Accommodating students with autism spectrum disorder in communication centers: The development of video modeling techniques

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Abstract

Every year, more students with Autism Spectrum Disorder (ASD) are applying and being accepted into universities (Hansen, 2011). Communication centers serve a diverse range of students whose particular needs vary. While current tutor methodology is an effective way of approaching traditional students' needs, students with ASD, and the tutors who work with them, require additional tools to provide necessary support services. To accommodate the needs of students with ASD, communication centers must develop the tools and training methods essential to students' success (Glennon, 2016). Video modeling has shown to be an effective tool, especially regarding students with ASD, for developing social and communicative skills through observational learning (Bellini & Akullian, 2007; Cihak, D., Fahrenkrog, C., Ayres, K. M., & Smith, C., 2010; Hayes et al., 2015; Mason, R., Rispoli, M., Ganz, J. B., Boles, M. B., & Orr, K., 2012). Limited research exists regarding how tutoring services at universities can support students with ASD. The services that communication centers offer provide a unique forum for the development and implementation of inclusive consulting techniques. This research proposal explores the current literature on the use of video modeling for skill based learning and discusses its application as an instrument for training communication center consultants and increasing public speaking proficiency for higher education students with ASD.
Keywords: communication centers, Autism Spectrum Disorder (ASD), consulting, video modeling

Over the last twenty years, institutions of higher education have experienced an increasing number of students with high functioning Autism Spectrum Disorder (ASD) (Hansen, 2011). This is, arguably, a result of the increase in child development screenings that support early diagnosis and treatment (Barnhill, 2014). ASD is classified as a developmental disorder that affects intelligence, social skills, communicative ability, behavior, sensory responses, and motor skills. These symptoms exist across a continuum that describe a range of low to high functioning autism depending on the severity each symptom effects. While each individual with ASD experiences the symptoms uniquely, hindrances towards social skills and communicative abilities are common amongst both high and low levels of function; specifically avoiding eye contact, neutral facial expressions or expressions that may be inappropriate, little to no gestures, and incongruent nonverbal expression (CDC, 2015). Higher education institutions currently have well-established disability support services designed to accommodate a variety of student needs, including students with ASD, but those services often do not extend into traditional student services such as those provided by communication tutoring centers (Hansen, 2011). Communication centers provide students with an environment to learn to improve

their communication skills, which in turn impacts their ability to communicate to an audience. Whether that be an audience be of one hundred, or an audience of one. Therefore, this research proposes the addition of tutoring techniques that accommodate the needs of students with ASD.

Currently, a multitude of research exists regarding how grade schools can help support students with ASD (Bellini, Peters, Benner, & Hopf, 2007; Hess, Morrier, Heflin, & Ivey, 2008; Kamps et al., 2015). However, limited research exists surrounding how universities can accommodate students with ASD (Mulder & Cashin, 2014), which is problematic due to the increasing number of students with ASD attending higher education institutions. Universities can provide support to students with ASD in three major domains: social support, independent living skills support, and academic support (Hansen, 2011). Peer tutoring is one method universities can employ to provide both academic and social support to students with ASD. Peer tutoring is defined as a type of intervention that consists of students working together to achieve a particular behavior or skill (Hott, Alresheed, & Henry, 2014). Peer tutoring can include: explaining or reading assignments, video modeling and discussing behaviors, or acting out skits to showcase various skills. Hott et al. (2014) synthesized research regarding the effectiveness of peer tutoring for children with ASD in the United States using percentage of non-overlapping data (PND). To calculate PND, researchers counted the number of treatment data points exceeding the highest baseline data point and then dividing this number by the total number of data points during the treatment phase (Hott et al., 2014). The PND scores ranged from 0% to 100% and a score less than 50% reflected unreliable treatment, and a score between 50%-70% reflected questionable effectiveness (Hott et al., 2014). Overall, the PND for peer tutoring interventions specifically addressing academic skills and performance was 90.41%, suggesting that it was a highly effective approach.

In sum, peer tutoring has been found to be efficacious in supporting younger students with ASD. However, more research is needed to examine the effectiveness of peer tutoring at the university level. Many universities already have some type of peer tutoring system in place, but limited research exists on what these peer tutoring systems are doing to help support students with ASD. Therefore, one area in which peer tutoring systems, such as communication centers, can help academically support students with ASD is through video modeling of public speaking skills with a peer tutor.

