SPECIAL EDUCATION RESEARCH, POLICY & PRACTICE

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The Effects of Visual Cues, Prompting, and Feedback within Activity Schedules on Increasing Cooperation between Pairs of Children with Autism Spectrum Disorder

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Abstract

Activity schedules are visual support strategies that use visual cues, such as photographs and/or written words, to teach a learner to engage in a sequence of tasks or activities independently. Until recently, research on activity schedules has involved one schedule being followed by one individual. In order to facilitate cooperation between two individuals to complete one task, and to increase engagement between peers, cooperative activity schedules are being introduced as interventions in educating students with autism. A multiple baseline design across three activities was used to assess the effects of including an instructional package consisting of visual cues, prompting, and feedback to increase cooperation within an activity schedule between two students with autism spectrum disorder (ASD). This design was replicated across two pairs of participants. Baseline data indicated a lack of cooperation across both of the pairs. Following intervention, an increase in cooperation amongst both of the pairs was demonstrated. All prompting and reinforcement systems were effectively faded out for both pairs, and 2-week and 1-month follow up probes indicated cooperation maintained in the presence of the visual cue.

Cooperative Activity Schedules in Children with Autism Spectrum Disorder

Children diagnosed with autism spectrum disorder (ASD) often present with a range of social impairments that make it difficult to engage in cooperative behavior with others (Liebal, Colombi, Rogers, Tomasello, & Wareken, 2008). These include deficits in imitation skills (Rogers & Pennington, 1991; Griffith Pennington, Whener, & Rogers,1999; Sigman & Ungerer, 1984; Bryson & Smith, 1998), the use of joint attention (Jones & Carr, 2004; Bono, Daley, & Sigman, 2004; Kasari, Sigman, Yirmiya, 1990; Sigman & Mundy, 1989), and initiating bids for joint attention (Baron-Cohen, 1987). Imitation plays a fundamental role in the development of coordinated acts (Liebal et al., 2009). Imitation skills provide children with visual or verbal cues on how to socially respond in various situations, in relation to peers or others responding within the same context. Joint attention is the shared focus of two individuals on an object. It is achieved through eye gazing, pointing, or other verbal or non-verbal acts (Bono et al., 2004).

Impairments in cooperation skills in children with ASD may in part be due to deficits in imitation and joint attention along with their inability to share intentions and experiences with others (Tomasello, Carpenter, Behne, & Moll, 2005).

Similar to joint attention, cooperation involves activities with shared goals and intentions (Liebal et al. 2008). Shared cooperative activities have three main features that consist of cooperating partners who are 1) mutually responsive to each other, 2) hold a shared goal, and 3) mutually support each other in their roles in order to achieve that shared goal (Bratman, 1992). Individuals with ASD tend to demonstrate difficulty engaging in cooperative behavior, either in play or during social activities, thus leading to difficulties within group teaching contexts (Spriggs Gast, & Ayres, 2007). Cooperation skills are defined as two students working together to complete a task. This may involve turn taking and sharing responsibilities of task completion (Betz, Higbee, & Reagon, 2008). Studies have demonstrated cooperative behavior between typical toddlers between the ages of 18 and 24 months (Warneken, Chen, & Tomasello, 2006) and between the ages of two and three in dyads with their respective peers (Ashley & Tomasello, 1998). The results of the above studies indicate that even before their second birthday, typically developing toddlers are capable of forming a shared goal and then coordinating their behavior and attention with an adult in pursuit of this common purpose (Warneken et al., 2006).

Deficits in cooperative skills in individuals with ASD can contribute to dependence on caregivers, teachers, and supervising adults to initiate a task or activity (Copeland & Hughes, 2000). Many intervention packages rely heavily on verbal instructions, modeling, and gestures. These stimulus prompts are often associated with reinforcement during teaching, and might, thereby, acquire stimulus control over the target responses (MacDuff, Krantz, &, McClannahan, 1993). Consequently, learners with ASD may become prompt dependent. That is, they fail to perform target responses independently and rely on interaction with the instructor to complete the skill and the presence of the stimulus prompts. For example, an individual with autism might learn a complex behavior chain, such as playing with toys, completing vocational tasks, or engaging in functional skills, yet often fail to exhibit these responses independent of prompting procedures (Billingsley & Romer, 1983; Sheinkopf, 2005). Thus, increasing independence in individuals with ASD is one of the key elements in creating an effective curriculum. In order to facilitate increased independence in both task completion and social interactions, an activity schedule may be implemented. Research has demonstrated that activity schedules have been an effective tool in increasing on task behavior and thereby independence (McClannahan & Krantz, 1999).

An activity schedule is a visual support strategy that uses visual cues, such as photographs and/or written words, to facilitate following a sequence of tasks or activities independently (McClannahan & Krantz, 1999). Visual stimuli can be presented in a variety of forms. Photographs (MacDuff et al. 1993; Jolly, Test, & Spooner, 1993), pictures and line drawings (Frank, Wacker, Berg, & McMahon, 1985; Pierce & Schriebman, 1994), and symbols and words (Stromer, Mackay, McVay, & Fowler, 1998) are examples of visual stimuli that can be used within a schedule to prompt a correct response. The visual component of the activity schedule is likely a critical component contributing to its effectiveness across situations. The visual components of activity schedules provide communication as to what and how much work should be completed, and, often, for how long a duration (Bryan & Gast, 2000). The visual component also provides a structured teaching environment which makes clear expectations and decreases

the reliance on continuous adult prompting (Schopler, Hearsay, & Mesibov 1995). When visual cues are used as a primary form of instruction and communication, an increase in skill acquisition in students with ASD has been noted (Shopler et al., 1995).

Additionally, individuals with ASD often have difficulty initiating the next step in a complex chain of behavior. As an individual learns to brush his teeth, he may not be able to complete the steps consecutively without a prompt to initiate each specific skill within the chain (MacDuff, et al. 1993). For example, the individual may not put the toothbrush in his mouth after putting the toothpaste on the brush. Activity schedules mediate transitions between activities by using visual prompts to occasion specific behavior chains. As a result, an activity schedule can promote independence in a sequence of multiple activities, such as a self-care morning routine.

Activity Schedules and Cooperation

A specific area lacking research is the application of activity schedules to increase cooperation between students with autism and their peers. As the prevalence of ASD in children rises, the number of individuals requiring long-term services will also continue to increase (Center for Disease Control and Prevention, 2012). As the projected costs of treating an individual with ASD continue to rise as the cost of living increases yearly, the need for cost-effective interventions that require less direct staff intervention to service larger numbers of clients is an immediate priority (White, E., Hoffman, B., Hoch, H., & Taylor, B., 2011). Students with ASD have difficulty functioning within group settings due to a myriad of reasons, including behavioral concerns when in larger settings (White, et al. 2011) and, therefore, only participate in programs with 1:1 student-teacher ratios (Harris & Handleman, 2006). In order to make group instruction more efficient and worthwhile, individuals with ASD would require more independence in schedule following and transitioning between activities (White et al. 2011).

When using activity schedules, students with ASD typically follow individualized schedules that target the behavior of one individual at a time.   Research that has reviewed activity schedules and social interactions jointly has typically involved one individual with autism following an activity that prompts interactions with a partner who is not following an activity schedule, but is the recipient of the prompted interaction, such as that of a conversation partner (Betz, et al. 2008). In order to increase the efficiency of the technology of activity schedules, the overall scope should be broadened to include targeting the behavior of more than one individual at a time.

Because students with ASD have marked impairments in social skills, a cooperative activity schedule provides the context to teach social skills, such as social interactions, in addition to the task being targeted for completion. A cooperative activity schedule has been shown to incorporate the addition of prompting peer engagement in activities, turn taking, and cooperative play (Betz, et al. 2008). These activities are pertinent to social skill development and are often neglected in classrooms due to the emphasis of academic programs within a student's curriculum. Cooperation within activity schedules may lead to a decrease in reliance on adult prompts for both activity completion and social interaction, as well as a decrease in the total duration required to complete tasks. It could also decrease the instructional support needed within the classroom setting (White, et al. 2011). In this study, a cooperative activity schedule

would require two students to work together to complete one task on one schedule that could be otherwise completed alone, but would provide opportunities for students to socially interact.

Research on cooperation in activity schedules has focused on teaching pairs of students to work towards one terminal end goal through cooperative schedules, but has highlighted different aspects of peer interactions. Cooperative schedules have successfully demonstrated an increase in peer engagement for students with ASD (Betz, et al. 2008) and more recently, increased collaborative work in completing vocational tasks (White, et al. 2011).

Betz, Higbee, & Reagon (2008) focused on teaching preschool students with ASD to follow joint activity schedules that cued both individuals to engage in interactive games with each other. During baseline, the two children were asked to go play. Specific board games were already selected and no activity schedules were present. During teaching, a joint activity schedule was present. The results indicated low levels of engagement during baseline, which, following intervention, reached or surpassed criteria, and were maintained across the maintenance phase. Overall, joint activity schedules were effective at increasing peer engagement across all three dyads.

The second study by White et al. (2011) that specifically looked at joint activity schedules also demonstrated success. The tasks selected for this study included teaching three different adapted living skills. Baseline included completing the task without prompts, reinforcers, or error corrections. The session ended when the task was completed or when three 1-minute intervals of non-engagement occurred. Intervention consisted of teaching and probe sessions. Teaching sessions incorporated prompting the participants to complete only their designated portion of the behavior chain. During probe sessions, participants were asked to complete the tasks. The results indicated that all three groups were able to meet criterion to complete a single activity schedule together. Overall, participants cooperatively worked together on one activity schedule to complete tasks. The key factor in both of these studies is that selected participants were able to fluently follow independent activity schedules, and the goal was to increase cooperative behavior within their dyad.

These studies are important for a number of reasons. Due to increased difficulty children with autism have with social interactions (Sheinkopf, 2005), using activity schedules to promote peer engagement, cooperation during tasks, and cooperative play amongst children is a new area of research to be explored. As the results indicate, following independent schedules may facilitate the mastery of two individuals jointly following a schedule (White, et al. 2011). It should also be noted that following an activity schedule cooperatively is a distinct skill compare with following one independently (Betz, et al. 2008; White, et al. 2011). Currently, there is a need to replicate these studies in order to support and build on these findings. The research question that was investigated in this study was: Do activity schedules with embedded cues for cooperation increase cooperative behavior in students with ASD? This study examined the effects of visual cues, prompting, and feedback within activity schedules on increasing cooperation between pairs of children with autism.

Method

Participants
Participants included four children diagnosed with ASD between the ages of 9 and 14 years who were enrolled in a special education school that utilizes the principles of applied behavior analysis. The first pair included a fifteen-year old male, Landon, and a fourteen- year old female, Alana. The second pair included a 9 year- old male, Dennis, and 10- year old male, Joey. Participants were selected based on their abilities to independently and accurately follow picture activity schedules and their results from the Vineland Adapted Behavior Scale. All participants were diagnosed with autism as toddlers by medical physicians according to DSM-IV (2000) criteria. All participants exhibited deficits in language, socialization, adapted living, vocational, and cooperation skills.

Setting
All sessions were conducted in the participants' school building (a special education school for children diagnosed with ASD), either in the classroom or the school kitchen, depending on the activity being targeted. Sessions lasted approximately 20 minutes in duration and occurred five times per week.

Materials
Cooperative Activity Schedules. Activity schedules for both pre-training and intervention sessions were designed based on participant need. All materials necessary to complete the designated vocational tasks were located within the work center (e.g., spray bottle, rags). Activity schedules were created with word descriptions of the activity in list format (e.g., replace the staples). Each participant was assigned to three different activities per dyad group, which included cleaning the office, cleaning the kitchen, and putting away laundry. Participants had no prior experience with the specified vocational tasks prior to the start of the study. All activity schedules were printed on 8-inch by 5-inch, white laminated paper. Times new roman font was used consistently throughout the schedules, with size 36 font for the student's name, followed by size 24 font for the steps to each activity. All tokens were round, blue poker chips, 1.5 inches in diameter. A Sony Handycam 16 gigabyte camera with 3.3 pixels was used to video record all sessions throughout the study.

Vineland Behavior Adaptive Scales. The Vineland Adaptive Behavior Scales, 2nd Edition (VABS-2; Sparrow, Cicchetti, & Balla, 2005) provides a comprehensive assessment of typical performance of the day-to-day activities required for personal or social sufficiency as perceived by the individual(s) completing the form. Community-University Partnership evaluated the reliability and validly of the Vineland-II (CUP, 2011). The overall Vineland is broken down into five domains. These domains include communication, daily living skills, socialization, motor skills, and maladaptive behavior domains. The domains focused on in this study include communication, socialization, and daily living skills.

Dependent Variables and Measurement Procedures
Schedule Following. Data were collected on the percentage of trials with correct responding across schedule-following components throughout all phases. Correct responding was defined as a participant checking the schedule, crossing off the next step with a dry erase marker prior to completing the step, completing the first or next consecutive step in the activity schedule as

outlined by the listed photographic schedule accurately, and returning to the schedule to see the next step not checked off. Each step was scored separately, although all steps must be completed independently and accurately for the trial to be scored as correct. Participants were directly observed, and data were collected by scoring a plus or minus on the data sheet during probe sessions. Probe sessions were conducted every third session throughout the study.

Percentage of Cooperative Steps Completed. Data were collected on the percentage of opportunities in which cooperation with a peer occurred throughout all phases. Five opportunities for cooperation were programmed into the schedule during each session for each dyad. Cooperation was defined as two students working together to complete one task on one schedule. These tasks could be completed alone but provided an opportunity for students to interact with each other. For cooperation to be scored as correct, an interaction between the two participants to complete one portion of the task occurred, which included one participant vocally requesting assistance from his/her peer, and then both participants completing the next step within the chain together in its entirety. Data were collected on individual steps, but all steps had to be independent and accurate for an opportunity of cooperation to have successfully occurred. Following cooperation, the participant who asked for help thanked the second participant for helping, which indicated the task was completed and that the participant could return to his/her own schedule. Data were scored on whether the second participant returned to his/her original task (schedule). Throughout schedule following, data were also collected on accuracy of the participants completing the schedule of tasks. Participants were directly observed and data were collected during probe sessions by scoring a plus or minus on the data sheet.

Frequency of Request for Help. Data were collected on the frequency of prompted requests throughout the activity schedule for each peer. Data were also collected on spontaneous requests for help or assistance that occurred throughout sessions in the absence of the picture cue. Participants were prompted to respond by saying "thank you" following completion of helping to indicate they were finished and could return to their own schedule. Participants were directly observed, and data were collected on a frequency of prompted and independent "thank you" responses during probe sessions.

Experimental Design and IOA
A multiple-baseline-across-activities design was used to evaluate the effects of an instructional package which included a visual cue, prompting, and feedback, on increasing cooperative behavior during tasks between two children with ASD. This design was replicated across two participant dyads. Inter-observer agreement (IOA) data were obtained for 30% of all sessions conducted across all conditions by a second trained observer. Agreement was calculated by dividing the number of agreements by the total number of agreements plus disagreements and multiplying by 100. An agreement was defined when both observers scored a response as either correct or incorrect. IOA data averaged 97% agreement for schedule following and ranged between 94% and 100%, 100% agreement for opportunities when cooperation occurred, and 100% agreement for frequency of spontaneous requests for help across baseline and training.

Procedural integrity was obtained for 30% of sessions as well. Procedural integrity was calculated by examining the total percentage of opportunities in which the procedure was correctly implemented across two observers. Data were collected on the following components: use of the correct schedule, use of the correct materials, correct placement of materials, correct

verbal instruction to begin the activity, correct dyad pairing, proper instruction and prompt fading, and correct reinforcement schedule. Procedural integrity data averaged 100% for use of the correct schedule, 100% for use of the correct materials, 100% for correct placement of materials, 97% correct verbal instruction to begin the activity with a range of 93% and 100%, 100% for correct dyad pairing, 94% for proper instruction and prompt fading with a range of 91% to 100%, and 97% for correct distribution of the reinforcer with a range of 94% to 100% across both baseline and training.

Social Validity

To assess social validity, classroom teachers of the participants were provided an anonymous questionnaire to complete prior to the start of the study, and following the completion of the study. The questionnaire included questions to assess: (a) if the overall outcome of the study is meaningful to the participants' lives, (b) the overall social acceptability of the treatment, (c) the teacher's satisfaction with the amount of helping going on within the classroom, and (d) the feasibility of implementation for teachers in their own classroom. Participants were asked to answer questions using a Likert scale, ranging from one to five, with one equaling strongly disagree, two being disagree, three being neither agree or disagree, four being agree, and five strongly agree. Additionally, normative data were collected on typically developing individuals of the same age as the participants (9-14 years of age) to determine how much helping is standard when completing such tasks.

To assess social validity, six videos were shown to four observers who were naïve to the experimental conditions. Viewers were teachers at the school the participants attended but were not the participants' teachers. Videos consisted of both baseline and intervention clips. Videos provided an array of clips, showing cooperation, no cooperation, and varying amounts of cooperation. Viewers that were not involved in the study were asked to score cooperation throughout the clips using a Likert scale, ranging from one to five, one equaling not cooperative, two being not very cooperative, three being neither cooperative or not cooperative, four being cooperative, and five being very cooperative.

Procedure

Task Selection. Tasks were selected through interviews of the participant's teacher, direct observation, and the Vineland Adapted Behavior Scales. The tasks selected were based on total number of steps to completion and total duration of time required for task completion; all tasks were similar in duration. For example, cleaning a table and making the bed are within the same relative duration for completion and may thus be selected versus cleaning an entire room and making the bed, which vary widely in the duration of time required to complete the task. The duration of completion for these tasks was assessed through a competent performer. An example of a potential schedule for cleaning the kitchen includes 10 steps to completion (see Figure 1 for example of cleaning the kitchen schedule).

Figure 1. Steps contained within cleaning the kitchen

```
                              Alana

                _____       Wipe Stove
                _____       Clean Table
                _____       Straighten Chairs
                _____       Wash Dishes
                _____       Clean Cabinets
                _____       Sort Utensils
                _____       Wipe Counters
                _____       Sweep Floor
                _____       Wipe Microwave
```

Pre-training. Prior to the study, participants were trained to follow activity schedules to complete three different tasks independently. The activity schedules consisted of cleaning the kitchen, organizing the office, or folding laundry.

Graduated guidance with spatial fading was used to manually prompt activity schedule following responses and task completion. Manual prompts were always delivered from behind the participant. An unspecified prompt fading procedure was implemented, where upon moment-to-moment decisions about prompting and fading were made based on the participant's demonstration of the skill. Fading started by moving from a full physical prompt to a less intrusive prompt, until independence was achieved. Initially, hand-over-hand manual guidance was provided, with the experimenter first guiding the participants' hands, then elbows, and then upper arm (White, et al. 2011). Following changing the location of the prompt, the experimenter shadowed the participant. The experimenter followed the participants' movement, without touching them. The distance of shadowing was increased from one to three meters between the participant and the experimenter (White, et al., 2011).

Participants were prompted to check the step off in the activity schedule with a dry erase marker prior to completing the step. No verbal prompting was used and teaching continued until participants independently achieved 100% accuracy in responding across two consecutive sessions with the experimenter three meters away. Tokens were provided contingent on correctly completing a step of the chain, and were exchanged for other primary or secondary reinforcers (e.g., candy, computer games) following the completion of the task. The experimenter approached the participants' and showed them the actual delivery of the token in their respective bags. Participants exchanged tokens for their self-selected reinforcers following completion of the activity schedule. For safety purposes, the occurrence of maladaptive behavior would have resulted in the termination of the session, however, this did not occur for either dyad group throughout the study. This procedure was replicated across all three activities selected for each participant during the skill assessment.

