ASC are published on YouTube and can be viewed by the children, family, and friends. Producing videos demonstrates to parents that children with autism can produce good work. Most of the videos on YouTube were created and produced by children from eight to twelve years old with varying abilities.

Thus, it is important for parents of typically developing children and children with autism to understand that an important goal of filmmaking is not only to help children with autism learn video production but also to help them learn about, engage with, and accept differences. At the ASC it is not unusual for some typically developing peers to volunteer for several years to get to know and feel connected to teens with autism in the film groups. In one instance, a typically developing teenager, who was shy when he came to the ASC in junior high, starred in his school play during his senior year of high school. His sister has moderate autism and was also given a role in the same play in high school, which was a great experience for both children. This typically developing boy pursued a major in theater in college, and he is not the only typically developing child at the Center who has pursued acting.

Peer Involvement

The goal of the filmmaking program for typically developing children is to develop awareness and understanding of children with autism in a different way—a way of acceptance and appreciation of human difference. Instead of seeing a child with autism as a bit odd and always in need of help, typical peers are given an opportunity to get to know that children with autism and learn that these children have good ideas and can come up with interesting names for films, write funny dialog, act without embarrassment, and produce music on computers. These children also have a keen sense of what a film should look like. This is what teens with autism need—their typical counterparts to accept them and appreciate them for who they are that day.

Continuing an ongoing conversation with typically developing peers is another important goal of the filmmaking program. For general education inclusion teachers contemplating a filmmaking project, emphasis needs to be placed on preparing typical students for what may happen and what outcomes are expected. They should be told that outcomes are not just films. There are also friendships that develop through the filmmaking process. Moreover, typical peers need to be told what should be accomplished and teachers should orchestrate the classroom activities so that children cannot act like their uninformed friends during lunch club and ignore their peers with autism during recess or gym. Although typically developing peers will often see themselves as helpers rather than peers, especially as they get older, the hope is that after time, the children will connect with autistic children and start appreciating differences so they can feel more comfortable about welcoming students with autism into their lives and culture. The conversations with typically developing peers should be ongoing, open, and honest.

Our Perspectives

In filmmaking groups, children are encouraged to write their own scripts and decide for themselves what kind of movie they want to make. Many of the films are about friendships. In creating these types of videos, the scripts articulate how friends talk to each other, and act around each other, often in humorous ways. Beyond video modeling, however, filmmaking helps the children at the ASC learn the social skills required to make a friend and keep a friend. Most importantly, children are learning what it means to be a friend to another person by actually making friends within the group.

The type of skills needed to make a friend and be a friend can only be learned experientially. Like swimming, a child can watch 100 videos on how to swim, but if he never gets in a pool of water, he will never learn to swim and be good at it. For the first time in their lives, many of these teenagers are developing real friendships from their experiences with filmmaking. They call each other to go to movies or get pizzas, and many of them had never asked another child or have never been asked to a social event.

To learn to be a friend, children with autism have to make friends and feel the connection. Through filmmaking, these children are learning how to care about another person and how it feels when another person cares about them. Whereas typical children experience events like learning that friends fight, make up, and then fight again, children with autism are unaware of such events or experiences.

Beyond the "honeymoon phase" of a friendship, it is almost impossible to have a connected relationship without getting angry with another person, especially when working on a project together. When we get angry, we communicate, forgive, and come back to the relationship. Children with autism are not accustomed to having people "come back to a relationship." Through their past experiences, they have learned that if they expressed anger toward another child (one of their peers), that was usually the end of the relationship.

When children with autism express anger inappropriately or out of proportion to the magnitude of the situation, other children no longer want to be around them. In movie group, these interactions are controlled and facilitated by the instructors so that children learn how to deal with frustration and anger. In one instance, two teenage boys were angry at each other and called each other names. Both boys feared that the other would not like him anymore. But, with the subtle assistance of the instructor, both boys came back to the ASC the following week and apologized to each other. After a short period, the name-calling incident was forgotten and the boys were friends again, which is exactly what happens with typically developing children, but not usually with children with autism.

The teens in these groups are learning to say things like, "*I like you, I want to be your friend, but it bothers me what you are doing right now.*" They are also taught to accept each other's differences and recognize that autism has many different ways of presenting itself. At times they will say, "*He acts that way because it is part of his autism."* And, they might add, "*I don't like that kind of autism*." But, they learn to accept each other's differences. They are learning important friendship skills in the context of making films with a facilitating instructor. It is important to recognize this does not happen in a few weeks. It takes children with autism much longer, typically years, to connect with other children than it does typically developing children.

Impact of Filmmaking Groups on Student Learning

Filmmaking (video) groups can have both expected and unexpected outcomes. We discuss three benefits of filmmaking that we observed at the ASC—confidence, identity exploration, and academic skills.

Confidence

Filmmaking with friends helps build confidence. Children with autism have various strengths and many of their strengths are found within their special interests. So, pairing them with typically developing peers who have similar interests gives them an edge. Their typically developing peers who have similar interests are amazed by what children on the spectrum know or do with their focused interest, which can change a typically developing child's thinking regarding persons with autism.

This strategy can also help a child who does not do so well in other areas. For example, at the ASC a teacher was telling a parent that another child from the afternoon class was very excited about meeting her child from the morning class because her child was considered a legend from the videos he acted in over the course of the last two years. Often, when this particular child attended various functions at the ASC, other children would say, "*You are Tony, I recognize you from the Donut movies*." These newer children joining the group all seemed amazed and

impressed. According to this parent, it was the first time her child had experienced other children being impressed by something he had done. Her child had developed a reputation of being successful and he felt good about something he had done. After years of being rejected by peers and being told he was behind in school, that new approbation from peers and instructors was a welcome change for this child. The children also like to show their videos publicly on a YouTube site to friends and family. Young children especially love to watch their videos. To see some examples go to: http://www.youtube.com/user/AutComTV.