Video Modeling

Video modeling is the use of video recordings that provide a demonstration of a particular activity, skill, behavior, or task. Video modeling can be used as an observational learning technique for the development of a vast variety of targeted skills and behaviors (Bellini & Akullian, 2007; Mason et al., 2012; Odom, Collet-Klingenberg, Rogers, & Hatton, 2010). By no means is the use of video modeling a new technique for learning or advancing the development of a particular skill. The ever growing number and popularity of video tutorials available through social media websites like Youtube.com provide evidence of only a fraction of the current mainstream uses of video modeling. Video modeling is an established teaching technique that employs social learning through example based demonstrations to not only transfer directly applicable task information, but to also increase task performance ability and

self-efficacy (Bandura, 1997; Hoogerheide, Loyens, & Van Gog, 2016; Van Gog, Verveer, & Verveer, 2014).

Furthermore, video modeling is a technique that has shown to be an effective evidence based intervention for improving social communication based skills among individuals with ASD (Mason et al., 2012; Odom et al., 2010). Video modeling has shown to be an effective tool for aiding in the development of social communication skills and behaviors such as playing with others, engaging in hygienic behaviors, initiating conversations, and displaying appropriate emotions during social interactions. These skills are demonstrated using a video of a prerecorded model for students with ASD. This method has allowed for children and adolescents to effectively observe, practice, and learn targeted social and communicative behaviors. Additionally, the skills developed through video modeling have shown to be transferable, generalizable, and remain stable over time (Bellini & Akullian, 2007).

The National Professional Development Center on Autism Spectrum Disorders (NPDC-ASD) (2010) is a program funded by the Office of Special Education Programs in the US Department of Education. The NPDC-ASD has identified 27 evidence based practices that are effective tools for the professional development of individuals with ASD, including video modeling (Odom et al., 2010). The NPDC-ASD has made available a video modeling implementation module that provides an evidence-based framework for the development of targeted skills and behaviors. This research adapts the NPDC-ASD's module for use by communication centers to create a video modeling tool that can accommodate for the public speaking needs of students with ASD.

Developing a Public Speaking Video Modeling Tool

The first step in the process of developing a video modeling protocol is to identify the target skills and behaviors that the student can use to improve presentation skills and to define those skills clearly so that improvements in each area can be measured. Public speaking is a complex and dynamic process (Gayle, 2004). As a result, it is important to focus on the development of those skills that support the effective delivery of well organized information. In order to maximize the effectiveness of a video modeling protocol, this research proposes the use of a standardized speaking outline and depictions of effective delivery techniques (NPDC-ASD, 2010).

The suggested speaking outline contains the three primary components of a speech, the introduction, body of the speech, and conclusion. The elements of each component are clearly labeled on the outline, including transitions and nonverbal behavior cues (see appendix A for a sample outline). Delivery techniques such as pace, vocal variety, tone and expressiveness, eye contact, and gestures represent the primary social communicative skills that the symptoms of ASD hinder (CDC, 2015). While nonverbal cues can be added to a speaking outline, the integrating of delivery techniques is a dynamic process that can be best highlighted through observation.

The second step of developing a video modeling protocol is having access to the correct equipment needed to create and display videos (NPDC-ASD, 2010). Video recording, reviewing, and critiquing student presentations and speeches is a common practice in communication centers. Thus, centers often have access to the basic equipment necessary for creating demonstration videos. The basic equipment includes a video camera, which can be

almost any device that records high quality video, and a playback device which can be any device that has the ability to display a video such as a video monitor, television, or tablet. For example, a communication center could create their video modeling tool by both recording and playing back the demonstration video on an iPad, or other device with both a camera and a screen large enough clearly display the video. Consultants must also be familiar and comfortable with operating the equipment for use during a consultation.

Third, the targeted task and development of a plan for the content of the video must be addressed (NPDC-ASD, 2010). Using the speaking outline, create a scripted speech that provides an example of an informative, persuasive, or special occasion speech that clearly mirrors the content of the outline and provides distinctions between sections. Planning and creating a script, and video for each speech type would provide examples that align with public speaking course curriculum. The script should also include examples and depictions of appropriate speaking pace and vocal variety as well as eye contact and gesturing.

Next, the communication center records a video of a staff or faculty member presenting the prepared scripted speech (NPDC-ASD, 2010). The video should be shot in a location that is similar to the natural environment in which the student will be giving their speech. Once satisfied with the performance and quality of the video, the video can be edited to include subtitled prompts that identify sections of the speech, transition points, and delivery based nonverbal cues. Portions of the video can also be edited into isolated sections that portray only the introduction, body, or conclusion of the speech for direct reference and repeated viewing. When completed, the video can be shown in an area that the student can both watch the video and practice the presentation skills depicted.

Implementing a Video Modeling Protocol

The employment of a public speaking video modeling program within a communication center would require some additional consultant training but effectively using the video modeling protocol is in line with current consultation methodology. When students visit a communication center, consultants assess the student's current needs and abilities and then develop an agenda for the consultation in an effort to best serve the student. While assessing the student, the consultant is establishing a baseline of student ability to determine which skills a consultant should focus on. For example, in cases where the student is beginning to develop a speech on a given topic, the consultant may engage in guided brainstorming or open-ended probing questions to help the student explore their topic. This method not only helps the students' immediate needs but also helps the student develop critical thinking and organizational skills. When working on delivery techniques with an ASD student, consultants would gather baseline information by observing a practice delivery and determining which elements of their delivery skills should be targeted and developed into goals that would be highlighted in the video model.