Baseline. During baseline, both participants in a dyad were present, were provided with sufficient materials to complete a task in parallel and could, at any time, work cooperatively.

Participants were initially instructed to follow one presented activity schedule acquired during the pre-training phase (See Figure 2 for baseline example).

Joey   Dennis

__Take clothes out of dryer   __Empty and throw away
   And put in hamper   dryer lint

__Turn clothes right side out   __Sort clothes by type

__Fold underwear   __Pair and fold socks

__Fold and hang shirts   __Fold and hang pants

__Put away underwear   __Put away folded shirts

__Put away socks   __Put away folded pants

__Put away hung pants   __Put away hamper and
   and shirts   extra hangers

Figure 2. Steps contained within baseline schedule for doing laundry.

Both participants individually demonstrated mastery (100% independent accurate responding) of the selected tasks prior to beginning baseline measures. Participants were set up at one work station and had access to one schedule and the needed task materials. Throughout the baseline condition, participants were presented with the instruction, "Let's work together to complete (specific activity)."   No prompting, error correction, or reinforcement was provided during baseline. Visual cues to prompt cooperation were not provided in the schedule. Sessions were scored for percentage of independent and accurate responding, percentage of cooperation between the two peers, and frequency of requests for help. If both participants had stopped working for a duration longer than 3 minutes, the activity would have been ended. This did not occur for either participant dyad group.

Intervention. The cooperative schedule incorporated visual cues for cooperation embedded throughout the activity schedule with their assigned peer on the same task they previously had acquired individually during pre-training (See Figure 3 for schedule with opportunities of cooperation).
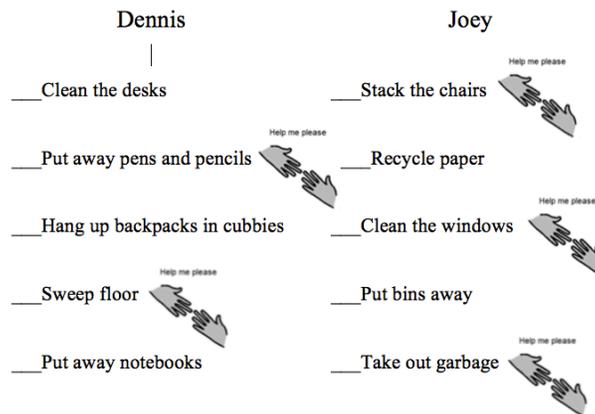
Figure 3. Steps contained within cooperation schedule for cleaning the office.

The sequential placement of the give/take picture was consistent throughout the schedule. In each session, five cues for cooperation were embedded into the schedule for each activity for each dyad pair. These opportunities were indicated through a give/take picture, which depicted a hand placing an item into another hand. The picture indicated the need for the other participant to ask for help. Participants stopped their current activity and were vocally prompted, "I need help," or "Can you help me?" following sight of the picture depicted in the schedule. All vocal prompts were faded out systematically until participants were vocally requesting for help following just the sight of the picture. No gestures to the picture were required throughout initial training, as the picture aligned with the task precisely. For example, a participant (1) checked the schedule, (2) crossed off the step, (3) completed the actual step, and (4) returned to the schedule. For specific examples of cooperation, a participant (1) checked the schedule, (2) crossed off the step, (3) vocally asked the other participant for help, (4) completed the step with the other participant, and (5) returned to the schedule. Manual guidance was used to facilitate helping, if the participant that was the recipient of the request failed to help after three seconds of the request. Prompting and fading procedures were the same as in the pre-teaching condition.

During teaching sessions, one participant was asked to begin the activity schedule and immediately guided to check off the first item indicated. For each selected activity, five opportunities for cooperation were identified. For example, if cleaning the kitchen was the selected target in the 10-step task analysis, five opportunities to request for assistance from the assigned peer were identified through a give/take picture icon. These opportunities included one participant completing the step in the activity schedule, followed by requesting help when the give/take picture was present, and the two participants completed the step cooperatively. The participant who asked for help returned to the schedule and crossed out and completed the next step in the activity schedule, while the other participant returned to the step he was completing before helping his peer (See figure 4 for schedule example).

Participant A	Participant B
Clean the stove.	
	Clean the table.
	Ask for help.
Helps clean the table.	
Returns to cleaning the stove.	
	Straighten the chairs.
Wash the dishes/utensils.	
Ask for help.	
	Helps dry the dishes/utensils.
	Returns to straightening chairs.
Cleans the cabinets.	
	Sorts and puts away the dishes/utensils.
	Ask for help.

Figure 4. Steps contained within an activity schedule for cleaning the kitchen

The order of which participant started the activity schedule was randomized so that the same participant did not start the activity schedule daily. Manual guidance was used as needed to prevent any errors.

Tokens were provided contingent on correctly completing a cooperation opportunity, defined as requesting for help and the peer completing the next step in the schedule, and were cashed in following the completion of the task. The experimenter went over to the participant and delivered the tokens in their respective bags on their workstation. Participants later exchanged their tokens for their self-selected reinforcers following completion of the activity schedule.

Probe sessions. Probe sessions were conducted after every third teaching session and followed the exact same contingencies as in baseline, except the give/take picture was embedded within the activity schedule. Teaching sessions were terminated once mastery criteria of 95% independent and accurate responding was achieved. All subsequent sessions were probe sessions and a proximity fading procedure was implemented. The fading procedure involved increasing the distance between the experimenter and the participant in 1-meter increments (beginning with immediately behind the participant and ending across the room from the participant) following each probe session at 95% independent and accurate responding.

Generalization Sessions. Generalization sessions were conducted to assess if cooperation would occur with a novel peer, in different settings, and with different activities. Participants were presented with a novel activity with a novel partner in a novel setting and assessed to see if generalization occurred from the original peer, setting and activity. During generalization sessions "help" cues were embedded throughout the schedule. Additionally, baseline probes

were conducted every 6th teaching session to assess if cooperation occurred when the give/take picture was removed from the activity schedule.

Results

Pre-training

The results of pre-training demonstrated steady acquisition of all three tasks by all four participants (See Figures 5 and 6). Figures 5 and 6 depict the acquisition rate, which ranges from 4 to 7 sessions for all participants to reach mastery.
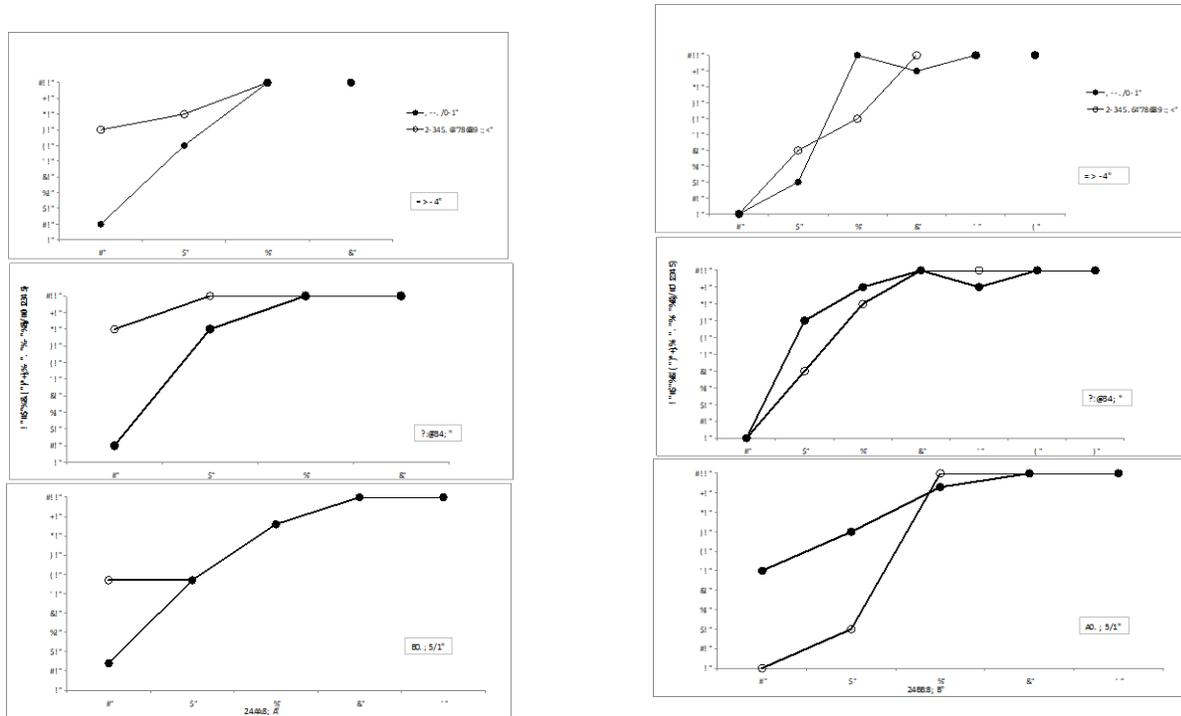
Figure 5. Line graph showing percentage of schedule following and percentage of accuracy for Landon (left) and Alana (right) during pre-training. Closed circles indicate percentage of accurately completing the tasks independently within the schedule, and open circles indicate accuracy of following the schedule in sequential order.
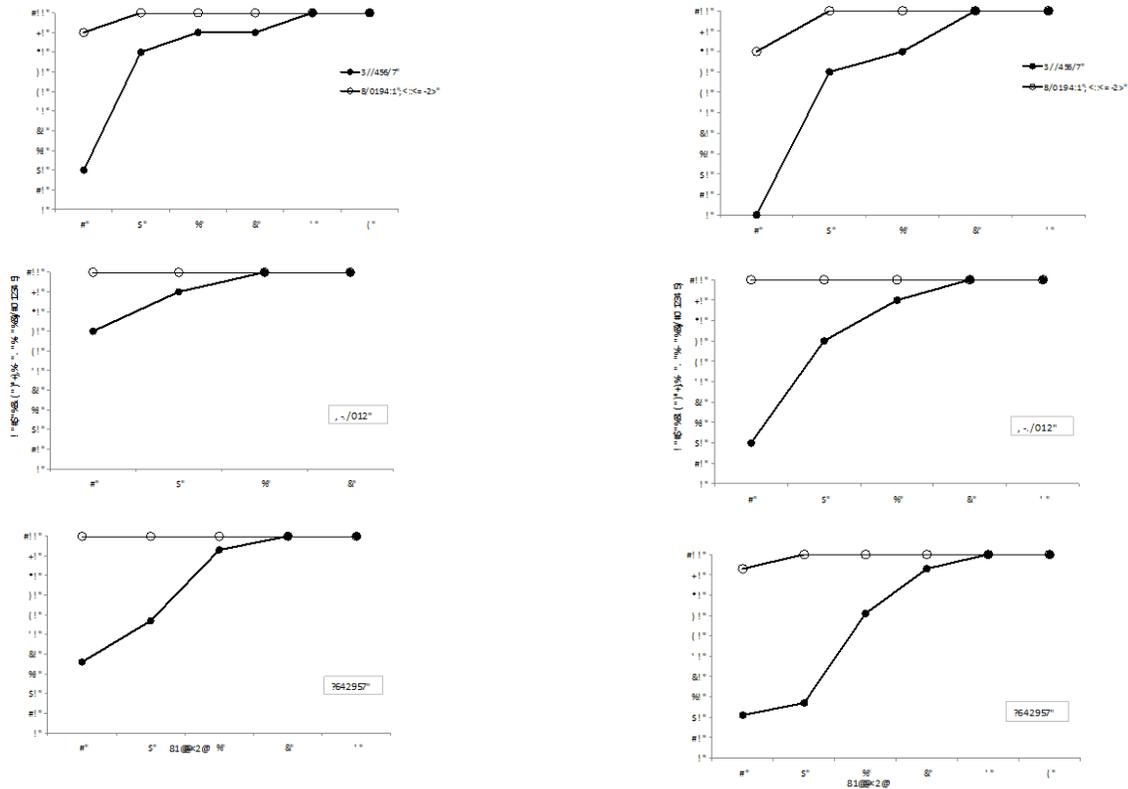
Figure 6. Line graph showing percentage of schedule following and percentage of accuracy for Joey (left) and Dennis (right) during pre-training. Closed circles indicate percentage of accurately completing the tasks independently within the schedule, and open circles indicate accuracy of following the schedule in sequential order.

Landon demonstrated the quickest rate of mastery, averaging four sessions per activity to meet mastery. Figures 5 and 6 also depict schedule following during pre-training. All participants initially required prompting to check off the step prior to completing it. All participants met mastery criteria and remained consistent with schedule following throughout all conditions.

Baseline. All four participants acquired the skill of independent schedule following during pre-training and maintained it during baseline (see Figures 7 and 8). Throughout baseline, Landon made one error following his schedule during the kitchen task, but maintained at 100% accuracy for both the office and laundry (see Figure 7). Alana maintained schedule following, also having one one error during the kitchen task (see Figure 7). Joey was the most inconsistent with schedule following, with an error during the kitchen task, and multiple errors made during the laundry task (see Figure 8). Dennis maintained schedule following, also having one error during the kitchen task (see Figure 8). Throughout both baseline and intervention, participants maintained schedule following with minimal errors that did not impede their abilities to maintain the correct sequence of tasks. In order to be scored as a correct trial, all four parts involving following the schedule had to be correct. Figure 9 and 10 show the percentage of independent cooperation instances throughout baseline. During baseline, Landon and Alana engaged in cooperation on 0% of all five presented opportunities. No spontaneous requests for help were

documented for Landon or Alana. During baseline, Joey and Dennis engaged in cooperation on 0% of all five presented opportunities. No spontaneous requests for help were documented for Joey and Dennis.
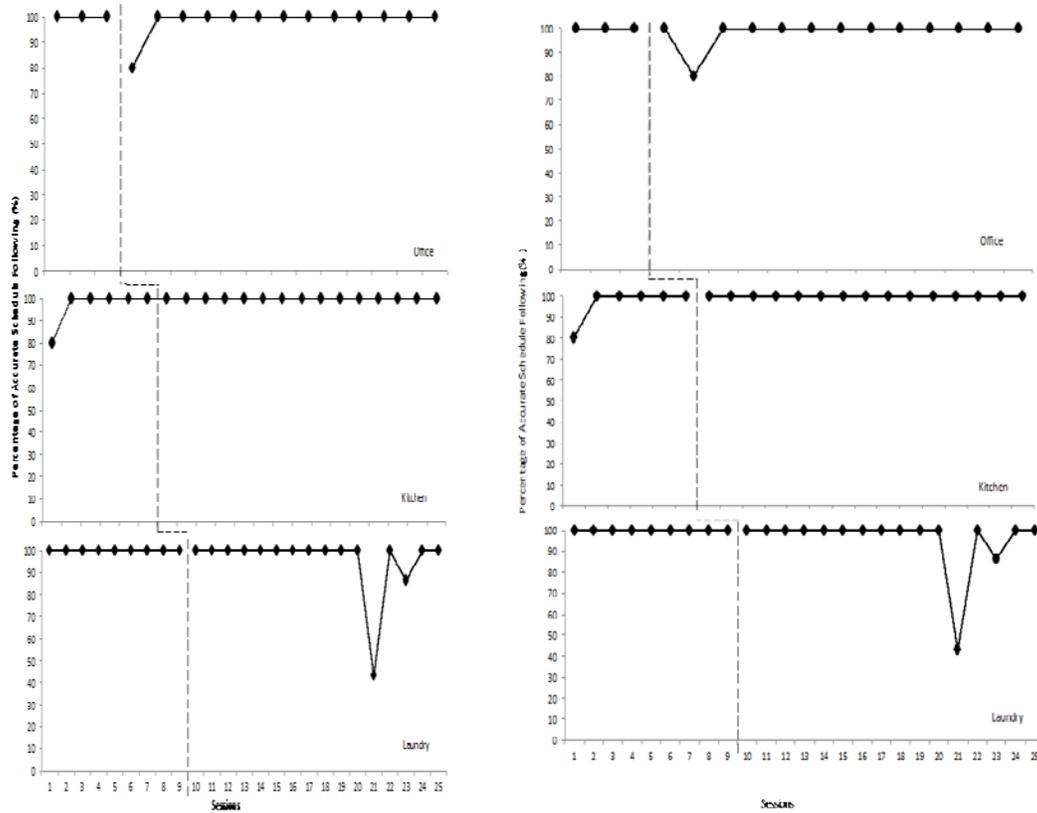
Figure 7. Line graph shows percentage of accurate schedule following for Landon (left) and Alana (right) throughout baseline and intervention.
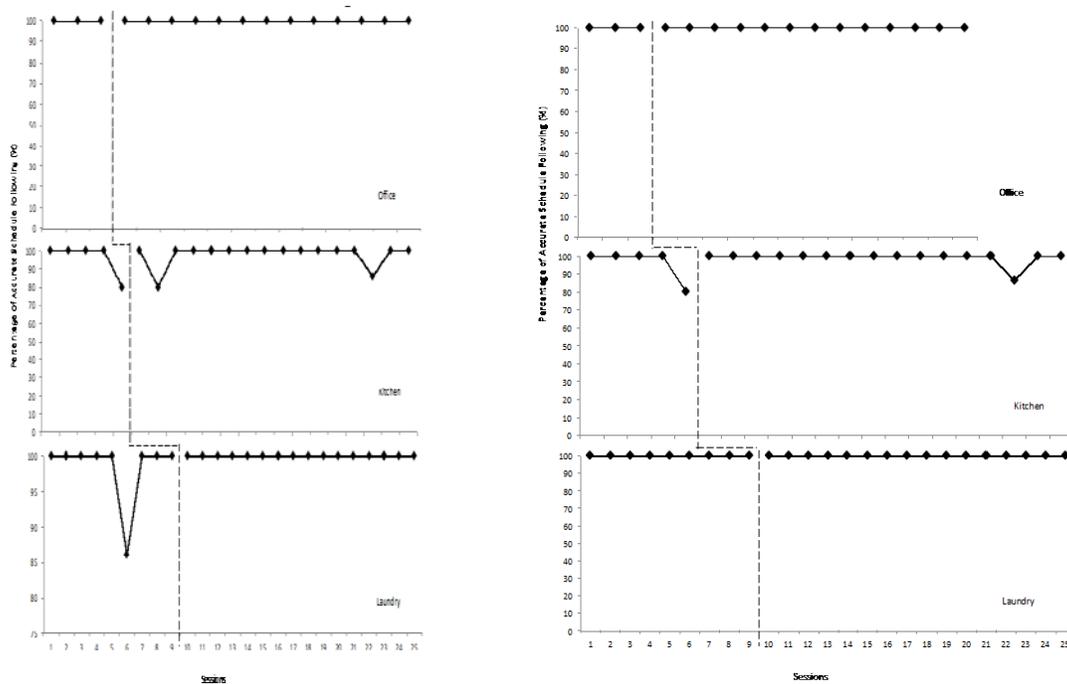
Figure 8. Line graph shows percentage of accurate schedule following for Joey (left) and Dennis (right) throughout baseline and intervention.