Identity Awareness for Children with Autism

Although identity awareness is not a main focus of the ASC, identity exploration is encouraged when it appears that children are not working cooperatively together as a team. Identity exploration involves discussing what it is like to have autism or to feel different. Even typically developing pre-teens and adolescents can understand a discussion about feeling inadequate. We have observed that sometimes classroom teachers do not discuss sensitive topics such as this because they may not have the knowledge or vocabulary to make all children in the class feel comfortable. However, it is important for teachers to remember that "all" children need their identities validated, not ignored. Children with or without autism should not feel ashamed about who they are. If we are afraid to talk about autism, children may feel as though it is shameful or something to hide. Sometimes children on the spectrum pretend they are not autistic, or their parents do not want to burden their children with a label. Teachers need to be cognizant of where children and parents stand on discussing the autism diagnosis with their children and work to help families make decisions on how to deal with identity issues associated with autism and autism spectrum disorders.

For pre-teen and teenagers, teachers at the ASC have found that children without autism are much more understanding, and are interested in another child if they know that the child has autism or Asperger syndrome. On the other hand, many parents do not want to burden their child with a "label" or have someone accentuate their child's differences. But, typically developing children like to understand where children's differences come from and have a vocabulary to talk about and understand those differences. Oftentimes children with autism are relieved when they can be open about their autism and other children demonstrate acceptance and even curiosity about who they are. This is an area that teachers may consider further navigating with parents and children. Teachers at the ASC find that talking with the parents directly and understanding their perspectives on this issue is the best way to navigate the topic when considering socialization strategies, but allow parents and children to make their own decisions about identity issues.

Academic Skills

The new Common Core Standards for English Language Arts and the more broad College and Career Readiness (CCR) Standards define the skills and conceptual understandings that students must demonstrate in grades 6 through 12 (Common Core State Standards Initiative, 2010). The Standards for writing stipulate that students should strengthen their writing by planning, revising, editing, and trying new approaches. More specifically, the Writing Standards for grade 6 require "writing narratives to develop real or imagined experiences or events using effective techniques, relevant descriptive details, and well-structured event sequences" (W.6.3). In addition, the Standards require the use of technology to produce and publish writing (W.6.6).

Teachers can use film groups to not only help children learn to be social, but also to help them learn to write, communicate, and speak. Children with autism write their own scripts along side their peers. When children write scripts and produce them through filmmaking, it not only targets Standards, it also targets all of the areas that children with autism usually need to improve upon including imagination, communication, perspective taking, theory of mind, and writing. Writing scripts is a great way to motivate children who usually don't like to write stories in a more formal classroom setting where they are overwhelmed with thinking about different parts of a story, the characters, the plot, the scenes out of context.

Children with autism also have to learn more about using technology, which is often one of their strengths. In filmmaking, they are learning productive ways to use technology to improve writing and communication skills, and they have a chance to use humor and visual thinking in their writing, which highlights some of their strengths. They also "play" in age appropriate ways (with props and costumes) using imagination and storytelling. In addition, they practice their acting skills and use their memory to learn lines for their video. The also learn to articulate and communicate as well as learn to provide impromptu lines in front of a camera. This helps them develop public speaking skills, and to talk in front of groups of people.

Socialization Skills

The parents of children with autism praise the teachers at the ASC because their children are learning technology, acting, writing, public speaking, and important socialization skills. Below is one parent's comment from a center-based evaluation.

> *Jacob's (teacher) strategic use of technology to reach kids is truly innovative. Don (child) gets exposed to each job in a typical filmmaking process (script writing, acting, filming, editing, and sound production) and in the process engages with all of the other students in the class during the making of each film. He looks forward to seeing the other kids each week and collaborating on the projects.*

There are several reasons why children with and without spectrum disorders can have an easier time interacting with each other in filmmaking groups. First, they are playing roles. No child is acting "normal" and they are playing a fictional character of their own making. Secondly, the types of activities involved in filmmaking make use of a child's strengths. Children with autism spectrum disorders are often less inhibited when it comes to acting. They can memorize lines and often act fairly well in these videos, which gives them the opportunity to experience success and a sense of pride in their accomplishments, while getting to know and learn how to be friends with other children. We observed that children on the spectrum liked to show their videos to various audiences and to talk about the process. They especially like to show their parents what they can do, and they demonstrate their skills to parents when teachers bring the children and their parents together for a movie premiere of each of their video sessions. In addition, the children invite family and friends to their film showing.

Parents at the ASC reported that the reason their children liked this socialization program and did not want to attend other social skills programs is because many of the more traditional programs focus too often on what children are doing wrong and how they need to change. The ASC filmmaking program emphasizes and accentuates their strengths. At the center, children without

autism learn along side children with autism as equals. Also, in other social skills programs, they felt that professionals did not pay enough attention to how typically developing children were treating children with autism in the context of inclusive settings, thereby putting all the burden on the children with autism to change.

Final Thoughts

Children on the spectrum face many challenges when it comes to socialization and the development of social skills. To help these children connect with their typically developing peers, we suggest that teachers use filmmaking. Filmmaking is an excellent method for teaching skills that can be easily used to accentuate the strengths, rather than weaknesses, of children with autism. This technique can allow children on the spectrum to have fun while making friends in a naturalistic and relaxed setting. Filmmaking can also easily engage the participation of peers, parents, and family in the learning process.

AUTHOR NOTES

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