Once a baseline of ability has been determined, and performance goals have been established consultants then track the progress of the development of the delivery techniques that are depicted in the video model. Much like traditional students, students with ASD may require additional consultations to aid in the development of public speaking skills. Repeated viewings of the video model, and multiple practice sessions can have positive impact on the

development of the skills modeled. As a result, consultants will be better able to monitor student progress overtime. By keeping a record of student progress by using a Goal Attainment Scale (Ruble, McGrew, & Toland, 2012), consultants can determine which skills they should emphasize during recurring consultations and communication centers can measure the effectiveness of their protocol (NPDC-ASD, 2010). Goal Attainment scales provide students and consultants with an assessment and evaluation tool that describes the targeted public speaking behaviors and the students level of improvement towards those goals (Ruble et al., 2012). This proposal suggests that communication centers form a relationship with their university's disability support services to extend center services and determine the best practices for maintaining student progress records.

Discussion and Implications

No two students with ASD are exactly alike which is why it is imperative that universities appreciate and understand these differences. Therefore, universities must work to address these needs in order to ensure students have the necessary supports to achieve success. Peer tutoring services, such as a communication centers, can relatively easily adopt current tutor methodology to best support students with ASD. Students with ASD may experience difficulty with social communication skills that are related to public speaking delivery techniques such as eye contact, gestures, pace, vocal variety, tone and expressiveness (CDC, 2015). Consequently, centers must be prepared to work with students on these particular skills. One effective way to teach and practice these skills is through video modeling. Video modeling allows individuals to observe tasks and skills to further develop those skills (Mason et al., 2012). As a result, this technique has the potential to assist higher education students with ASD in increasing public speaking proficiency.

Centers should be continuously striving to develop and utilize inclusive tutoring techniques to accommodate the diverse needs of the current student population, and video modeling is one way to achieve that goal. By providing video models of effective speaking skills and a safe place to practice, communication centers can increase their scope of empowering clients. Once established, students with ASD will be able to visit communication centers, like traditional students, and do not have to solely rely on the support provided by the disability support resources office. Not only will this tool benefit students with ASD, it also will significantly benefit consultants working with these students. It will aid consultants in learning to interact with more diverse clients and assist them in gaining appreciation for new learning styles and challenges. This will also help consultants increase their knowledge regarding ASD. Overall, communication centers who employ video modeling when working with students with ASD will help develop more empowered speakers and a more diversely trained staff.

Limitations and Future Research

The primary limitation of this research proposal is the lack of current research and established protocols for communication centers to provide inclusive accommodations for students with ASD. While the proposed video modeling protocol is employing an established evidence-based learning practice for students with ASD, adapting this technique for improving their public speaking skills has not previously been tested. A secondary limitation of this research proposal is that all individuals with

ASD are different, and it is likely that multiple iterations of the video modeling process will need to take place to fit the multiple expressions of ASD. If a video modeling approach can been shown to be effective in the context of a communication center, and its student services, the center will be better able to evaluate students with ASD to better understand their specific needs, and develop a customized plan for this approach. This proposal provides an entirely new avenue of future research for universities, their communication centers, and disability support services.

This research proposal seeks to endorse the steps that communication centers can take to increase inclusive practices and provide services that accommodate for a broader range of student needs. Currently, an increasing number of students with ASD are attending institutions of higher education. As a result, institutions of higher education and their tutoring centers should be prepared to best accommodate and support these students. Video modeling of public speaking skills provides communication centers with a unique opportunity to assist students with ASD in developing their public speaking skills, and to be on the forefront of this specific area of research and service.

Appendix

Speech Outline

Topic:
Purpose:
INTRODUCTON (Start speaking here)
-Attention Getter:
-Self/Topic Intro: (Name/Topic)
-Statement of Purpose: "By the end of this speech you should….."
-Thesis Statement/Central Idea:
-Relevance (why do we care about this topic):
-Preview of Main Points:
I.
II.
III.

-Transition: To begin…/for starters…

BODY
-Main Point I:
    -Division A:
    -Division B:

-Transition/Internal Review: "Now that…move on to…"

-Main Point II:
    -Division A:
    -Division B:

-Transition/Internal Review: "Now that…move on to…"

-Main Point III:
    -Division A:
    -Division B:

CONCLUSION
-Review Statement of Purpose: "After hearing this speech, you should…."
-Review Thesis/Central Idea:
-Review Main Points:
I.
II.
III.