Intervention. Figures 9 and 10 show the percentage of independent cooperation instances during intervention.
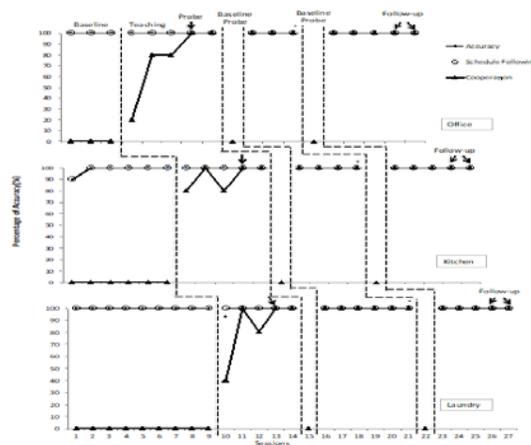
Figure 9. Line graph shows percentage of independent opportunities for accuracy, schedule following, cooperation, and baseline probe sessions for Landon and Alana throughout baseline and intervention. The first arrow indicates the first session where the instructor started to fade proximity away from the participant. The dot indicates where the instructor was faded completely. Follow up arrows show percentage of independent opportunities for accuracy, schedule following, and cooperation for 2 week and 1 month checks.
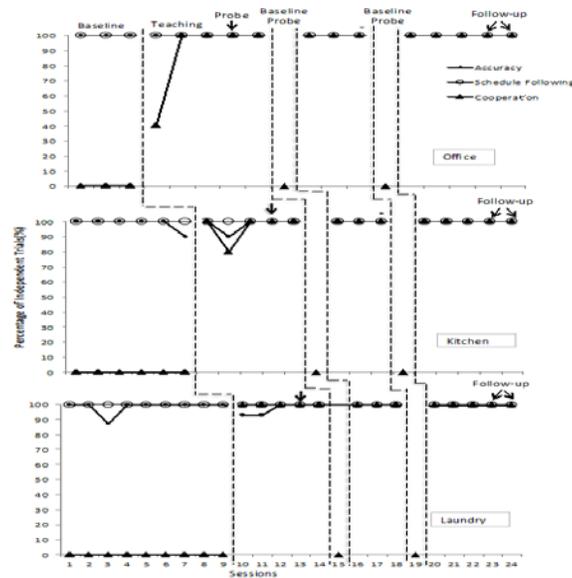
Figure 10. Line graph shows percentage of independent opportunities for accuracy, schedule following, cooperation, and baseline probe sessions for Dennis and Joey throughout baseline and intervention. The first arrow indicates the first session where the instructor started to fade proximity away from the participant. The dot indicates where the instructor was faded completely. Follow up arrows show percentage of independent opportunities for accuracy, schedule following, and cooperation for 2 week and 1 month checks.

Figure 9 depicts the percentage of opportunities for cooperation for Landon and Alana, with results indicating that the pair met criteria for cooperating on 100% of opportunities, maintaining when both the proximity of the instructor and the reinforcement schedule was faded out. Two week and one month follow up probes depict cooperation maintaining, in the absence of both the instructor and the tokens. Landon and Alana reached criteria, 100% cooperation across all five presented opportunities after one probe session, which was preceded by three teaching sessions. Following 100% cooperation in the probe session, Landon and Alana remained at criteria throughout the fading of both the proximity of the experimenter to across the room and the removal of the reinforcement system. During baseline probe conditions when the cue for help was removed, Landon and Alana engaged in 0% cooperation during the five-presented instances. Two week and one month follow-up probes depict cooperation maintaining at 100% throughout the five opportunities when the cue is present, with both the experimenter across the room and the reinforcement system removed. Throughout intervention, no spontaneous requests for help were made by either Landon or Alana.

The percentage of cooperation for Joey and Dennis is demonstrated in figure 10, with results indicating the pair met criteria for cooperating on 100% of opportunities, maintaining when both the proximity of the instructor and the reinforcement schedule was faded out. Two week and one month follow up probes depict cooperation maintaining, in the absence of both the instructor and the tokens. Joey and Dennis reached criteria of 100% cooperation across all five presented opportunities, after one probe session, which was preceded by three teaching sessions. Following 100% cooperation in the probe session, Joey and Dennis remained at criteria throughout the fading of both the proximity of the experimenter to across the room and the

removal of the reinforcement system. During the baseline probe conditions when the cue for help was removed, Joey and Dennis engaged in 0% cooperation during the five-presented instances. Two week and one month follow-up probes depict cooperation maintaining at 100% throughout the five opportunities when the cue is present, with both the experimenter across the room and the reinforcement system removed. Throughout intervention, no spontaneous requests for help were made by either Joey or Dennis.

Generalization Probe. Table 1 summarizes the results of the generalization probe across a novel setting, different activity, and a peer with whom they have not engaged before for all 4 participants.

Table 1.
Percentage of Cooperation with Novel Peer, Activity, and Location

Participant	Cooperation	Return to Schedule	Peer Cooperative Response	Novel Peer Request For Help
Landon	100	100	100	0
Alana	100	100	66	0
Joey	100	100	80	0
Dennis	100	100	100	0

Landon and Alana both requested help from the novel peer assigned in their dyad in a different classroom, with a novel activity of cleaning the classroom, 100% of the time. The novel peer did not always reciprocate engagement in cooperative behavior. For Landon, he received the assistance of the novel peer 100% of the time. Landon returned back to his schedule 100% of the time, but the novel peer did not. Alana asked for help for 100% of all opportunities. She received help from the novel peer on 66% of possible opportunities. She returned back to her schedule accordingly on 100% of the opportunities. The novel peer did not. Joey and Dennis also cooperated on 100% of the opportunities presented with the novel peer. Joey had 80% assistance from the peer once requested, and returned to the schedule 100% of the time. Dennis had 100% of cooperation from the peer, and also returned to the schedule 100% of the time. Throughout the probe, the novel peer never asked for help when the cue was present.

Social Validity. Results of the survey given to the classroom teachers regarding the participants indicated no change in how teachers viewed cooperation within their classrooms from pre-test to post-test. Video clips were shown to viewers not familiar with the study to assess whether they felt the video clip demonstrated cooperative behavior on a scale from 1-not cooperative to 5-very cooperative.   Videos 1, 4, and 6 all demonstrated instances of cooperation. Video clips 2 and 5 demonstrated no cooperation, and two participants working next to each other, but not together. Video clip 3 showed participants cooperating on 2 out of 5 potential opportunities, demonstrating minimal cooperation. Results of the video clips indicate that all four novel viewers agreed that videos 1, 4, and 6 were a score of 5-very cooperative. The video clips for video 1, 4, and 6 all demonstrated cooperation occurring. The scorers agreed 100% that videos 2 and 5 were a score 1-not cooperative. The video clips for 2 and 5 demonstrated no cooperation, and showed two participants working parallel to each other. Video 3 was a video clip that showed participants

minimally cooperating, on 2 out of 5 opportunities. Two of the scorers stated video 3 was a score of 3-neither cooperative nor not cooperative and two scored it as 2-not very cooperative. Overall, the results indicated a high level of agreement that cooperation did occur in the videos amongst all novel viewers.

Normative data specifically geared to the participants' ages and genders were collected on two children, one 12-year-old male and one 13-year-old female. While cleaning the office, cooperation occurred on 4 out of 5 tasks; during cleaning the kitchen, cooperation occurred for 3 of 5 tasks; and while doing laundry cooperation occurred during 4 of 7 tasks. The results indicated similar results between the normative data and the participants throughout the intervention.

Discussion

To facilitate learning and improve education for students with ASD, it is necessary to investigate interventions that create more opportunities for students to gain independence, while moving away from one to one instruction, as appropriate. The results of this study indicate that using an activity schedule with a visual cue for cooperation, prompting, and feedback increases cooperation between two students with autism. Cooperative activity schedules offer two students the opportunity to collaborate on a task, thus increasing opportunities for social engagement and interactions, while decreasing the duration of the task (Betz, et. al., 2008). It is feasible that long term effects include achieving levels of independence that are necessary for improving the quality of life for individuals with ASD.

The results of this study indicate that adding a visual help cue to signal cooperation into an activity schedule increases cooperation among students with ASD in a classroom setting. The results of this study aligned with the results of Betz and colleagues (2008) as well as White and colleagues (2011) in demonstrating that cooperative activities schedules can increase cooperation amongst participants. As the results depict, the participants in this study rapidly acquired the skill of asking for help in the presence of a cue and maintained the skill at follow up. Both pairs acquired the skill after only three teaching sessions, allowing for the schedule of reinforcement to be thinned rapidly. The skill of asking for help maintained in both a two week and one-month follow-up, indicating that the use of a visual cue with prompting and feedback could be a viable treatment package for students with autism in classroom settings. Due to the staffing ratios in classrooms and the push for students to spend more time working in groups, having a treatment that is maintained once the presence of the instructor and the reinforcer is faded out is important for the long term.

As White and colleagues (2011) describe, prerequisite skills for following activity schedules vary from following cooperative activity schedules. Following independent activity schedules proficiently is definitely an important pre-requisite to following cooperative ones. White and colleagues (2011) noted the importance of the participant mastering the activities within the schedule prior to introducing it cooperatively. Within this study, participants were required to master the complete activity schedule individually prior to having the schedule introduced cooperatively.

In the current study, during baseline probes in which the visual cue was removed, instructions alone were not sufficient to increase cooperation. Although the experimenter's instruction at the start of the activity was, "Let's work together to clean the kitchen" (or other respective activity), during these sessions, the participants did not cooperate on tasks, and instead returned to completing the activities parallel to each other. This occurred for both dyads. Prior to prompting participants to ask for help in the presence of the cue, the participants did not attempt to help each other or complete the others respective tasks. With no cue present, cooperation did not occur across either pair of participants. Additionally, neither pair spontaneously requested for help throughout the study. A possible explanation for this is the fact that the response of requesting help was never systematically targeted for reinforcement. Additionally, the picture cue served as a prompt for the response, and was never faded; therefore, it is highly likely that the picture cue acquired stimulus control, thus the participants did not request help when the picture cue was not present.

There are limitations to this investigation. First, not knowing what specific variables(s) is responsible for the increase in cooperation among the participants. Participants were instructed to work together to complete a task, and the verbal directive alone was not enough to increase cooperation. It is unknown if the total package or selected parts of the intervention package is what increased responding. A component analysis would need to be done to fully determine which component(s) was responsible for the change in behavior. Specific consideration should be paid to the effect, if any, token reinforcement had on cooperation due to rapid acquisition but lack of demonstration of the skill in the absence of the visual cue.

A second limitation is that the results did not generalize for requesting help in the absence of the visual cue. Additionally, participants did not spontaneously request help from each other for activities in which the picture was absent. Although following a schedule with built in opportunities for cooperation is a skill, it is useful to look at how the skill of requesting help can be broadened to facilitate asking for help spontaneously or in the absence of a picture prompt, or when help is actually needed (e.g. requesting help because you want to finish sweeping faster versus requesting help because you cannot lift something alone).

A third limitation is that the results of the teacher survey indicated no change in teacher's perceptions of cooperation within their classrooms following the end of the study. This may be due to the questions not specifically representing the goal of the questionnaire effectively. The questions may have been too vague, and did not necessarily represent the specific objectives of the study directly. Additionally, the questionnaire did not provide the definition of cooperation as used for this study. Thus, teachers may have defined cooperation differently and felt they had cooperative students prior to the study. However, it should be noted that in anecdotal discussions with the teachers following completion of the survey, they did report the students as being more cooperative in their day-to-day activities with peers following completion of the study.

To increase the number of spontaneous requests for help and generalization of the response in absence of the visual cue, future studies should look at establishing contingent reinforcement for engaging in the response of requesting for help, fading the visual cue, and increasing the response for requesting for help when it is actually needed. As discussed in the limitations, the response for requesting for help was never systematically targeted for reinforcement. Future

research might consider providing reinforcement contingent on requesting for help as this might strengthen the response in addition to providing a reinforcer at the end of the chain of cooperative behavior.

Within this study, all opportunities to request for help were generated to encourage cooperation between two participants, however help was not actually required to complete the activity (e.g. moving a heavy table). Future research might look at including opportunities for participants to ask for assistance throughout the schedule during times when it is actually needed. One of the ways in which to address this may be to select tasks where help will be required as opposed to instructed. This would likely increase the student's motivation to ask for help in the moment.

In this study, the response of requesting for help was not demonstrated in the absence of the visual cue; therefore, it is likely that the cue served as a discriminative stimulus. Future research might consider strategies to fade the visual cue, as this would potentially serve to decrease prompt dependency on the cue. Furthermore, it would potentially increase independent and spontaneous requests for help since responding came under the control of the help stimulus rather than the actual tasks.

Future research might also consider including the ability to wait as a criterion for participant selection. White et al., (2011) mention that instructing students to wait may be an important area to target when tasks in the schedule must be completed in a specific order. For example, if the steps include washing the dishes and then drying the dishes, the dishes must be washed prior to being dried. In this study, the participants who were selected all demonstrated the ability to wait throughout the study, although this was not initially planned during participant selection.

In summary, teaching students with ASD in dyads and groups needs to become a focus of future research. Settings for children with autism are frequently no longer supporting ratios that sustain one to one instruction, thus, students are being expected to perform in groups without the proper pre-requisite skills. As the number of students assigned to therapists increases, so does the need for students to be able to work independently under lean schedules of reinforcement and without close proximity to instructors. These findings further the research on cooperative activity schedules, and continue to support the need for instruction to incorporate cooperation throughout group instruction.

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Transition into Higher Education: Case Study of One Student with Autism Spectrum Disorder

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Abstract

Adjustment into higher education can be an overwhelming undertaking for all students, but undoubtedly more so for those with Autism Spectrum Disorder (ASD). Transitioning from high school to college life for people with ASD remains understudied. Students with ASD have a limited number of colleges with support programs to choose from. This study examines the structure, strengths, and weaknesses of Adelphi University's Bridges to Adelphi program, which has been designed to support students with ASD in the academic, social, and vocational domains of college life. Sharing the experience of one student with ASD in the Bridges to Adelphi program, this case study assesses how "Bridges" has influenced this individual's college experience. A semi-structured interview was provided. Results indicated that this individual has received support in the aforementioned areas. Future directions and implications are discussed.

Transition into Higher Education: Case Study of One Student with Autism Spectrum Disorder

The Universal Design for Learning (UDL) approach to teaching and learning is composed of three key elements; (1) multiple means of access, (2) multiple means of expression, and (3) multiple means of representation. The critical component of UDL is that this access is conceptualized at the forefront of academic planning, rather than as an afterthought or retrofitting (Edyburn, D.L., 2013; McGuire, Scott, & Shaw, 2006; Spencer, 2011). An effectively implemented UDL approach provides all students (both with and without disabilities) opportunities to engage with curriculum (both academic and social) in an engaging and productive way.

Just as students without disabilities can attain personal and professional growth during their college years, students with disabilities are also entitled to the same opportunities. These students deserve the supports they may need to engage in growth and development in higher education. The college experience can promote the increase of academic and personal skills, self-advocacy, and self-confidence in people with disabilities. The title, "college student," can inherently increase self-esteem, and participation on a college campus can provide a person with disabilities a sense of belonging. Individuals with disabilities may feel less isolated and different as they take classes with their peers without disabilities. Furthermore, as individuals with disabilities manage their increasingly demanding workloads and schedules, they can develop the important skills they will need to be successful in their post college, adult lives (Dillon, 2007; Hart, Grigal, & Weir, 2010).

According to the Centers for Disease Control (2014), the incidence of this diagnosis is one in 54 boys, and one in 252 girls. The prevalence is estimated to be approximately one in 68 children in

the United States. An increasing number of children with ASD have been identified, given early intervention services, and supported in several domains (e.g., language, literacy) in elementary and high school. As public awareness and availability of services have increased over the years, young children are more readily receiving valuable intervention (Adreon & Durocher, 2007; Graetz & Spampinato, 2008; Jones, 2012; Longtin, 2014; Smith, 2007). This provision of services improves both language and independence, facilitating the enrollment into higher education for individuals with ASD who do not present with intellectual disability (Taylor & Seltzer, 2011). As individuals with autism spectrum disorder (ASD) age, they are entering college seeking personal and professional development in higher education. Individuals with ASD may have average to above average intellectual abilities and interests in focused areas, making them ideal applicants for universities (Dillon, 2007; Glennon, 2001). College acceptance may be effortless for students with ASD, but the social adjustment into college and independent life can be a challenge. Therefore, remaining in college (rather than initial acceptance) may be the challenge for these individuals.

The education of children with disabilities is directed and mandated by the Individuals with Disabilities Education Act (IDEA), but services of IDEA end once the student receives a high school diploma. Students with disabilities who can, and wish to, continue into higher education are currently protected under the Americans with Disabilities Act (ADA), which theoretically ensures that the students who disclose their disability will not be discriminated against by any university that receives federal funding. Most, if not all, universities intend to develop students' personal and professional skills for adulthood and create vocational pathways. However, the ADA defines disability as an impairment that limits an individual's major life activity, and, in the case of students with ASD, this major life activity is socializing (Volkmar, Rogers, Paul, & Pelphrey, 2014). In addition to vocational goals, universities should also set social goals that include the forming of lasting relationships and the participation in campus activities (Glennon, 2001). In order to be in compliance with ADA in the service of students with ASD, universities must not only address the academic issues but also the social and organizational difficulties of students with ASD while in college as well (Glennon, 2001; VanBergeijk, Klin, & Volkmar, 2008).

While many universities and colleges offer accommodations to students with learning disabilities and physical disabilities, most are *not* equipped with the resources and staff to support students with ASD who present with unique social and behavioral issues (Dillon, 2007). Individuals with ASD may face issues throughout their adult lives in nonverbal communication, establishing and maintaining relationships, ritualistic and repetitive behaviors, and opposition to change (Barnhill, 2014; Dillon, 2007). To help students with ASD fully succeed in the academic, social, and vocational dimensions of college life, various and unique accommodations must be provided to them by institutions of higher education (Barnhill, 2014).

Students with ASD can struggle with social isolation, self-advocacy, and independent living skills when transitioning into higher education (Adreon & Durocher, 2007; Kapp, 2011). While in college, students with ASD have been reported to have challenges including difficulties with unexpected changes, managing social demands, time management, and sensory overloads (Van Hees et. al., 2015). Recommendations for support programs for students with ASD have included using a team approach in collaborating with professors, expanding awareness and acceptance of

ASD across the campus, and providing personalized services to students (Barnhill, 2014; Van Hees et al., 2015).

If more universities create programs to support students with ASD, the students would then feel comfortable and welcomed into the higher education environment. A personalized approach and services tailored to each individual was highly recommended for the support of students with ASD as each individual has different abilities and characteristics (Barnhill, 2014; Camarena & Sarigiani, 2009; Van Hees et al., 2015). Due to the unpredictable and stressful nature of college, universities should provide a safe and transparent education and living environment for students with ASD, a quiet space on campus (to regroup), and a contact person to reach out to so they can feel safe in this new environment. Information should be presented to the students in a clear and concrete manner, so that the students understand what is expected of them (Barnhill, 2009; Van Hees et al., 2015).

Adolescents with ASD, along with their parents, have reported that support in the transition into higher education in both the academic and nonacademic domains of college life as very important for success. Extensive orientation activities including daily living skills training, meeting professors, attending practice classes before the semester begins were some suggestions (Camarena & Sarigiani, 2009). Students with ASD stressed the need for practical academic accommodations in their classes to decrease stress such as priority registration and help with course selection, additional time and isolated rooms when taking tests, the option of doing assignments alone instead of doing a group project, assistive technology, note takers, and the ability to change testing dates when multiple tests are scheduled close together (Barnhill, 2014; Camarena & Sarigiani, 2009).

The need for coaching (i.e., provision of explicit instruction, followed up with guidance) in the academic domain of college was also expressed to address executive functioning (EF), critical thinking, and self–advocacy skills and to enhance the students' study and organizational methods (Shmulsky & Gobbo, 2013). To clarify, EF skills are those which involve goal-directed, future oriented behaviors (Baddeley, 2012). Therefore, academic coaching should address EF skills, by assisting the students with ASD in outlining a work schedule that breaks down research papers and test preparation into manageable goals (Shmulsky & Gobbo, 2013). The "coach" should also aid the student in decision making as well as help clarify confusing language or assignments from professors or peers (Van Hees et al., 2015).

Nonacademic supports are reported to be equally important for students with ASD in college (Camarena & Sarigiani, 2009). Social skills instruction and assigned peer mentors were suggested to universities in the support of students with ASD in the social domains of college (Barnhill, 2014; Camarena & Sarigiani, 2009). Van Hees and colleagues (2015) explained how many students with ASD voiced a preference for supportive social groups where students can share experiences with each other, rather than explicit social skills training.

Students with ASD have also stressed the importance of access to psychological support from therapists, the need for recreation and leisure (i.e., hobbies and activities), and having time to rest to help manage the stressful and taxing nature of college life (Van Hees et al., 2015). By the time they arrive to the university setting, many individuals with ASD have spent a majority of after-hours surrounded by therapeutic intervention, limiting their access to leisure time with peers.

Without access to leisure time and activities, students with ASD may be at risk for depression, anxiety, boredom, and loneliness. It is therefore crucial that support programs offer services in leisure time and engaging (preferred) activities (Brewster & Coleyshaw, 2011).

Adelphi University, a private college located in Garden City, New York, has a growing program, Bridges to Adelphi (also referred to as "the Bridges Program"), to support students who self-disclose with nonverbal and neurosocial disorders, including ASD. To provide a historical perspective, this program first started in 2007 and began with 5 students and grant funding. In 2016, it has grown enormously, and the program now supports 103 students at Adelphi University, and is now financially supported by the university. This administrative and fiscal shift demonstrates a commitment to supporting individuals with ASD in higher education. The program is coordinated by professionals and graduate students at Adelphi University, and requires an additional fee from the students each semester. The program is based on the theoretical foundations of the social leaning theory and cognitive behavioral principles (Nagler & Shore, 2013). The objective of the program is two-fold. First, to support students with individual needs, and second, to inform and support faculty who are educating these students.

Bridges to Adelphi provides individualized services to its students in the academic areas of college through an academic coach and learning strategist. The students are offered peer mentors, social groups, and social events to help and encourage the students with the social areas of college life. A vocational coach and coordinator are also accessible to students through the Bridges Program to prepare for working life after their college careers. The Bridges to Adelphi program also serves as a resource for faculty and professors working toward increasing awareness and understanding of ASD on the Adelphi campus.

Research Questions:
The objective of this study was to increase the understanding of the experience of students with ASD in higher education. This study investigated the array of challenges and advantages one student with ASD experienced while in higher education. More specifically, the Bridges to Adelphi support program at Adelphi University was examined and discussed to discover the types of support offered to students with ASD at this university. To determine if the Bridges to Adelphi program was effective in meeting the needs of students with ASD, one student at Adelphi in the Bridges to Adelphi program was interviewed. The participant was asked a series of questions about the services received from the program in the areas of academic, social, and vocational life in college. Insight into this student's college experience while in the Bridges to Adelphi program may increase the understanding of ASD, as well as, the usefulness and the effectiveness of the supports he received.

This study will investigate the efficacy of the services offered in the Bridges program through a semi-structured interview of one individual's candid experience. Results will report on the experience of the participant with ASD in higher education; future directions of the participant and of the program will be discussed. More specifically, this study seeks to discover if the Bridges to Adelphi program follows the support recommendations of students with ASD made by Barnhill (2014) and Van Hees and colleagues (2015), by answering the following research questions:

1. Did the Bridges to Adelphi program support one participant with ASD in the transition process from high school to college?

2. Did the Bridges to Adelphi program provide personal and unique service to the participant?

3. Did the Bridges to Adelphi program meet the needs of the participant with ASD in the academic, social, and vocational domains of college life?

Hypotheses:

1. The principal investigator posits that the Bridges to Adelphi program did ease the transition process from high school to college by being a welcoming and resourceful environment for the participant to turn to when he or she needed assistance.

2. The investigator hypothesizes that the Bridges program provides personalized services to the participant by meeting with the student, determining his or her abilities and areas of difficulty, and then plans services for the student accordingly.

3. The investigator proposes that the Bridges to Adelphi program provides effective services to the participant in the academic, social, and vocational areas of college life, demonstrating effectiveness through the participant's increase of independent academic work and increase of confidence in social settings over time.

A qualitative research design was utilized to effectively collect and analyze data regarding one participant's personal experiences. Previous studies have suggested that a semi-structured interview is a successful method to collect data from students with ASD in higher education (Sayman, 2015; Schlabach, 2008; Van Hees et al., 2015). A semi-structured interview allows the participant to add and expand topics, affording a greater opportunity to freely express opinions or provide detailed examples (Van Hees et al., 2015). While personal experiences in college as a student with ASD may be a sensitive topic, Barriball and While (1994) clarified that semi-structured interviews are appropriate in the collection of thoughts on complex and sensitive matters. This study was designed to obtain detailed and specific examples on how the Bridges to Adelphi program has or has not supported the student with ASD. It was also formulated to determine whether the participant believes the program is effective in meeting his needs. Inductive analysis was used in analyzing the data. The qualitative approach of this study has generated and analyzed examples of how a student with ASD has experienced higher education while in a supportive program.

Method

Participant

The director of the Bridges to Adelphi program referred the voluntary participant who was interested in the study to the principal investigator through email. The participant was a 21-year-old Caucasian male student at Adelphi University in his fourth year of study. The student was majoring in Communications, expecting his bachelor's degree in December of 2016, and has a cumulative Grade Point Average (GPA) of 3.7 out of 4.0. The participant was diagnosed with autism spectrum disorder at two years old, and grew up on Long Island, New York. He

graduated high school in the spring of 2012 and began his college career at Adelphi University in the fall of the same year. Enrolled in the Bridges to Adelphi program in his first semester of college, the participant had continued with the program for three and a half years. The participant commuted to Adelphi University, lived at home with his parents, and has never lived in the residence halls on campus. The participant was an efficient respondent as he had received many of the coaching and services offered. Further, he had participated in many social events held by Bridges to Adelphi. The participant is referred to as "Luke" in this study to preserve confidentiality. Inclusion criteria for this study were as follows:

1. The fulfillment of the DSM-5 criteria for autism spectrum disorders, based on report review.

2. Testing within one standard deviation of the mean on the Test of Nonverbal Intelligence Fourth Edition (Brown, Sherbenou, Johnsen, 2010)

3. A student at Adelphi University in the Bridges to Adelphi program

The participant for this study met the inclusion criteria.

Materials and Procedure
Interview questions were formulated based on the work on Van Hees and colleagues (2015). The interview questions can be found in Appendix A, and were generated to determine if the Bridges to Adelphi program follows some or all of these recommendations. Van Hees and colleagues (2015) recommended that college support programs provide customized support for each student with ASD, provide a safe environment, academic coaching and accommodations, psychosocial support, and provide fun and relaxing activities. In the present study, the interview questions were separated into five sections: (1) general questions, (2) the academic domain, (3) the social domain, (4) vocational skills, and (5) life after Adelphi University. The semi-structured interview was conducted in one session, was audio recorded, transcribed, and analyzed.

Analysis
Analysis of the interview transcript was conducted following the Grounded Theory Approach, which is an inductive methodology where analytical themes are identified as they emerge from the data (Corbin & Strauss, 2008). As demonstrated in the studies by Van Hees et al. (2015) and Sayman (2015), semi-structured interview transcripts of students with ASD in higher education can be successfully analyzed through the use of open coding, line-by-line analysis, and then identifying themes and subcategories. Open coding is a researcher's initial step in qualitative data analysis, and is first used in making sense of the data. Open coding includes the identifying, conceptualizing, categorizing, and describing of the data (Corbin & Strauss, 2008). In the present study, the interview transcript was read thoroughly by the researcher and through a first stage of open coding, some initial themes emerged. The researcher also used the qualitative data analysis software, NVIVO for Mac (QSR International, 2014) in the second phase of analysis, to detect frequency of words, identify nodes, and further develop themes and subcategories.

Results

The semi-structured interview extracted personal opinions and experiences of the participant in the Bridges to Adelphi program and are found to be quite positive. The participant, Luke

(pseudonym), explained how the Bridges to Adelphi program has impacted his college experience in the academic, social, and vocational areas of college life. Luke highlighted the competency of the staff, the welcoming nature of the Bridges to Adelphi environment, and the effectiveness of the support services offered. Luke reported a growth in his academic and social independence after years of developing those skills in the Bridges to Adelphi program. In the interview, Luke also explained how he was able to take the skills learned from the program and use them in other aspects of life (i.e., hobbies). Seven compelling themes and thirteen subcategories emerged from the data through analysis. The themes and subcategories are outlined in Table 1, and are expanded upon in the subsequent section. The following section further describes each of the aforementioned themes, with transcript excerpts from Luke.

Table 1
Themes which emerged from interview and qualitative analysis.

Themes	Subcategories
1. The Bridges to Adelphi Environment	
	"Nice, pleasant place"
	"Staff members aren't just staff members, they are friends"
2. Personalized Support	
	"They don't just cater the same services to every student"
3. Easing the Transition	
	"I had one place in the University I knew I could feel comfortable"
4. Effective Academic Coaching	
	"I have never handed in an assignment late"
	"I ended up getting an A on that paper, with barely any help" [Fostering Independence]
	"I also use coaching for my hobbies" [Transferal of Skills]
5. Effective Social Support	
	"I could actually just talk to people about stuff that was relevant to my interests"
	"But it eased off" [Fostering Independence]
	"[Social Events] bring Bridges together"
6. Effective Peer Mentor Program	
	"I do think they helped me break out a bit more"
	"I began my peer mentor position" [Fostering Independence]
7. Effective Vocational Coaching	
	"We focused on the transition between me and the work world"

Theme 1: Bridges to Adelphi Environment
"Nice, pleasant place"

Providing a safe environment is vital in the support of students with ASD in higher education. On big campuses that feel confusing and overwhelming, students with ASD need a place where

they can turn to and know they can feel supported by staff members (Adreon & Stella Durocher, 2007). A safe and inviting environment allows students to feel confident to communicate with staff members when they need help, as well as being open to making new friends (Barnhill, 2014; Van Hees et al., 2015;). In the following excerpt, Luke provided insight into the atmosphere of the Bridges to Adelphi office.

> *So the Bridges program, why I would call it a safe environment, is because the Bridges office is a very nice, pleasant place. It's a good place for students to socialize with each other. Bridges just creates a lot of safe, social venues, such as Video Game Nights, social groups, and I never felt endangered by any students in the program or any faculty members.*

Luke explained that the Bridges to Adelphi office is available to the Bridges students when they are in need of assistance or want a setting to relax and socialize with other students. Luke clarified how he has never felt at risk or unsafe with any of the staff members or other students while in the office or at social events. This safe environment fosters a welcoming and supportive atmosphere that allows the students to feel comfortable in reaching out to staff members about their needs and concerns and open to making new friends.

"The staff members aren't just staff members, they are friends"

Luke acknowledged that the staff members were helpful and trustworthy. These character traits are vital to support programs for students with ASD because they must disclose personal information and their disability to the program. A student with ASD may be reluctant to disclose this information because of the fear of stereotypes and societal stigma, and ASD may be seen by some as a deficiency. But disclosure can also strengthen understanding and trust between two people, enhancing relationships (Shore, 2005). Luke had a positive disclosure experience at the Bridges program and reported good relationships with the staff. In the following excerpt, Luke shares his experiences on how attuned the Bridges staff were to the students and environment.

> *So a lot of these staff members, they are graduate students, majoring in subjects such as psychology and speech (language pathology), and they know what's up. I know one staff member in particular had a brother who was on the autism spectrum, so she knew what was going on with the students, and they are very supportive of students too. A lot of the staff members aren't just staff members; they are friends to the Bridges students. They will talk to them about things like TV shows and movies.*

Luke appreciated how the staff members, who are graduate students at Adelphi University, study subjects relative to ASD and understand the characteristics and challenges of people with this disorder. The Bridges to Adelphi staff members are reported to leave a lasting impression with the students.

Theme 2: Personalized Support
"They don't just cater the same services to every student"

Each individual with ASD presents with unique in characteristics, strengths, and needs. Accordingly, personalized service is highly recommended by students, parents, and researches to

support programs in higher education (Barnhill, 2014; Camarena & Sarigiani, 2009; Van Hees et al., 2015). Luke commended the personalized approach Bridges to Adelphi ensures with each student, stating that they determine the support needs according to the person and what their diagnosis entails, instead of treating each student with ASD exactly the same.

> *What really makes Bridges an effective program for students with disabilities such as autism, is that they don't just cater the same services to every student. They make sure that every student is getting services based on their own needs. I feel the problem with a lot of disability support services is that they just give every student the same treatment, and that's not a good way to make progress. With Bridges, you meet with [the Director] before you come to college, he does an interview with you, and he knows exactly what to do with you… He knows how to talk to each student, and he knows how to register each student for their classes.*

Luke explained how the Bridges to Adelphi director, The Director, meets with each student entering the program in order to get to know them, find out their interests, determine where they might face challenges in college, and discover how to utilize their strengths. This information then helps develop a personalized support plan for each student.

In the following excerpt, Luke described the academic services he receives from the Bridges program. Luke stated that he attended more academic meetings when he first began his academic career at Adelphi University, but now that he feels more confident and capable in his academics, and he receives fewer meetings.

> *When I started at Adelphi, I had the standard four [academic] meetings a week…But as it stands now, I only have a meeting twice a week, and it combines both of them [learning strategist and academic coach]. It's like five minutes of assignments, and the rest of the meeting is doing academics.*

These statements demonstrate how Bridges to Adelphi tailors their support services to each student in the program. The Director meets with everyone, all of his students, and he looks at your major requirements. He knows good classes, he knows good professors. The Director and the Bridges program also ease the transition into college by guiding the students through stressful decisions such as choosing the right classes to take. Being handed an overwhelming amount of responsibility and choices could cause stress to any new college student, but Luke explained how having someone who already knew the ins and outs of the university was helpful when facing complicated decisions.

Theme 3: Easing the Transition
"I had one place in the University I knew I could feel comfortable"

Students with ASD may have issues in transitioning from high school to college life because they are in an intimidating new college environment, surrounded by unfamiliar faces and new demands (Adreon & Durocher, 2007). Luke had a place at Adelphi University where he could already feel at ease, as evidenced in the following statement.

For me, I had a bit of a head, I was looking forward to college, so it really wasn't a hard transition for me, but they really did ease it, because I felt like I had one place in the University I knew I could feel comfortable at. I already knew a faculty member who could make me feel comfortable, and that's what I think help raise strong transition, where you could already feel comfortable in your new home.

Luke explained that his own positive outlook on college helped him with the transition, but he believed that having a place and people he already knew on the Adelphi University campus, helped him feel comfortable and gave him a strong foundation he could build upon. As previously described in theme 2, Luke received personalized service from the program director when choosing classes. As a new student, Luke was able to gain insight into the classes and professors at Adelphi through the advice of the director. Bridges to Adelphi students also receive priority registration, allowing them to create class schedules that best suit to their wants and needs, making it easier for the students to transition into a new schedule. By having a safe setting to relax and assistance when making significant decisions, Luke felt that Bridges to Adelphi eased and strengthened his transition from high school into college life.

Theme 4: Effective Academic Support
"I have never handed in an assignment late"

Issues with Executive Functioning (EF) skills (e.g., planning, inhibition of responses, flexibility, organized search, self-monitoring, working memory) in students with ASD can hinder their academic performance in college and should be addressed by supportive programs (Shmulsky & Gobbo, 2013). In the following excerpt, Luke describes one EF issue he has had in his education that the Bridges to Adelphi program has addressed and helped him with.

One of my biggest weaknesses in high school was time management, I'll admit, I'm a bit of a procrastinator. That's not even anxiety, that's my own self-confidence, because I know I can write something that is probably a B+ at the last second, but I really think [Bridges to Adelphi] helped me with that because sometimes you get a workload so large you can't even pull a rabbit out of a hat. So yeah they helped me. What I learned is number one, you don't want to be too hard on yourself, if you feel like you're not getting enough done, don't keep bashing yourself, or keep thinking this is never going to get done. There was actually a lecture Bridges had students attend about procrastination.

Time management and procrastination are issues Luke has dealt with in his academic career. Luke explained that the demanding college workload does not allow you to leave all of your assignments to the last minute. This excerpt provides a glimpse into how Bridges to Adelphi approaches these academic issues. Of priority, support staff (trained internally by the Bridges office) urge their students to not think too critically about themselves or their work. As academic work can be very stressful and personal for students, this calming approach can help students get back on track without feeling worse about tense circumstances. Luke believes that the Bridges to Adelphi program has helped him with procrastination through the academic coaching and providing group lectures, as explained in the following excerpt.

At Bridges you meet with two different staff members, there is a learning strategist, which is an hour long meeting where they help you work on an assignment such as an essay or

give you time to work on an assignment. I was more in the latter. But there is also an academic coach which is a 30 minute meeting where you go have a list of assignments and you think of a plan to complete your assignments on time…What I really benefited from is when I actually applied a schedule because that gave me an idea… I don't like following a strict schedule I just need a plan.

Luke meets one-to-one with the learning strategist, who assists with specific assignments and essays, but he explained that his independence has grown and now uses the time in the learning strategist meeting to work on assignments on his own. Executive Functioning skills are addressed in the meeting with the academic coach. In these meetings Luke and the academic coach break down assignments into manageable tasks and create a schedule for the student to follow for the week, addressing Luke's issue of procrastination and time management.

I have never handed in an assignment late, and with the coaching, I know what I need to work on, it's all written. They print out the schedule you make for yourself so I can look at it for reference.

Based on this report, the academic coaching from the Bridges to Adelphi program has successfully addressed Luke's procrastination concern. Being able to refer to a personalized schedule, allows students enrolled in the Bridges to Adelphi program to keep track of their assignments in a visual, concrete and clear manner.

"I ended up getting an A on that paper, with barely any help" [Fostering Independence]

The goal for every college student is to develop a work ethic and gain independence to be prepared when entering the professional world. The academic services provided by Bridges to Adelphi have shown that it has been successful by fostering his academic independence. The following excerpt is a dialogue between the principal investigator and Luke.

When I started at Adelphi, I had the standard four meetings a week… But as it stands now, I only have meetings twice a week, and it combines both of them. It's like five minutes of assignments, and the rest of the meeting is doing academics.

Interviewer: So do you think that Bridges has coached you in a way that you don't need that many services now?

Definitely.

Luke first received four academic meetings a week from the Bridges to Adelphi program in the fall of 2012, but currently in 2016, only needs two meetings a week. Luke feels as though he does not require as many academic services because the coaching has, over time, increased his independent, academic abilities.

One thing I am very proud of is last semester, I had a really long paper for a class that did not allow you to use online resources unless they were databases, official newspapers, or the city's website. And I ended up getting an A on that paper, with barely any help. I would go to my learning strategist meetings, work on the paper, do research

outside of the meetings, and I felt very proud because I was literally fearing that paper. My professor said it was going to be 7-8 pages long and I think mine ended up being like 9.

Interviewer: So this was a paper that you felt like you completed independently?

Yes

Interviewer: Reflecting on it, would you say that Bridges has helped you get to this point?

It has, I think I probably would have been struck with anxiety if I had that paper way back when.

Luke earned an A on a paper that he worked on independently in the spring semester of his junior year in 2015. This was one paper that Luke was particularly anxious about because of the page and research requirement. Luke proudly explained how fulfilled he felt completing it nearly independently. The Bridges to Adelphi academic services have shown to not only meet Luke's specific academic needs, but also has proven to be effective over time, increasing Luke's EF skills and academic autonomy.

"I also use coaching for my hobbies" [Transferal of Skills]

Balancing all of the demands of college including the academic, social, and personal domains of college life has historically been a challenge reported by students with ASD in college. Students with ASD found all three areas to be synergistic, overlapping, and a cause of stress (Van Hees et al., 2014). In the following excerpt, Luke described how the coaching from Bridges to Adelphi has helped him manage all of these domains.