-Closure:

References

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Barnhill, G. P. (2014) Supporting students with asperger syndrome on college campuses: Current practices. *Focus on Autism and Other Developmental Disabilities*, 31(1), 3-15. doi:10.1177/1088357614523121

Bellini, S., & Akullian, J. (2007). A meta-analysis of video modeling and video self-modeling interventions for children and adolescents with autism spectrum disorders. *Exceptional Children*, 73(3), 264-287. doi:10.1177/001440290707300301

Bellini, S., Peters, J. K., Benner, L., & Hopf, A. (2007). A meta-analysis of school-based social skills interventions for children with autism spectrum disorders. *Remedial and Special Education*, 28(3), 153-162. doi:10.1177/07419325070280030401

CDC. (2015). Autism Spectrum Disorder. Retrieved from https://www.cdc.gov/ncbddd/autism/index.html

Cihak, D., Fahrenkrog, C., Ayres, K. M., & Smith, C. (2010). The use of video modeling via a video iPod and a system of least prompts to improve transitional behaviors for students with autism spectrum disorders in the general education classroom. *Journal of Positive Behavior Interventions*, 12(2), 103-115. doi:10.1177/1098300709332346

Gayle, B. M. (2004). Transformations in a civil discourse public speaking class: Speakers' and listeners' attitude change: Scholarship of teaching and learning. *Communication Education*, 53(2), 174-184. doi:10.1080/03634520410001682438

Glennon, T. J. (2016). Survey of college personnel: Preparedness to serve students with autism spectrum disorder. *The American Journal of Occupational Therapy: Official Publication of the American Occupational Therapy Association*, *70*(2), 1-6. doi:10.5014/ajot.2016.017921

Hansen, R. (2011). The trifecta of student support services: Helping students with autism spectrum disorders succeed in postsecondary education. *College and University*, 86(4), 37.

Hayes, G. R., Custodio, V. E., Haimson, O. L., Nguyen, K., Ringland, K. E., Ulgado, R. R., Waterhouse, A., & Weiner, R. (2015). Mobile video modeling for employment interviews for individuals with autism. *Journal of Vocational Rehabilitation*, 43(3), 275-287. doi:10.3233/JVR-150775

Hess, K. L., Morrier, M. J., Heflin, L. J., & Ivey, M. L. (2008). Autism treatment survey: Services received by children with autism spectrum disorders in public school classrooms. *Journal of Autism and Developmental Disorders*, 38(5), 961-971. doi:10.1007/s10803-007-0470-5

Hoogerheide, V., Loyens, S. M. M., & Van Gog, T. (2016). Learning from video modeling examples: Does gender matter? *Instructional Science*, 44(1), 69-86. doi:10.1007/s11251-015-9360-y

Hott, B. L., Alresheed, F. M., & Henry, H. R. (2014). Peer tutoring interventions for student with autism spectrum disorders: A meta - synthesis. *The Journal of Special Education and Rehabilitation*, 15(1/2), 109.

Kamps, D., Thiemann-Bourque, K., Heitzman-Powell, L., Schwartz, I., Rosenberg, N., Mason, R., & Cox, S. (2015). A comprehensive peer network intervention to improve social communication of children with autism spectrum disorders: A randomized trial in kindergarten and first grade. *Journal of Autism and Developmental Disorders*, 45(6), 1809-1824. doi:10.1007/s10803-014-2340-2

Mason, R. A., Rispoli, M., Ganz, J. B., Boles, M. B., & Orr, K. (2012). Effects of video modeling on communicative social skills of college students with asperger syndrome. *Developmental Neurorehabilitation*, 15(6), 425-434. doi:10.3109/17518423.2012.704530

Mulder, A. M., & Cashin, A. (2014). The need to support students with autism at university. *Issues in Mental Health Nursing*, 35(9), 664-671

NPDC-ASD (2010, October). Module: Video modeling. Retrieved from http://autismpdc.fpg.unc.edu/evidence-based-practices

Odom, S. L., Collet-Klingenberg, L., Rogers, S. J., & Hatton, D. D. (2010). Evidence-based practices in interventions for children and youth with autism spectrum disorders. *Preventing School Failure: Alternative Education for Children and Youth*, 54(4), 275-282. doi:10.1080/10459881003785506

Ruble, L., McGrew, J. H., & Toland, M. D. (2012). Goal attainment scaling as an outcome measure in randomized controlled trials of psychosocial interventions in autism. *Journal of Autism and Developmental Disorders*, 42(9), 1974-1983. doi:10.1007/s10803-012-1446-7

Van Gog, T., Verveer, I., & Verveer, L. (2014). Learning from video modeling examples: Effects of seeing the human model's face. *Computers & Education*, 72, 323. doi:10.1016/j.compedu.2013.12.00