I not only use coaching in my own work, I also use coaching for my hobbies. That determines how much time I will be playing a video game or watching a TV show; what time I am putting aside to hang out with my friends.

The Bridges to Adelphi academic coaching has proved to be useful to Luke even outside of his academic career. The time management skills that have been developed upon have transferred into Luke's personal and social life. This transferal of skills outside of academics can suggest his use of the EF skills coaching in his future professional career. Luke illustrated how he will use his skills learned in the Bridges to Adelphi program in his professional life in the future in the following excerpt.

What can be applied to schoolwork can be applied to real life work, and [the academic coaching] will be especially relevant in my area of communications. Because when you go into the entertainment industry these days, you're not doing one thing. I feel like in the future I'm going to be doing a mix of writing, directing, even acting, and I'm going to have to organize all that.

Luke is majoring in Communications and hopes to one day work in the entertainment industry. Luke is confident that the academic coaching he has received and the work ethic he has

developed upon will transfer into his future professional life, as he feels he is prepared to manage and organize all of the hectic demands that may come in the entertainment industry.

Theme 5: Effective Social Support
"I could actually just talk to people about stuff that was relevant to my interests"

Students with ASD have reported to widely prefer social support groups, where students can freely bond and share experiences together, rather than explicit social skill training from support programs for students with ASD in higher education (Barnhill, 2014; Van Hees et al., 2015). In researching the Bridges to Adelphi program and discussing the types of social support Luke has received, it has been found that Bridges to Adelphi follows what these students prefer.

> *I attended two types [of social groups] actually, there was one I attended the summer coming in, that was like a structured social group where Diana and a few Bridges staff would ask questions to us and we'd answer them and that would lead to topics, but the ones that I attended my school year were not as controlled. Students would come into the room and we would be in groups, and we'd have conversations, different conversations, depending on who's involved. The Bridges staff would sometimes get involved too...[Proper social skills] are not discussed, but it is administered so it has to be proper. They try to make sure that no one is talking about the same topic for too long, that we are having civil conversations, and that no one is yelling.*

The social group meetings that Luke first attended during the summer orientation into college were more structured and included more information about what kinds of social demands and challenges the students might face in college. Bridges to Adelphi provides multiple types of social groups during the school year including meetings just for women and meetings just for men and some that all the Bridges students can attend. These meetings allow students to exchange experiences, get to know each other, and support each other. Luke explained that proper social skills are not explicitly taught, but the Bridges to Adelphi staff will ensure that the students are using appropriate behavior and social skills during the social group meetings.

> *Yeah, well to be fair, I learned a lot about proper social skills in high school, so I was already developing that step when I came to college, but I think that the social groups helped me develop it more. But yeah, in real life I try to keep in mind what not to do when talking to people.*

Luke acknowledges that he entered into college having proper social skills reinforced throughout his life and education, but still believed that the social groups, provided by Bridges to Adelphi, helped him to continue this growth into higher education.

"But it eased off" [Fostering Independence]

Just as Luke experienced academic independence over time with the help of Bridges to Adelphi, he also developed upon his abilities and confidence in the social domain of college life as well, fostering his independence in the social domain of college life.

I attended the social groups my first year of college because I felt I needed them back then, I was in a new environment, I needed to make new friends. I think that really helped me because a lot of the students I met in the social groups, I still talk to them now, and even the ones that I don't talk to anymore, I at least helped build some relationships and confidence with them. It was just nice. There was an hour of my day for some days a week, where I could actually just talk to people about stuff that was relevant to my interests because I felt I never got that in high school... But it eased off, by the time my sophomore year came and I tried a social group and I was like, I feel like I'm a bit passed this.

The social group meetings gave Luke something he felt he did not receive in high school, an outlet to meet new people and talk about topics he is interested in. These meetings helped Luke build his confidence in his social skills and allowed him to expand his network of friends at Adelphi. Being in an unfamiliar environment with new people can be overwhelming for students with ASD and can lead to social isolation, but the Bridges to Adelphi program ensures that their students have an channel to meet new people in a safe and inviting gathering. Luke attended more social group meetings during his freshman year of college, but later gained more confidence and independence.

"[Social Events] bring Bridges together"

The Bridges to Adelphi program also offers a wide variety of social events to their students both on and off campus. These events afford students with ASD or other social disabilities/anxieties an opportunity to socialize and have fun in a safe and welcoming setting. Furthermore, these events also offer students leisure and recreation, a recommendation made to support programs by researchers (Glennon, 2001; Van Hees et al., 2015).

> *I definitely do, I always try to go to most of them. And I think I've been to all of them, and I mostly go to them because it's a fun time, and they usually have food.*
>
> Interviewer: do you find the events enjoyable?
>
> *They definitely are, I think they bring Bridges together, and I feel that there is an increased morale with the students there compared to social group.*

Luke discussed the social events that Bridges to Adelphi has held including on campus events such as Video Game Night and off campus events including trips to Dave and Busters and bowling alleys. Luke has participated in almost all of these events over the three and a half years he has been in the program, which is a testament to the quality of the events. Luke praised the social events and affirmed how they are enjoyable and allow the Bridges students, staff, and peer mentors to spend quality time together.

Theme 6: Effective Peer Mentor Program
"I do think they helped me break out a bit more"

The Peer Mentor Program is another service provided by Bridges to Adelphi to help the students in the social domain of college life. Bridges to Adelphi pairs every new Bridges student with a

volunteer Adelphi University student mentor in their first year of college, and then gives them an option to resume or discontinue this service after the first year. These mentors not only serve as models of appropriate social behavior, but are also intended to encourage the Bridges students to get involved in the Adelphi University community by attending clubs and events. The peer mentors also act as another source for Bridges students to reach out to, share experiences with, and form friendships.

> *And I especially would say that my second year peer mentor, she was a good model because unlike other college students, I thought that she was mature and had a sense of humor and charm to her. She was fun to be around.*

Luke received support from two peer mentors in his freshman and sophomore year of college, and had positive experiences with both. The peer mentor in Luke's sophomore year of college was a particularly good model of appropriate social behavior as Luke said she was very personable and mature.

> *Ever since I came to Adelphi I was encouraged to be social. When I came to college, it was a new start for me, and I wanted to make sure I didn't end up in the same place I was in high school, where I was lonely. So I attended clubs without [the peer mentors], but I do think they helped me break out a bit more. I don't think if it wasn't for my peer mentor my sophomore year, I would have pursued getting the Anime Club back together, and working on the executive board.*

When Luke was asked if the peer mentors encouraged participation in the Adelphi community, he explained that he was already eager to attend club meetings and meet new people, but the peer mentor did strengthen this behavior. In this excerpt, Luke also illustrated how the peer mentor encouraged him to reorganize the Adelphi Anime Club that was at one point halted. Luke also took a leadership role in this club, not only proving his time management and organizational skills, but also his social skills in that he had to help lead meetings and interact with many other students.

> *"I began my peer mentoring position" [Fostering Independence]*

The Bridges to Adelphi social support has also shown to be effective for Luke as he felt confident enough to take on the role of a peer mentor.

> *So I guess it all dates back to my sophomore year, when I saw the email [The Director] sent out to the public saying we need peer mentors for the program, and I went up to [The Director] and I asked if I could be a peer mentor, and he said, "would it be weird if you were your friend's peer mentor?" But then at the end of my sophomore year, [The Director] asked me to speak at a parent meeting, and there he announced that he was going to implement Bridges students into the peer-mentoring program, and I was one of the students chosen. I began my peer mentoring position last fall.*

Luke advocated for himself and spoke to the Bridges to Adelphi director about becoming a peer mentor. The director was hesitant as the mentorship might be complicated if both students were Bridges to Adelphi students and possible friends. The director later decided to allow selected

Bridges to Adelphi students to become peer mentors in the fall semester of 2014. Luke's social confidence developed to such a length while in the Bridges to Adelphi program, that he was able to not only be independent, but also give another Bridges student social support. Luke has given great insight into the peer mentor program as he has experience as both a mentee and mentor. In the following excerpts, Luke describes his mentorship and how he believed he positively impacted his mentee.

> *I felt he needed a bit more of a social push in his life, because he was very quiet... So what I did, was I noticed he was interested in the Games Club, so I attended Games Club meetings with him. That really helped him because he got to show off his programming and game developing skills to other students, and I also got to meet some new students too... He made friends in the games club. I noticed at meetings he was more excited to see me, and this semester I unfortunately could not go to the Games Club Meetings because my schedule, but he still goes to the meetings.*

There is an emerging body of literature addressing the mutual benefit of mentorship. That is, the development of a relationship between a mentor and mentee, inclusive of reflective practices, achievement of goals, and mutual gain (Battaglia & Battaglia, in press; Campbell, Smith, Dugan, & Komives, 2012; Gopee, 2011). Luke sensed that his mentee was shy and wanted to help him develop a social life and network of friends at Adelphi. Luke did this by finding a club that his mentee was interested in and accompanied him to the meetings. Luke said that the mentee made friends at these meetings and he felt confident enough to continue to go to the club meetings even without Luke there. Without this encouragement and support from Luke, the mentee may have never felt comfortable enough to attend these club meetings and may have never expanded his social life while in college.

> *I noticed he's a lot more active, and he has a better sense of humor now. I noticed he's a lot more attentive to me too, and we have been having very active conversations... It's really grown, and it's a relationship grown. I am glad I have been able to be a part of his student life, because I am very sure he wouldn't have gotten as far as he has without me, and part of it too is that I know what he is going through. When you start college, you're a bit nervous, you are around new people, and having the added weight of a disability, makes things tougher too.*

Luke shared that when he first started meeting with his mentee, the conversations were more one sided and the mentee would sometimes only talk about what he was interested in. But Luke reported an increase in his mentee's social skills as the conversations became more active over time, with both participants contributing equally. Just as Luke better integrated appropriate social behavior from his peer mentors, his mentee learned and benefitted from Luke's mentoring. Luke is certain that he has left a positive and beneficial impression on his mentee because he has expanded his mentee's social abilities, confidence, and social life. Luke also emphasized how he was able to relate to his mentee on a personal level because he understands what it is like being a new college student that also has a disability. Luke has gone through similar experiences and challenges and can give his mentee advice and support on these matters as well.

Theme 7: Effective Vocational Coaching
"We focused on the transition between me and the work world"

The development of work ethic and EF skills are very important in preparing to work in the professional world but these factors are not the only ones that can secure a student's success in life after college. In hopes to attain an enjoyable and productive job, students with ASD have reported to both desire and require explicit training in how to conduct themselves in job interviews and how to write resumes (VanBergeijk et al., 2008). In the following excerpts, Luke described how the Bridges to Adelphi program had addressed his vocational needs while in college.

> So the Bridges program introduced me to vocational services the summer of my freshman year. I met their old vocational coordinator, and he gave me a vocational test. Later in the summer, me and him met with [The Director], and we went over my results and that is where I started gaining direction in my life. I came in as an undecided major with no idea of what I wanted to do after college. So we looked at the vocational testing results, we saw the strongest aspects of my personality, the weakest aspects of my personality, and that's what gave me the feeling that I should go into Communications because I'm a very expressive person so I'd never want to do something like accounting, philosophy, teaching… And eventually the vocational services evolved, that was the first year. Bridges implemented a vocational group that went over how to do interview skills and resume skills, and that group has been going on for three years now.

Bridges to Adelphi has given Luke personalized, vocational services even from a very early period in his college career. Luke did not know what he wanted to study in college and did not know what career path he wanted to pursue until Bridges to Adelphi introduced him to the vocational services coordinator at Adelphi University. After taking vocational tests and discussing results and options in meetings, Luke decided he wanted to pursue a career in the entertainment industry. The Bridges to Adelphi program assisted Luke with this important decision, and ensured that he was on a vocational path that suited his personality and desires.

> What they added the second year was a vocational coach. That has helped me a lot too. I remember, the first year of coaching, last year, we focused on the transition between me and the work world, because I had just gotten a job at that point, and now we are more focused on getting internships and developing interview and resume skills.

Luke not only received personalized guidance in choosing a major and career path from the Bridges to Adelphi program, but he has also received job-related support from the vocational coach. The vocational coach and Luke have discussed how Luke can transfer his academic and social skills learned in the Bridges to Adelphi program to then transition into the professional world. The development of Luke's resume writing and interview skills with the vocational coach and the pursuit of internships will expand Luke's resume and professional experiences, increasing his possibilities of job opportunities in his desired profession in the future.

Discussion

The main objective of the present study was to determine whether the Bridges to Adelphi program met the needs of a student with ASD at Adelphi University. A semi-structured interview was conducted with one participant (Luke) in the Bridges to Adelphi program with ASD and

focused on the services the program provides in the academic, social, and vocational domains of college life. Results provided insight into the services the student received, as well as how the participant felt the Bridges to Adelphi program impacted his college career, and are revealed to be overwhelmingly positive.

As multiple studies have suggested, a personalized approach should be implemented by programs in the support of students with ASD in college (Barnhill, 2014; Van Hees et al., 2015). Luke explained how Bridges to Adelphi has provided him with personalized service as the participant reported many meetings with the Bridges to Adelphi director, where the director was able to better understand Luke's personality and needs. The director also personally advised Luke when registering for classes and choosing the best professors at Adelphi University. Bridges to Adelphi provided personalized academic and vocational support to Luke through one-to-one meetings that also increased and decreased according to his needs each year.

This study also set out to determine whether the Bridges to Adelphi program helped foster a strong transition from high school into higher education in Luke's experience. Having one safe space at Adelphi University where Luke knew he could feel comfortable and turn to when he needed assistance also helped ease his shift into higher education. Luke also reported that already being acquainted with one staff member, the Bridges to Adelphi director, and receiving guidance from him when making important decisions also raised a strong transition. The social support from Bridges to Adelphi gave Luke opportunities to make friends in this new environment and the academic coaching helped him manage the new and often overwhelming academic demands, all proving that the Bridges to Adelphi program supported Luke in his transition into higher education.

The increase of independent academic work and the decrease in the need of academic meetings over the course of Luke's college career proved that the Bridges to Adelphi program has met the needs of Luke in the academic domain of college. Research has shown that issues with EF skills such as planning, initiating, organization, and self-monitoring may inhibit students with ASD in managing the demanding academic workload in higher education, and Luke reported that Bridges to Adelphi addressed these issues in their academic coaching meetings (Adreon & Durocher, 2007; Barnhill, 2014; Camarena & Sarigiani, 2009; Van Hees et al., 2015). Luke had historically had difficulties with procrastination, but in the meetings with an academic coach, Luke created an academic work schedule to follow each week. The academic coaching helped develop Luke's time management skills, and Luke reported that he had never handed in an assignment late because of Bridges to Adelphi's coaching. The Bridges to Adelphi academic coaching has also shown to be effective in meeting Luke's needs, as he was able to use his skills independently when he transferred his EF skills into other aspects of his life. Luke organized and scheduled how much time he would spend on his hobbies and with his friends. This transferal of skills also suggests that the EF skills will then transfer into Luke's life beyond Adelphi, into the professional world.

As the purpose of higher education is not only academic success, students with ASD deserve to gain personal and social growth while in college as well (Camarena & Sarigiani, 2009; Glennon, 2001; VanBergeijk, Klin, & Volkmar, 2008). The Bridges to Adelphi program has also proved to provide Luke with effective social support in college. Luke attended the social groups offered by Bridges to Adelphi in his freshman year where he was able to meet new people with ASD, start

lasting friendships, and share personal experiences with those who could relate to him. In accordance with previous studies done by Barnhill (2014) and Van Hees and colleagues (2015), Luke preferred the social group setting where students could socialize instead of being explicitly taught social skills. As Luke became more confident and comfortable in the university, he no longer needed to attend these social groups, proving how the Bridges to Adelphi program also facilitates independence in the social domain of college life as well as academic.

The Bridges peer mentor program also proved to be efficient in Luke's experience as Luke found that the peer mentor served as a model of appropriate behavior that also inspired and encouraged him to not only participate in clubs but also take a leadership role in one. With the help of Bridges to Adelphi's social support, Luke became socially independent to such an extent that he became a peer mentor himself. Luke reported that the relationship with his mentee became stronger over time and explained that they could connect to each other because they are both college students with ASD. As well as an increase in social and academic independence, an increase in confidence and self-advocacy skills were also observed as Luke sought out this peer mentor position on his own.

Opportunities for leisure time and enjoyable activities are also offered to Bridges to Adelphi students in the form of off and on campus social events, another suggestion to support programs made by researchers (Glennon, 2001; Van Hees et al., 2015). Luke has expressed his enjoyment of these social events and the assurance of his continuous attendance as the events allow the Bridges students, staff, and peer mentors to spend time with each other in a safe and fun setting, unifying the program and lifting morale.

The third and final question this study sought to answer was whether the Bridges to Adelphi program has supported Luke's needs in the vocational domain of college. The Bridges to Adelphi director has helped Luke develop a professional path while in college by accompanying him to vocational meetings, which helped Luke choose a major and possible career. Luke also stated that he has received vocational coaching in interview, resume writing, and other job related skills from the Bridges to Adelphi program. As Luke has developed his EF skills, work ethic, self-advocacy, confidence, and social skills while in the Bridges to Adelphi program, he is confident that these skills will transfer beyond his college career into his professional life.
Of note, according to the Adelphi University Office of Research Assessment and Planning, at the end of the Fall 2014 semester, the average undergraduate grade point average (GPA) at Adelphi University was 3.46 out of 4.0, and the average GPA for students enrolled in the Bridges to Adelphi program was 3.28. At the end of the Spring 2015 semester, the average undergraduate GPA was 3.49 and was 3.27 for the Bridges to Adelphi students. The average GPA for all undergraduate students after the Fall 2015 semester was 3.36 and was 3.26 for students enrolled in Bridges to Adelphi. From the Fall semester of 2014 to the Fall semester of 2015, the freshman retention rate of the entire freshman class at Adelphi University was 84%, but was 95% for freshman students who were enrolled in the Bridges to Adelphi Program (Mitch Nagler, Director of Bridges to Adelphi, personal communication, May 10, 2016).

In summary, the Bridges to Adelphi program has shown to ease Luke's transition into higher education, provided Luke with personalized service, and supported Luke in the academic, social, and vocational domains of his college experience. This study was created in response to two larger areas of concern. First, previous research stated challenges that students with ASD have

faced in higher education. Second, concerns regarding the recommendations made to institutions of higher education in the support of these students (Barnhill, 2014; Camarena & Sarigiani, 2009; Van Hees et al., 2015) have been emerging in the literature. Investigators have expressed the need for more research in this area of study and advocated for the creation of support program for students with ASD (Camarena & Sarigiani, 2009; Van Hees et al., 2015).

This study further set out to report the types of support services being offered to students from one support program, and determine if this type and level of support was effective for one student with ASD. Results supported that Bridges to Adelphi was in aligned with many of the recommendations made by prior research, including the provision of personalized service, a safe environment with planning and clear communication, academic and EF skill coaching, social coaching and support, organization of leisure activities, and vocational skills training (Adreon & Durocher, 2007; Barnhill, 2014; Camarena & Sarigiani, 2009; VanBergeijk, 2008; Van Hees et al., 2015).

The support services offered to Luke by the Bridges to Adelphi program have indeed positively influenced his college career, aiding in the development of essential skills for a positive quality of life. This study has offered an optimistic perspective regarding how students with ASD are supported and thriving in higher education in the Bridges to Adelphi program, and how the overall quality of life of individuals with developmental disabilities can increase by the creation of support programs within universities. As more institutions of higher education receive an increasing amount of students with ASD and desire to support this population, university administrators should review the literature and attempt to mirror and expand upon efficacious programs, such as Bridges to Adelphi. In doing so, it is the hope of the authors here that best practices will be implemented, thereby maximizing student outcomes (American Speech-Language Hearing Association, 2005).

Limitations
This study has three limitations. The first limitation of this study that must be acknowledged was the restricted amount of participants due to time restraints. The principal investigator is in the final year of undergraduate study, limiting the amount of time available to interview more participants. Second, as each student with ASD is unique and has different needs and talents, this study recognizes that this is only one student's experience in the Bridges to Adelphi program and that it does not reflect *every* student's experiences and opinions of the program. The inherent nature of a case study limits generalization to the general population of individuals with ASD. Third, the participant was also a commuter student at Adelphi University living with his family and not in the residence halls. Therefore, the participant could not provide information as to how Bridges to Adelphi assists students with ASD in living on campus. Future research of the Bridges to Adelphi program should extract the experiences and opinions of students in diverse fields and years of study and in different living arraignments. Doing so would better assist in obtaining a more broad sense of the effectiveness of the program for a more diverse population of students.

Future Directions
Further investigation regarding the mental health support of student with ASD in the Bridges program should also be conducted. To more thoroughly determine the effectiveness of the program, research should be done on the professional outcomes of students who have graduated from the Bridges to Adelphi program. This can be addressed by way of follow up survey studies

with Bridges to Adelphi Alumni students. Finally, future studies should also address the experiences and opinions of the parents and guardians of students with ASD in the Bridges program.

Conclusion

The present study contributed to the current evidence regarding the experiences of students with ASD in higher education. Insight into one individual's experiences in a program designed to support students with ASD was provided, and this program, Bridges to Adelphi, was found to have positive and beneficial effects in the participant's college experience. Detailed results were provided, offering specific examples of how the Bridges to Adelphi services supported the student in the development of academic, social, and vocational skills. The participant reported an increase in independence in the academic and social domains of college life after receiving services from the program. When asked if the participant felt that Bridges has had an impact on his future, the participant responded, "It has. I will never forget the services they gave me. I'm going to carry those skills I learned for the rest of my life." The participant feels confident that the skills gained from the Bridges to Adelphi services will generalize into his adult life and his professional career. Clearly, Luke has been provided with opportunities to engage with university life that have been individualized, affording multiple means of access, representation, and expression (aligned with principles of UDL).

Each individual with ASD is unique, and those who pursue a college career will enter with their own distinctive talents, strengths, and challenges. As reported in the present investigation, a positive outcome can be realized with appropriate and individualized support. Examining the experiences of one student with ASD in higher education may augment the understanding of ASD. This investigation has demonstrated that in an accessible and inclusive post-secondary education with support, individuals with ASD can achieve personal and academic success, enhancing quality of life.

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Appendix A

INTERVIEW QUESTIONNAIRE

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I. GENERAL QUESTIONS

1. Do you feel like you are getting personalized support at the Bridges to Adelphi program? Yes/No
    a. Can you elaborate on why or why not?

2. Do you feel that Bridges is a safe and comfortable environment? Yes/No
    a. Can you elaborate on why or why not?

3. Do you feel that the staff members of Bridges to Adelphi are trustworthy and helpful? Yes/No
    a. Can you elaborate on why or why not?

4. Did you enter Bridges to Adelphi as a freshman student? Yes/No
    a. If yes, did Bridges ease the transition from high school into college? If yes, can you provide examples?
    b. If you entered the Bridges to Adelphi Program later, how did they ease you into the program?

II. ACADEMIC DOMAIN

5. Do you receive coaching (weekly meetings with an academic coach and learning strategist) from Bridges to develop academic skills (e.g., essay writing skills, study aids, distraction management, keeping track of assignments)? Yes/No
    a. If yes, how often do you receive these services?
    b. Have you found the coaching helpful in managing your schoolwork?
    c. If no, do you believe you could benefit from such coaching?

6. Have you received executive functioning skills (e.g., organization, task initiation, prioritizing, self-monitoring) training in the Bridges to Adelphi program? Yes/No
    a. If yes, how often do you receive this coaching?
    b. If yes, does this training help you in managing your schoolwork? Please elaborate.

7. Does the academic coaching skills transfer into your real academic life? Do you use the study and writing tips, the organizational strategies, and other skills taught at Bridges on your own? Yes/No
    a. Can you elaborate?

8. Does the Bridges academic skills coaching prevent academic problems (e.g., late assignment submissions, procrastination, cramming for exams)? Yes/No
    a. Can you elaborate?

III. SOCIAL DOMAIN

9. Do you receive social skills coaching (in the form of social group meetings) from the Bridges to Adelphi Program? Yes/No
      a. If yes, can you elaborate on what kind of coaching, and how often you receive the coaching?
      b. Have you used the tools you have learned from the coaching in real social interactions?

10. Do you participate in the social events held by Bridges to Adelphi (e.g., Dave and Busters Outing, Video Game Night, Community Service Event)? Yes/No
      a. If yes, do you find the events fun and enjoyable? Please elaborate.

11. Do you spend time with other Bridges to Adelphi students outside of the structured, Bridges sponsored activities? Yes/No
      a. Can you elaborate?

12. Do you have a peer mentor (volunteer Adelphi students that meet with Bridges to Adelphi students weekly)? Yes/No
      a. If yes, do you like meeting with your peer mentor?
      b. Has your peer mentor encouraged you to be more socially active at Adelphi? Have you since been more active (attending more club meetings, attending more Adelphi events, etc.)?
      b. Does the peer mentor serve as a model to you for appropriate social behavior?

13. Do you participate in events held by Adelphi University, not associated with Bridges? Yes/No
      a. If yes or no, can you elaborate?

IV. VOCATIONAL SKILLS AND LIFE AFTER ADELPHI

14. After you receive your undergraduate degree, will you pursue an advanced degree (Masters, Ph.D)? Yes/No
      a. If yes, do you believe the academic coaching you received from Bridges help you in future?

15. Have you received vocational coaching in the areas of interview and resume writing skills from Bridges? Yes/No
      a. If yes, please elaborate.
      b. If no, do you think you would benefit from this kind of coaching?

16. What do you want to be after you graduate from Adelphi University? Do you have a desired profession or field you would like to work in?

17. Do you believe the executive functioning skills coaching you had in the Bridges program transferring to your desired profession? Yes/No
      a. Please elaborate on why or why not.

18. Do you believe your skills developed while in the Bridges to Adelphi program will help foster your independence and benefit your future goals? Yes/No
        a. Can you please elaborate?

Critical Perspectives on Discourses of "Excellence" and "Assessments" among Students with Special Needs

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Abstract

Education in general is the process through which society imparts the core of its tradition, norms, vision and beliefs. Therefore, different societies also define different educational goals when referring to excellence in education. Although everyone wishes to have excellent educators who develop excellent learners, there is no consensus regarding the meaning of excellence. Although there is no doubt about the need to have excellent educators, the fact that educators' excellence is assessed by their students' excellence leads to other dilemmas as well. Considering the fact that not all learners are the same, the main questions should be; should all learners reach the same goals of excellence? Can we assess either educators' or students' excellent without referring to the differences between them? Education leaders' definition of excellence should be based on an understanding of the differences among learners, a definition that will be the leading goal for educators. This paper generates discussion about excellence in education in general, focusing on the complexity involved when considering students with special needs.
Key words: excellence, assessments, special-needs, learning

Critical Perspectives on Discourses of "Excellence" and "Assessments" among Students with Special Needs

Being an excellent student who succeeds in all assessments throughout school is a goal for many students, encouraged, of course, by their teachers and parents. This goal derives from the belief that success in school will lead to success in life. But, while learning is considered a natural process each person undergoes, for students with special needs it is usually not that straightforward. For them, the learning process is complicated and involves a variety of caregivers, educators, mediators and other components to make learning as efficient as possible. But, throughout their education students with special needs are challenged both by their own obstacles and by the fact that their achievements are always compared to those of children without special needs. It is undoubtedly useful to track basic human development and compare an individual child's rate of growth to peer norms as a newborn or in early childhood in order to identify or even to prevent special needs in the future (Mason, McDougall, Lown, Gupta & Claeson, 2014), but conducting similar comparisons to promote excellence among learners may harm the development of many students.

Discussions on the topic of excellent education and the efficiency of learning are of interest to education leaders around the world. There is also a common understanding that in order to develop excellent education in schools there is a need for excellent teachers. Programs such as the TEA (Teaching Excellence and Achievement) are developed specifically for excellent teachers who wish to promote excellent learning processes that lead to higher achievements among their students (https://educationusa.state.gov/scholarships/teaching-excellence-and-achievement-program-tea). Without reducing the importance of training excellent teachers and educators, these types of programs do not solve the dilemmas in regard to excellence in schools.

Moreover, as to the discussions about the meaning of excellence, it is clear that different educators use the term differently and as a result will lead their students toward different goals. Nevertheless, while considering individual differences among students, what definition of excellence or scale of proper achievements will allow proper reference to all students? As a result of the process of looking for achievements, educators who use standard assessments often refer to excellence as achievements. The complexity begins when the search for achievements within excellence lead educators to simplify the process by comparing students' grades in order to promote excellence.

The realization that people refer to excellence differently according to their perspectives of the goals of schooling, has led assessors and education leaders to develop a wide variety of cognitive and learning assessments based on their different approaches towards assessment. At one end of the scale we have standard assessments developed by those who believe that all assessments should be conducted equally for everyone and that the results should be compared across all students. The perceived advantages of these assessments derive from the need to have reliable benchmarks that enable tracking of the development of specific skills. At the other end of the scale we have dynamic assessments that monitor students' thinking and learning processes and compare results to the level of the learning process each of these students began with. Dynamic assessment results are hardly ever compared to other students, and never compared with the results for students from different schools. Nevertheless, psychologists and cognitive assessors use core benchmarks of development to assess the type of mediation children need for better learning development. It is essential to understand that developing any kind of assessment begins with a certain goal that needs to be assessed. Thus, any conclusion deriving from the results of an assessment should always be related to the original goal. Although it is understandable to use the term 'excellence' differently along with the use of a different type of assessment, the main problem is that educators often interpret beyond the data and make sweeping generalizations and inferences about students' skills, abilities, and potential on the basis of performance on the discrete skills that these assessments measure.

Usually, excellence is measured by a range of assessments designed according to specific curricula that educators develop. Nevertheless, the results present students' knowledge only on subjects they were asked about and do not present their cognitive skills or knowledge in other domains. This process of assessment is used in most countries, although education leaders share the understanding that efficient assessments should focus on the process of learning rather than on the results and grades (Kozulin, 2014). Among teachers of students with special needs, the focus of discussions about excellence should be on the question: How can we promote excellence among learners with special needs?

The discussions about school goals in general, within the desire to promote excellence among learners, highlight another contradiction. One school goal that educators deem important is the desire to improve the quality of individual life outside the school. This goal informs many countries as they develop curricula and assessments for school quality (Cai, 2014). The underlying assumption here is, that the "curriculum can be a key lever for the quality of education" (Cai, 2014, p.812). Nevertheless, practitioners and policy-makers still refer to the classroom as the center of learning, although achievement in learning a specific curriculum usually presents specific knowledge of specific material that does not predict one's ability for efficient integration into society.

Focus on a core goal of developing excellent and productive members of society emphasizes the dilemmas in regard to what the proper leaning processes and optimal learning materials are, and which learning activities students should experience in schools. For example, can we determine that school systems have fulfilled their goals if students achieve excellent grades in school, but have low achievements in their social skills? Or, how can educators assess school achievements when students succeed in developing excellent interpersonal relations but attain only low academic success in their exams in school?

Beyond the practical discussion of how to assess excellence, language development should also be considered. The development of language is subject to the development of the culture (Robinson & Beatch, 2016; Zhan, 2016). Consequently, the use of the same concepts and terms may differ from one culture to another, according to the norms and values of each. Understanding cultural diversity in regard to the use of language is the basis for the claim that excellence in general, especially academic excellence, cannot be compared between countries. Furthermore, in a global society, schools have to deal with students from different cultures who relate to learning and achievements differently, a fact that emphasizes the harm that focusing on one aspect of excellence may cause.

Unclear understanding that leads educators to use the terms of excellence and assessment as complementary is one of the obstacles education is currently facing. As mentioned above, school assessments are usually based on specific content the students were supposed to have covered up to the time of the assessment. In order to maintain the accountability of the assessments, standard assessments are developed with specific regulations that all students must follow. These regulations refer also to students with special needs that only lately have been allowed to be assessed according to the alternatives or accommodations they use while studying (Tindal, Nese, Farley, Saven, & Elliott, 2016). But still, all results are compared according to the same scale to of excellence. This is without taking into consideration the fact that students with special needs may achieve lower grades on the assessments because of their emotional difficulties and not their cognitive ones (Schwab, Hessels, Gebhardt, Krammer & Gasteiger-Klicpera, 2015). On the other hand, according to educators who work with students with special needs, the definition of excellence refers to the progress the students are making and the evaluation is expressed in words rather than numerically.

The discussions about the meaning of excellence in education develop a variety of perspectives in regard to what excellence in education is, and in regard to who is an excellent learner. These discussions should continue, but with a basic universal consensus that excellence in an education should start from individuals' perspectives and later on becomes a comparison criteria within society. Examining the excellence of individuals may divert educators from the main purpose of having education systems: to prepare learners to be part of the community they live in as well as to help them become education leaders in the future. Diversity between cultures may develop different perspectives on education, but all educators wish to have common principles within the education system in each community.

The main cause for such a variety of points of view in regard to the meaning of excellence is the diversity among education leaders, assessors, policy makers and learners; this develops the dynamics and developments of education systems around the world. But, in order to maintain

these welcome dynamic processes, educators should remember that among their students there are those who struggle. The idea of looking at the individual within the group was initiated almost a century ago by Dewey (1938) who emphasized the balance that should be considered when assessing education systems. He claimed that relations between the individuals and society were reciprocal. From his approach we learn that if we eliminate the social factor from the child we are left only with a group of people with no relation to one another, whereas if we eliminate the individual factor from society, we are left only with an inactive and lifeless mass of people. Individuals are all students no matter in which domain or how they present their excellence.

Throughout the last decade, mainstream educators and researchers have been demanding that society look at individuals and their diversity of thinking and learning in order to improve schools in general (Dewey, 1938; Feuerstein, Feuerstein, Falik & Rand, 2002; Gardner, 2000; Vygotsky (in Kozulin, 1999)). This basic approach can be used efficiently while discussing the meaning of excellence from both the individuals' and the societies' perspectives. But, in practice, the ongoing search for excellence is leading to the situation in which students with special needs are not easily included in school systems; a fact that affects their inclusion processes later in the society they live in. The inclusion of children with special needs in regular classes involves both educational and social processes that psychologists and educators have been promoting for years (Kozminsky, 2003). Nowadays, while developing inclusion processes for children with special needs, the focus is on the social benefits for all those involved in the inclusion processes rather than on the academic aspect (Reiter & Mano, 2006). Undoubtedly there is the importance of the social skills children with special needs must have in order to be included in their society, and these skills are not measured through assessments in school. Could they ever get their reward for excellence if their primary goal is not assessed?

From pre-school to university, students are assessed according to academic criteria to allow equality for all. However, using equal criteria for all will not allow proper inclusion processes for students with special needs. Educators are aware of the fact that by providing proper academic support, students with special needs can acquire skills and knowledge as their classmates do. But, both learning and assessment processes must be different than the mainstream and should be adjusted to the students' needs (Olson, Roberts, & Leko, 2014).

The paradox between the desire to apply uniform academic criteria to all and the belief that people with special needs should study with their peers is highlighted through the discussions about the meaning of assessment in general. While the general goal of school assessment is to measure progress towards meeting grade level standards in order to inform instruction, or to know how far the students are from them, this is not the goal for students with special needs, who are often assessed by dynamic and cognitive assessments, which aim to provide information about the learner's thinking skills, cognitive strengths and weaknesses in order to foster appropriate learning strategies to help them advance (Climie & Mastoras, 2015; Kozulin, 2014).

The above paradox broadens the discussion regarding the efficacy of assessments. Beyond standard cognitive and psychology assessments, most students with special needs are assessed also through either dynamic assessment or any other alternative assessment that can provide the necessary information for educators who wish to develop more effective teaching and testing methods that are individualized according to students' needs. But, these students will not usually have such accommodations while taking standard tests throughout their academic studies in the

universities or later on in life (such as assessments for a new job). Therefore, should educators continue to accommodate their assessments or their curricula for students with special needs if it does not help them in the future? Should educators focus only on the process of studying and succeeding in school? This will be contrary to the goal of education: to prepare students for life.

Another perspective of preparing students for life after school is preparation for higher education where students study toward the career they wish to develop. Excellence may be considered differently then. At first, passing a series of exams may be considered a sign of excellence. But, this is only the first stage of success, since students still need to succeed in all courses they have to take as part of their professional training. But, even then, graduating with excellent grades does not guarantee success in one's originally chosen career. This raises another question in regard to excellence: can we define excellence by assessing the students admitted to the institution, or by the number of those who manage to graduate with scores higher than the national average for that discipline? Or perhaps, should we monitor those who graduated and assess their excellence by following their career? There is no doubt that higher education should be excellent and that teaching in higher education must be professional and aspire to high quality (Donald, 2015). The question is whether demanding excellence in learning, teaching and training in higher education is sufficient. Moreover, how can we follow and assess the students with special needs who were accepted into higher education programs but need a longer period of time to graduate? Looking for answers should also acknowledge differences among disciplines, and accordingly, excellence should be differentially defined.

The measurement of excellence in schools and in higher education institutions links to the same dilemma when educators understand that the graduates of higher education systems are the teachers in the schools. Therefore, assessing excellence in higher education becomes even more complex when it comes to excellence in academic teacher-training programs, which deal with the concept of excellence on a daily basis. Although all educators and parents wish to have excellent teachers in schools, the question of how to train an excellent teacher raises many more debates and there is no single answer. There are fierce debates on the issue of teacher excellence, since it is known that not all the student teachers who graduate at the top of their class will go on to become good teachers, or even survive as teachers for more than five years (Gallant & Riley, 2014). Teacher-training programs may teach the necessary knowledge and may impart a variety of pedagogical perspectives, but actually being a school teacher is a totally different reality. While teaching involves deep understanding and keeping abreast of new disciplinary knowledge, it evolves through knowing, understanding and being able to mediate that information for a variety of students with diverse learning needs.

While discussing the variety of ways school-teachers' excellence can be evaluated, the meaning of students' excellence cannot be ignored (Althauser, 2015). Thus, considering students' grades as a component within teachers' evaluations harm teachers of children with special needs. Children with special needs may have low academic performance although their teachers are doing an excellent job on a daily basis to promote skills other than the academic ones. Therefore, acceptance into an academic teacher-training program and graduating successfully may be based on passing exams, but the real test comes only after graduation. Will the teacher emerging from a very prestigious teacher-training program necessarily be able to integrate her pedagogical knowledge and subject-matter knowledge while relating to each of her students' academic and emotional needs (Flavian, 2015)? Moreover, will she be able to do it on a daily basis, several

hours a day, for the next 30 years? How can higher education institution prepare her to be an excellent teacher, and how, if at all, can the excellence of the teaching training at that institution be measured? One more question that should be asked is, whether excellent teachers should use a variety of perspectives of excellence vis-à-vis their students?

As a result of the desire to develop excellent teacher-training programs that will lead to integration of excellent teachers in schools, different teacher-training programs have developed (Jung, 2005). These academic programs are based on pedagogical approaches, each with its own advantages and disadvantages in regard to the concept of excellence (Kass & Rajuan, 2012).

Currently there are two main approaches to academic teacher-training programs; one is based on providing stable pedagogy and subject-matter knowledge during teacher-training and then learning how to practice teaching in schools, whereas the other claims that training should begin and develop from experiences in schools, and therefore training should be conducted mainly in the field (Flavian & Kass, 2015). Although these two approaches derive from totally two different points of view, while researchers studied the teachers' work after graduating, no reliable or valid differences were found (Kass & Rajuan, 2012; Flavian & Kass, 2015). From these two approaches other teacher-training programs have been developed around the world. One matter is common for all the teacher training programs; there is no doubt that in order to have excellent students that can present their achievements in variety of ways, we need to develop excellent teachers. The need for excellent teachers, the ways to assess this type of excellence without ignoring the diversity among students, and suggestions for achieving excellence in academic training for all will be the factor that motivates educators to keep discussing the issue.

In conclusion of the discussion up to now, along with encouraging other educators and policy makers to continue, we should keep in our mind the core of Feuerstein's (2002) approach, that learning processes take place on a daily basis, throughout life. Educators should learn how to provide all students with the cognitive tools the students need in order to become excellent according to their own skills and perspectives. Or, as Eugen (1999) wrote: "the instructor's business is not to show the way itself, but to enable the pupil to get the feel of this goal by adapting it to his individual peculiarities" (p.73).

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The Relationship between Student Achievement Goals and Engagement to Middle School Students' Writing Improvement

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Abstract

This study investigated the relationship between middle school students' achievement goals and classroom engagement to their writing scores throughout a school year. Student writing samples were collected in the fall and spring of one school year to calculate student writing improvement. Students self-reported their academic achievement goals and class engagement in the spring. Results of hierarchical linear regression suggest that students' behavioral engagement positively predicted writing improvement, while emotional engagement and behavioral disengagement negatively predicted writing improvement. Findings suggest writing teachers may need to increase strategies to keep students behaviorally engaged in the classroom in order to improve struggling writing over the school year.

Keywords: middle school, writing, engagement, motivation, struggling writers

The Relationship between Student Achievement Goals and Engagement to Middle School Students' Writing Improvement

The National Assessment of Educational Progress (NAEP) described in their 2011 report that 81% of eighth graders performed at or above the basic level for writing, but researchers and teachers continue to focus on those students not meeting performance recommendations for writing (NAEP, 2012). According the National Center for Education Statistics (2013), 60% of states have students performing below minimum proficiency standards in writing. Keeler (2013) suggests providing effective explicit writing instruction and allowing students to have a voice in what they are required to write about minimizes the number of students who develop writing deficiencies. Researchers offer a variety of reasons to explain students' struggles in writing, and several suggest that some middle school students may experience a decline in their motivation to write (Anderman & Maehr, 1994; Eccles, Wigfield, & Schiefele, 1998; Romano, 2007).

Research in writing offers that narrative quality may be improved through student motivation in writing (Troia, Harbaugh, Shankland, Wolbers, & Lawrence, 2013), which may result from a variety of factors, dependent upon the different aspects of the writing process (Bruning, Dempsey, Kauffman, McKim, & Zumbrunn, 2013). Though the process of writing is complex, students with greater writing motivation may persist through the writing process during a course. In addition, greater writing motivation may also mediate the effects of teaching strategies for improving student grades in writing (Lam & Law, 2007), especially for teachers of students with learning disabilities (LD; Cass, 2011).

Theoretical Framework

Achievement goal theory
Ames (1992) describes students' goals for learning as focused on mastering the content or performing better than their peers. Mastery goals are associated with attaining an understanding of the content and increasing competence, while performance goals explain how students maintain a focus on achievement for the purpose of demonstrating their competence. Research in achievement goals suggests that mastery-oriented goals may be more adaptive in helping students to gain a thorough understanding of the subject, while performance-oriented goals may cause students to learn the material only for the sake of out-performing their peers (Pintrich & De Groot, 1990). Much of the research relating achievement goals to student grades suggests that performance-oriented goals may be the most adaptive because these are the goals that help students to focus on improving grades.

Elliot & McGregor (2001) separated achievement goals into a 2x2 framework of mastery approach, mastery avoid, performance approach, and performance avoid goals. Defining the four types of achievement goals remains important to understanding students' academic outcomes. As students engage in the learning process, they may approach learning with an internal goal or normative goal, which yields mastery or performance goals, respectively. Therefore, students may learn for the purpose of improvement or for the purpose of comparison to others. Additionally, students may engage in learning in order to promote or prevent the type of learning, approach or avoidance (Elliot & McGregor, 2001). Students engaging in learning may adopt mastery approach, mastery avoid, performance approach, or performance avoid in a learning situation. Elliot and McGregor's research has defined mastery approach goals as those in which students express goals to improve their knowledge, mastery avoid goals as those in which students engage in learning to avoid losing their mastery, performance approach goals as those in which students engage in learning to outperform their peers, and performance avoid goals as those in which students engage to avoid making the lowest grades. Research suggests that mastery approach goals may be the most adaptive in helping students to learn their course material, while performance approach goals may be most adaptive in helping students to attain higher grades. Those students adopting mastery avoid and performance avoid goals may also possess study habits associated with maladaptive learning outcomes.

However, relationships between students' goals and academic outcomes may change as they transition from elementary to middle school (Paulick et al., 2013; Raccanello & DeBarnardi, 2013). Most students in the elementary grades adopt mastery goals for learning, while most students in middle school adopt goals for out-performing others. Therefore, a greater focus for middle school students may be devoted to attaining a specific grade, rather than adopting learning outcomes for improvement of a subject or task. This may result from the fact that middle school teachers emphasize classroom goals which focus students on attaining higher grades or outperforming their peers (Turner & Meyer, 2000; Turner & Patrick, 2004; Urdan, 2004). Because of the competitive nature of secondary education, middle school students may be more likely to set personal achievement goals to outperform their classmates or to make the best grades. As a result of this changing goal structure for middle school students coupled with a changing environment, teachers and researchers may consider additional motivating factors for enhancing the motivation of middle school students to increase their skills for improvement in a subject area.

In writing, motivational research suggests that the nature of writing is complex, in that writing has many components about which to evaluate. Research on the writing process suggests that instructor feedback and assistance may have no impact on students' achievement goals and performance in writing (Duijnhouwer, Prins, & Stokking, 2010), though additional research offers that motivational practices in writing may occur within students' adoption of goal orientations (Kaplan, Lichtinger, & Gorodetsky, 2009). Because of this complex nature of writing over a period of time, research may produce a variety of results. As previous research in goal orientation suggests that achievement goal adoptions may change over time, research in writing supports the idea that students' goals in writing may change over time as well. As teachers increase guidance for writing during the process, students may be less focused on performance goals as they progress through elementary school (Meece & Miller, 1999). This supports other research with middle school students to suggest that students transitioning from elementary school to middle school may adopt goal orientations different from their younger and older counterparts (Paulick et al., 2013). These results suggest the importance of further examining goal adoption in writing, especially for middle school students.

Classroom engagement
In addition to the influence of student achievement goals relating to student performance outcomes, research in classroom engagement also suggests an existence of a strong positive relationship between student engagement and performance. Wellborn (1991) describes student engagement as students demonstrating the presence or lack of either behavioral (demonstrating overt strategies) or emotional (demonstrating covert strategies) engagement in the classroom. Students with greater classroom behavioral and emotional engagement may be more likely to focus on their class work and utilize learning strategies to enhance their understanding of new information than those students with lower amounts of behavioral and emotional engagement. Additionally, encouraging classroom engagement in middle school may help students in becoming more self-regulated and resilient in attaining their learning goals (Fried & Chapman, 2012). In the classroom, teachers may encourage greater behavioral engagement by creating activities and lessons to capture student attention and interest, while promotion of emotional engagement may be encouraged through the teaching of learning strategies. By utilizing these learning strategies, students may be more likely to increase their learning outcomes in a subject area.

While academic performance has previously been associated with positive academic outcomes, research in classroom engagement suggests that student engagement in the classroom may even mediate classroom achievement for students with previously lower academic scores (Dotterer & Lowe 2011; Nakamaru, 2012; Strambler & McKown, 2013). Because middle school has a greater focus on students grades and academic outcomes than elementary school, many students with lower academic scores may find annual improvement to be overwhelming. With the implementation of a variety of writing strategies and topics to encourage student interest in writing, students may be more likely to engage in the writing process and improve their writing performance throughout the school year (Goldenberg, Meade, Midouhas, & Cooperman, 2011). Therefore, further research to understand the role of student engagement and its relationship to student writing improvement warrants greater exploration.

Constructs rooted in motivational research suggest that positive relationships exist between achievement goals and student classroom performance and between engagement and classroom performance. Because student grading criteria may be different from school to school, measuring student concept improvement should be considered. Because of middle school students' changing achievement goal adoption and the potential of classroom engagement as an influencing factor for increasing student academic performance, the present research sought to investigate how middle school students' personal achievement goals and engagement in the classroom relate to student writing improvement during a school year. Therefore, research questions were as follows:

1) What is the relationship between students' personal achievement goals and students' writing improvement over a school year?

2) What is the relationship between students' behavioral engagement, emotional engagement, behavioral disengagement, and emotional disengagement to their writing improvement over a school year?

Method

Following approval from the university's Human Subject and Review Committee, the researcher attained approval from the school district to conduct the research study. The researcher first met with all sixth, seventh, and eighth grade teachers at a rural middle school in the southern US ($N =$ 638 students) to discuss the research study and to select a writing prompt. The selected writing prompt was chosen by teachers and was modeled after a writing prompt from their state standardized assessment. As a part of their regular class instruction, teachers administered the writing prompt to all students in their classes. Writing prompts were passed out at the beginning of the class period and students had the entire period to write. Only those students who attained parental consent and who provided personal assent released their writing samples to the researcher. Student participants also completed a survey to indicate their achievement goals and beliefs about engagement.

Participants
A total of 207 sixth, seventh, and eighth grade students (55% female, $n = 113$; 45% male, $n = 94$) participated in the research study. The average age of participants was 12.31 years and most students self-identified as White (73.2%, $n = 153$) or Hispanic (24.4%, $n = 51$). Participants were assigned a unique ID number from their teacher that was placed on their writing sample and entered on the online survey to provide a link for the researcher to analyze the data, while maintaining participant anonymity.

Measures
Participants completed a self-report survey containing Likert-scaled items (1 = not at all true to 5 = very true) from the revised Patterns of Adaptive Learning Scale (PALS) developed by Midgley and her colleagues at the University of Michigan Midgley et al. (2000) and validated for middle school students. Student achievement goals were measured using the 2x2 achievement goal questionnaire and was comprised of four subscales of five items each to measure students' mastery approach goals (e.g. One of my goals in writing class is to learn as much as I can., α = .71), mastery avoid goals (e.g. I worry that I may not learn all that I possibly could in this writing

class., α = .65), performance approach goals (e.g. One of my goals is to show others that writing is easy for me., α = .73), and performance avoid (e.g. One of my goals in writing class is to avoid looking like I have trouble doing the work., α = .71) (Lindt & Yu, 2015).

Student engagement was based on the Engagement versus Disaffection with Learning scale (Wellborn, 1991) which is comprised of four subscales with five items each and has been validated for middle school and elementary students. Students indicated the extent to which they agreed with statements of behavioral engagement (e.g. In writing class, I work as hard as I can., α = .71), emotional engagement (e.g. When I'm in writing class, I feel good., α = .88), behavioral disengagement (e.g. In writing class, I do just enough to get by., α = .65), and emotional disengagement (e.g. When we work on something in writing class, I feel bored, α = .76).

Students' writing samples were obtained during students' regularly scheduled writing classes in both the fall and in the spring. Both writing prompts asked students to write personal narratives with which they were familiar. All students in the study wrote to the same prompt at each time period to ensure better reliability. Students' were given the entire class period (about 45 minutes) to create their essays, and most essays were about a page long. No additional instruction was provided to students during the course of the study, other than instruction in the regularly designed curriculum. Writing samples were then scored by three separate research assistants, to attain inter-rater reliability and all reviewers were trained by the researcher to score the writing samples, using the state's writing test rubric. Writing samples were then assigned an average score from 1 (lowest) to 5 (highest). Writing scores for each student were averaged to create one score for each student. In the spring, writing samples were again obtained from all participants and scored in the same as those in the fall. Then, a writing improvement score was calculated by subtracting each student's fall score from his or her spring writing score.

Data Analysis

In order to assess the relationship of students' achievement goals and engagement to writing improvement, the researcher first eliminated students from the sample who were enrolled in Pre-AP (advanced) English classes (*n*=136). Because of the researcher's purpose to understand how motivational variables may be related to writing improvement, only students enrolled in the regular education class were included because these students are the ones whose writing needed improvement. The final sample of students included in the analyses was comprised of 71 students (34% female, *n* = 24; 37% 6th grade, *n* = 26; 60% 7th grade, *n* = 42, 3% 8th grade, *n* = 2) with an average age of 11.9 years.

Correlational analyses
The bivariate correlations, presented in Table 1, indicated that students' academic achievement goals were correlated to other variables in the research study. First, mastery approach goals were positively correlated with behavioral engagement (*r* = .42, *p* < .05) and writing growth (*r* = .20, *p* < .001). These correlations suggest that students who adopt goals in writing for improving their skills are more likely to report remaining behaviorally engaged and more likely to experience greater improvement in writing. Of greater importance is the relationship between mastery approach goals and writing improvement, which suggests that students who are encouraged to adopt mastery approach goals may experience the greatest improvement in writing. Correlations also revealed that mastery avoid goals were positively correlated with performance approach

goals ($r = .34$, $p < .05$), performance avoid goals ($r = .42$, $p < .01$), and behavioral disengagement ($r = .42$, $p < .01$), which offers that students who engage in class to avoid losing skills are more likely to adopt goals to outperform others, perform to avoid being viewed as incompetent and report remaining unfocused in class. As avoid goals have been associated with other avoid goals in previous research, these results are not surprising.

Table 1

Means, Standard Deviations, and Pearson Correlations among the Descriptive Variable, Independent Variables, and Dependent Variable

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
Descriptive											
1. Previous Grades	1.63	1.02	--								
Personal Achievement Goals											
2. Mastery Approach	4.39	.73	-.31	--							
3. Mastery Avoid	3.25	.99	.06	.12	--						
4. Performance Approach	3.05	1.15	-.14	.25	.34*	--					
5. Performance Avoid	2.76	1.08	-.03	-.08	.42**	.62***	--				
Classroom Engagement											
6. Behavioral Engagement	4.13	.81	-.34*	.34*	.14	.30*	.24	--			
7. Behavioral Disengagement	2.36	.88	.21	.05	.42**	.25	.38**	-.12	--		
8. Emotional Engagement	3.58	.98	-.11	.32*	.27	.44**	.24	.73**	-.13	--	
9. Emotional Disengagement	2.10	.78	-.07	-.00	-.02	-.37*	-.37*	.09	.18	-.13	--
Dependent Variable											
10. Writing Improvement	1.99	.87	-.28	.20***	.05	.02	.12**	.18	-.33*	.16	-.11

Notes. $N = 47\text{-}50$; *$p < .05$, **$p < .01$, ***$p < .001$

In addition, prior research has revealed strong correlations between achievement goals. Performance approach goals were positively associated with performance avoid goals ($r = .62$, $p < .001$), emotional engagement ($r = .44$, $p < .01$), and negatively related to emotional disengagement ($r = .37$, $p < .05$). In other words, students with goals to outperform others were more likely to adopt goals for working so as not to appear incompetent and likely to remain emotionally engaged, and they were less likely to be emotionally disengaged. These results suggest that students with performance approach goals were likely to remain focused on their classwork and apply strategies. Finally, performance avoid goals were positively associated with behavioral disengagement ($r = .38$, $p < .01$) and writing improvement ($r = .12$, $p < .01$), and negatively associated with emotional disengagement ($r = -.37$, $p < .05$). Therefore, students who were likely to adopt goals for performing only to avoid appearing incompetent were more likely to report not paying attention in class, though they were less likely report lack of strategy use. In addition, they were also more likely to experience improvement in writing.

Classroom engagement variables also revealed additional correlations with one another and with writing improvement. First, behavioral engagement was positively correlated to behavioral disengagement ($r = .73$, $p < .01$). These variables may be correlated because of the similar statements to assess each variable. Also, student behavioral disengagement was negatively associated with student writing improvement ($r = -.33$, $p < .05$). Therefore students reporting less time paying attention also experienced less writing improvement, which is supportive of prior research in engagement and performance. Finally, emotional engagement and emotional disengagement were not correlated with one another or with writing improvement.

Hierarchical regression analyses
Next, the researcher conducted a three step hierarchical linear regression with previous grades, student's academic achievement goals, and student engagement entered as independent variables, while student writing grade improvement was entered as the dependent variable. In the first step, students' previous grades were entered to account for existing differences in students. In step 2, achievement goals were entered into the regression because these personal goals are a reflection of the students' personal beliefs. Finally, engagement variables were entered in the third step because they were deemed as a greater environmental influence than that of the other variables.

As shown in Table 2, the addition of all variables in the third step accounted for 54% of the variance ($p < .05$) for student writing improvement. None of the personal achievement goals were found to provide a significant amount of variance in student writing growth, indicating students' personal achievement goals were not predictive of students' improvement in writing. To the contrary, students' reported classroom engagement was significantly predictive of students' writing growth.

For the engagement variables, behavioral engagement provided a significantly positive relationship in the final step ($= .96$, $p < .05$), indicating that students with greater behavioral engagement in the classroom were more likely to improve their writing scores throughout the school year. In addition, students' reported emotional engagement ($= -.86$, $p < .05$) and behavioral disengagement ($= -.69$, $p < .05$) revealed a negative relationship to that of writing improvement, indicating that students who reported greater strategy use and those who admitted not paying attention were less likely to have had a large amount of writing growth throughout the

school year. Emotional disengagement was not revealed as a predictor variable that that of writing improvement.

Table 2
Hierarchical Regression Predicting Writing Growth

Predictor variables	β Step 1	β Step 2	β Step 3
Step 1			
Previous Grades	-.23	-.28	-.09
Step 2			
Performance Approach		-.21	.17
Performance Avoid		.11	-.03
Mastery Approach		-.07	-.21
Mastery Avoid		.26	.36
Step 3			
Behavioral Engagement			.96*
Emotional Engagement			-.86*
Behavioral Disengagement			-.69*
Emotional Disengagement			-.29
R^2	.05	.11	.68
ΔR^2		.06	.57*

Notes. β indicates standardized regression coefficient.
Gender coded males = 1, females = 2.
* $p < .05$.

Discussion

The purpose of this research study was to expand the understanding of personal achievement goals and their influence on student writing achievement for struggling writers. In addition, the researcher was interested in combining achievement goals with the motivational variable of student engagement to understand the relationship of achievement goals and student engagement to that of student writing improvement. Results from this study do offer interesting findings in explaining the influence of student writing improvement throughout the school year. The researcher accounted for students' previous grades in the research study and only included those students who were enrolled in regular English classes.

One purpose of the research study was to determine whether personal achievement goals were related to writing improvement. However, no significant relationship was found to suggest that students in this research study with an increased writing score adopted the same types of personal achievement goals from previous research. Though previous research in achievement goals suggests that mastery approach and performance approach goals may be positively related to student performance (Huang, 2012), perhaps students' increase in writing scores may provide a different view of student motivation. Future researchers may want to consider how other motivational factors may affect student improvement in writing or try to understand how students' motivational variables may affect improvement in assessment grades in other subject areas. In addition, because research suggests that achievement goal adoption for middle school students may differ from that of other grade levels, (Paulick et al., 2013), perhaps additional

research studies should devote a greater understanding to this group of students to help in determining whether other motivational factors may affect their performance differently than students in elementary or secondary grades.

In addition to achievement goals, the relationship between student engagement and writing improvement was also explored. The addition of student engagement variables allowed the prediction model to attain significance in accounting for an overall explanation of predictors of student writing growth. In other words, student engagement and student achievement goals better related to student writing growth than did a single variable. Writing teachers may consider the influence of both classroom engagement and achievement goals to improving student writing in their classrooms. On an individual level, student behavioral engagement was a strong positive predictor of student writing improvement from fall to spring. Therefore, students with greater overt writing strategies may be more likely to attain growth in writing throughout the school year. These results are important for teachers in that they help support previous research that indicates the importance of strategies to performance in the classroom (Fried & Chapman, 2012). Writing teachers may work to develop lessons to engage students in the learning process by keeping them interested and encouraging them to pay greater attention during lessons. In addition, student behavioral disengagement was revealed as a significant negative predictor for students' writing improvement. In other words, those students in the research study who reported they were unlikely to experience having their minds wander in class or who reported they were unlikely to miss class were more likely to have an increase in their writing scores from fall to spring. As teachers encourage students to be present in class, they may be more likely to understand how to improve their writing, lending to an increase in scores. Vue et al. (2016) suggest that specifically for students with learning disabilities, middle school writing teachers may integrate technology to keep students engaged in writing and focused on the writing process.

Though results support previous research, suggesting that student behavioral engagement is positively associated and student behavioral disengagement negatively associated with student academic outcomes (Goldenburg et al., 2011), the current study revealed emotional engagement as a negative predictor of students' learning improvement. Previous research in engagement associates student's emotional engagement with that of greater learning strategy use, but perhaps learning strategies may be revealed differently in a writing class in which students are writing toward a prompt during one writing period. Future research may utilize student engagement in learning another aspect of the writing process to better understand whether emotional engagement may be different in the writing classroom. Emotional engagement was not revealed as a significant predictor of emotional disengagement, and perhaps students attaining the greatest writing growth may not yet incorporate writing strategies covertly to remain emotionally engaged in the content. Overall, the current research study provides researchers with additional information on the influence of engagement to student writing improvement.

As most previous research has explained achievement through grades (Lam & Law, 2007), this research is important because of its explanation of writing achievement through writing score improvement or growth over time. In an age of standardized testing and increasing teacher pressure to raise student grades, researchers in education should help teachers to understand what student factors may help increase student writing achievement.

Limitations

Despite the fact that results offer an understanding of relationships between student motivation and writing improvement, some limitations of the current study should be considered. One limitation is that student writing is a complex task and process, though recent research studies support the fact that students can possess motivation for various steps of the writing process (Bruning et al., 2013). Because the current study only assessed the result of writing, measured by student performance at two time periods, future research studies may research motivation of students throughout the writing process. In addition, the current research only utilized a sample from one school district. In spite of the fact that the sample included students from sixth, seventh, and eighth grades, the results may not generalize to other student populations in areas outside of the current district. In addition, the current demographic questionnaire did not ascertain information regarding students with learning disabilities, including special education students enrolled in the classes, which may have impacted some students' writing performance. Further research should investigate the relationships of student achievement goals and engagement to student writing improvement in specific student populations, such as those with learning disabilities to develop better strategies for improving writing. Finally writing improvement was measured by subtracting students' writing score from one time point to another. Other limitations include students' prior writing instruction and teacher differences which may exist in teaching writing. Though all students wrote to the same writing prompt at each time point, the writing prompts were somewhat different and differences in scores may have resulted in students' preference or better understanding of writing toward one of the two prompts.

Conclusion

Despite some limitations in the current research study, the does provide researchers with an additional understanding of how middle school students' personal achievement goals and student engagement in the classroom relate to student writing improvement. Because these variables had not been previously combined to understand their relationship to writing improvement, this research offers teachers and researchers in writing an opportunity to understand how one may improve writing in the middle school classroom. As most previous research has explained achievement through grades (Lam & Law, 2007), this research adds to the existing body of research in writing and motivation because of its explanation of writing achievement through writing score improvement or growth over time. In an age of standardized testing and increasing teacher pressure to raise student grades, researchers in both general and special education should help teachers to understand what student factors may help increase student writing achievement.

In order to assist middle school students to increase their performance in writing, teachers may use motivational theories to help students make necessary gains to attain greater achievement in writing scores. Applebee and Langer (2006) suggest that middle school writing teachers should be able to offer more freedom to their students by giving them more choice, rather than only focusing on preparing them for writing prompts. Various writing techniques may be used to improve student engagement and motivation in the writing classroom. By encouraging students to use more voice in their writing and write on topics of their choice, middle school students may become more motivated to write (Ruben & Moll, 2013). To further increase student behavioral engagement for struggling writers, writing classrooms may offer students more choice to increase their perseverance in writing. In addition, writing teachers should continue to teach

students strategies to use in the classroom that may help them remained focused on the writing tasks and assignments in order to assist students in gaining greater writing performance, while offering them greater autonomy to create their own unique pieces of writing (Zumbrunn & Krause, 2012).

To ensure that middle school students begin to make greater progress in their writing performance each school year, writing teachers should continue to encourage students to pay attention in class and may do so through various motivational strategies. With greater focus in the curriculum for students to write for specific prompts, teachers should find ways to help students write for pleasure. Keeping middle school students engaged in the writing classroom may help schools to increase students' writing scores nationwide.

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Gender Differences in the Adoption of Learning Approaches among Students Who Are Deaf

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Abstract

Underpinned by Biggs 3P model on learning, this survey sought to explore gender differences in the adoption of learning approaches among students who are deaf in a tertiary institution in Ghana. Data were gathered from 31 out of 41 students who are deaf. Participants were randomly sampled from levels 200, 300 and 400. Data were gathered through ASSIST (1998) questionnaire. Data were analyzed using independent samples t-test of SPSS 20. Findings of the study indicated that generally male and female participants did not display significant differences in their adoption of approaches to learning. The study recommend that further study should be conducted using a larger sample.

Keywords: Gender, Learning approaches, deaf students

Gender Differences in the Adoption of Learning Approaches among Students Who Are Deaf

Supported by Biggs 3P model on learning, the current study explored gender differences in the adoption of learning approaches among students who are deaf in a tertiary institution in Ghana. Different studies have shown that male and female students learn differently from each other (Severiens, & Dam, 1994; Ebel, 1999; Gurian & Stevens, 2004). However, such studies did not make known the approaches male and female students adopt in learning at the tertiary level. The problem in the present study was that studies to explore gender differences in the adoption of learning approaches among male and female students at the tertiary level in Ghana is scant. Few studies that had been conducted on gender differences in the adoption of approaches to learning were conducted elsewhere but not in Ghana (e.g. Biggs, 1987; Byrne, Flood, & Willis, 2002; Chio & Forde, 2002; Kreber, 2003; Sadler-Smith, 1996; Veloo, Krishnasamy, & Harun, 2015; Zeegers, 2001).

The impact of gender has been inconsistent in relation to determining different approaches to learning among students. Some studies on gender differences in the adoption of approaches to learning identified female students as adopting a deeper analytical approach than male students and that female students demonstrate more achievement orientation (Sadler-Smith, 1996; Byrne, Flood, & Willis, 2002). Chio and Forde (2002) and Kreber (2003) identified no clear gender

differences. Students' approaches to learning have been shown to be dependent on a number of factors including gender (Biggs 1987; Zeegers, 2001).

In this study, the terms "learning approaches", "approaches to learning" and "approaches to studying" were used interchangeably to refer to the ways students who are deaf learn at the university level. Different studies were conducted to explain students' approaches to studying (Ausbel, 1968; Wittrock, 1974; Marton & Saljo, 1976). Ausbel (1968) used the terms "meaningful" and "rote learning" to explain students leaning. Wittrock (1974) explained that learning was "generative" and "reproductive processing". Marton and Saljo (1976) grouped the concept of learning approaches into two: Surface and Deep approaches. Biggs (1987) studied the deep and surface approaches to learning and came out with a third approach to learning as strategic (achievement) approach. The deep approach to learning requires that students get understanding of what they learn and draw their own conclusions. Surface approach, on the other hand, requires that students memorise what they learn and reproduce them whenever required. Strategic approach learners, in their quest for attaining high academic grade, choose to either use the deep or surface or integrate the two learning approaches in order to be successful.

In this study, the word "deaf" is used to refer to students whose level of auditory perception range from severe to profound and rely on Sign Language interpreting services for academic information. One research question on gender differences in the adoption of learning approaches was raised to guide the study. The research question was: *What differences exist among male and female deaf students in the choice of their learning approaches?* One null hypothesis was raised in the study. The hypothesis was: H_01: *There is no statistically significant difference between male and female deaf students with regards to their approaches to learning*.

Veloo et al. (2015) conducted a study on gender differences and learning approaches among University Utara Malaysia (UUM) undergraduate students in English writing performance. The study involved 241 (32.8% male & 67.2% female) undergraduate students of UUM who were taking the Process Writing course. The study used Biggs, Kember, and Leung (2001) Two-Factor Study Process Questionnaire (R-SPQ-2F). Findings of the study indicated that female students preferred the surface approach to learning whereas male students preferred the deep approach to learning. The gap in Veloo et al. (2015) study was that participants were regular students. Participants in the current study are students who are deaf. Again, Veloo et al. conducted their study in Asia whereas the present study was conducted in Africa

In another study, Dorval (2000) found that in language learning tasks connected with problem-solving, male and female students showed clear differences in their approaches to learning tasks. Male students produced mass of short spurts of speech while female students produced big blocks of talk, were obedient, and were much attentive in listening and sympathizing. Dorval further explained that male students preferred learning tasks connected with competition in hierarchical groups, while female students learn by collaboration in small groups in which mutual liking is important.

Cano (2007) conducted a study on neuroticism, learning approaches and academic achievement as related to gender and culture. The sample selected for the study was 400 students of eighth class belonging to urban and rural area of Punjab. School records and Eysenck's personality inventory were used for data collection. Results revealed a significant difference between boys

and girls of rural areas on academic achievement and approaches to learning. However no figures were quoted in their study. Cano did not consider the learning approaches of deaf students in a university.

Findings of previous studies concerning gender differences in approaches to learning are less clear. By comparison, researches using versions of the Revised Approaches to Studying Inventory (RASI) and Approaches and Study Skills Inventory for Students (ASSIST, 1998) identified males scoring higher on Deep Approach and females scoring higher on surface approach (Duff, 1999, 2002; Sadler-Smith, 1996; Sadler-Smith & Tsang, 1998). Findings of the present study would either be in support or otherwise of the previous studies.

Method

The study surveyed respondents to explore gender differences in the adoption of learning approaches between male and female students who are deaf in a tertiary institution in Ghana. Thirty-one participants were randomly sampled from a population of 41 students (22 males and 19 females) who are deaf. The sample comprised 21 males and 10 females aged between 21 and 39 years with an average age of 25 years. All the participants had severe to profound bilateral hearing loss. Respondents preferred mode of communication was Ghanaian Sign Language (GSL). None of the respondents had additional disabilities such as blindness, learning disability and physical disability. All the participants had their secondary school education in one Secondary Technical School for the Deaf in Ghana. Two of the participants had post-Secondary education in a public College of Education in Ghana. The remaining 29 participants had only Secondary School education before entering a tertiary institution. All participants depended on interpreting services during lecture and examination periods.

Research Instrument
The research instrument used to gather data for this study was Approaches and Study Skills Inventory for Students (ASSIST, 1998). The ASSIST (1998) was adapted for the study (see Appendix A for adapted version of ASSIST). The ASSIST derives from Marton & Saljo's (1976, 1997) ideas on approaches to learning, combined with Entwistle and Ramsden's (1983), and Ramsden and Entwistle, (1981) descriptions of approaches to studying. The ASSIST has shown excellent reliability and stability (Richardson, 2009). It was developed specifically for use in educational settings and has been previously used in determining the approaches to studying among tertiary students with disability (Richardson, 2005). The ASSIST consists of four sections, but only the section measuring the three approaches to learning was used in the present study because of its simple language and structure. Majority of students who are deaf in Ghana have difficulties with English Language during their studies on university campuses (Oppong, 2003). The ASSIST was used to determine deaf students' approaches to learning. This was because of the simplicity its language and structure of questions. Few expressions that could pose challenge for the participants were reworded to meet the participants' learning needs. Thirty-seven out of the fifty-two question items were reworded. They were items: 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 22, 23, 25, 28, 29, 30, 31, 32, 33, 34, 35, 37, 38, 39, 41, 42, 43, 46, 48, 50 and 52. Furthermore the easy self-assessed scoring system facilitated a reliable classification for educational purposes.

Question items on the ASSIST comprised fifty-two (52) different question items rated (1 = strongly disagree, 2 = disagree, 4 = agree and 5 = strongly agree). The 52 question items are grouped under three main learning approaches (deep, strategic and surface learning). Deep approach to learning has four sub-scales. The subscales seek meaning, relating ideas, use of evidence and interest in ideas. Each sub-scale has four question items. They seek meaning (4, 17, 30, and 43), relating ideas (11, 21, 33, and 46), use of evidence (9, 23, 36, and 49) and interest in ideas (13, 26, 39, and 52). Strategic approach to learning has five sub-scales. The sub-scales: are organizing studying, time management, alertness to assessment demands, achieving, and monitoring effectiveness. Each of the five sub-scales under the strategic approach to learning has four question items. They are: organizing studying (1, 14, 27, and 40), time management (5, 18, 31, and 44), alertness to assessment demands (2, 15, 28, and 41), achieving (10, 24, 37, and 50), and monitoring effectiveness (7, 20, 34, and 47). Surface approach to learning has four sub-scales. They are: lack of purpose, unrelated memorizing, syllabus-boundness, and fear of failure. Each of these sub-scales has four question items. They are: lack of purpose (3, 16, 29, and 42), unrelated memorizing (6, 19, 32, and 45), syllabus-boundness (12, 25, 38, and 51) and fear of failure (8, 22, 35, and 48).

The ASSIST (1998) is a standardized instrument and as such had been validated (Richardson, 2009). Cronbach alpha coefficients were extracted using SPSS 20 to test the internal reliability of the 52 items. This procedure is applied to test the extent to which items within a scale are measuring the same dimension. In the case of the ASSIST questionnaire, for example, 52 items in the questionnaire measured students' approaches to learning. The Cronbach alpha coefficient indicates the extent to which they do so. The ASSIST contained 16 items that measure deep approach to learning, 20 items that measure strategic approach to learning and 16 items that measure surface approach to learning. The deep approach had a Cronbach Alpha of 0.84, strategic approach had Cronbach Alpha of 0.80 and surface approach had a Cronbach Alpha of 0.87. Table 1 illustrates the Cronbach Alpha of the questionnaire.

Table 1
Cronbach Alpha of ASSIST

Items	Number of items	Cronbach's Alpha
Deep approach	16	0.84
Strategic approach	20	0.80
Surface approach	16	0.87

Source: *Authors' Computations from field Data, March 2015*

Procedure for Data Collection
Permissions were sought from the heads of departments whose students participated in the study through an introductory letter from the Department of Special Education. The researchers trained three Sign Language interpreters on how to administer the ASSIST. The training was done in a day. The researchers explained the purpose of the study to them. The researchers gave the questionnaires to the trained Sign Language interpreters to administer on the participants in their respective departments (Special Education, Graphic Design and Information and Communication Technology). The questionnaires were administered and collected on 10th December, 2014. Each of the Sign Language interpreters administered the questionnaires on deaf students in their respective departments. This was because those Sign Language interpreters were assigned to those respective departments as interpreters for the students who were deaf. Also the deaf in

those respective departments were familiar with the interpreters. This helped the participants to feel at home in responding to the question items. Again, the researchers met the participants and the Sign Language interpreters on 12th December, 2014. The purpose to of the meeting was to ask for the participants academic records. The researchers explained that any data that would be collected was meant for research purposes. The researchers explained to the participants of their confidentiality. Participants agreed and promised to meet the researchers provide the printed copies of their results. The researchers spent one week (Monday 15th December, 2014 to Friday 19th December, 2014) to gather the printed results from the participants.

Data Analysis
Independent samples t-test was used to analyze data on gender differences in the adoption of approaches to learning among participants. Independent samples t-test was employed because the study surveyed gender differences in the adoption of learning approaches among participants from different Departments in a tertiary institution.

Ethical Consideration
Ethical clearance was sought from the various Departments before conducting this study. The rights of respondents at every stage of this study were particular treated with utmost care.

Analysis and Discussion of Results

H_01: *There is no statistically significant difference between male and female deaf students with regards to their approaches to learning*.

To establish the gender differences in the three approaches (deep, strategic and surface) to learning among deaf students at UEW, an independent t-test was used. Table 2, shows that female deaf students who adopted the deep approach to learn were less ($M_f = 3.78$) than their male counterparts who employed deep approach to learn ($M_m = 4.07$). Table 2 also shows that the mean for male deaf students ($M_f = 4.18$) was higher than the mean for female deaf students ($M_m = 3.85$) regarding the use of strategic approach to learning. Considering the surface approach to learning among deaf students at UEW, it can be deduced from Table 2 that majority of male deaf students employed the surface approach to learning than their female counterparts. This can be seen in their means ($M_m = 3.41$, $Mf = 3.11$).

Table 2.
Independent Samples T-Test on Gender Differences in Approaches to Learning

Approaches to learning	Gender	N	Mean (M)	t-value	Sig value
Deep Approach	Male	21	4.07	1.52	1.37
	Female	10	3.78		
Strategic Approach	Male	21	4.18	1.89	0.08
	Female	10	3.85		
Surface Approach	Male	21	3.41	1.67	0.11
	Female	10	3.11		

To test whether the differences in mean of approaches to learning between the male and female deaf students were statistically significant, an independent-samples t-test was performed. The results of this test revealed that there was no statistically significant difference in the means of approaches to learning between the two gender groups. This means that the null hypothesis was accepted. Table 2, shows that there were no significant differences between deep approaches, strategic approaches and surface approaches to learning among male and female participants. The t value for the three approaches- deep, strategic, and surface respectively as indicated in Table 2 are: $t = 1.53$, $p = 1.37 > 0.05$; $t = 1.891$, $p = 0.08 > 0.05$; $t = 1.67$, $p = 0.41 > 0.05$. These findings indicated that generally male and female deaf students at University of Education, Winneba did not display significant differences in approaches they adopted to learning. Although the mean for male participants in the study was a little bit higher than the mean of the female counterparts. Both male and female students adopted deep, strategic and surface approaches to learn.

Discussion

Results from respondents indicated that generally male and female deaf students at University of Education, Winneba did not display significant differences in the three approaches to learning - deep, strategic and surface. Findings of the present study are not in congruence with what is in literature. For example, Byrne et al. (2002) identified that male students adopted deep and strategic approaches to learning while their female counterparts adopted surface approach. Also, Veloo et al. (2015) revealed that there was a significant difference in learning approaches of male and female students. Veloo et al. found that male students preferred deep learning approach whereas female students preferred surface approach to learning.

Findings of this study can be explained by the 3P model of Biggs. Considering the gender and approaches to learning among deaf students at UEW, it was observed that it could be liken to presage stage of the 3P model. At the presage stage, the concept refers to how individual deaf students differ in approaching learning in the same teaching contexts, (i.e., preferred approach; Biggs, Kember, & Leung, 2001). The implication here is that deaf students' presage factor (gender, prior-knowledge, abilities, intelligence, personality and home background, represents student incoming personal learning influences) would serve as a basis for determining the learning approach in the university. However, this study gave a different account which suggests that there is no significant difference in gender on the approaches to learning employed by deaf students in UEW. Thus, even though the 3P model identifies factors that could account for deaf students employing different learning approaches, the current study did not support that account.

Conclusion and Recommendations

Also, the findings indicated that generally male and female deaf students at University of Education, Winneba did not display significant differences in approaches to learning where deep, strategic and surface approaches were compared. This means that both male and female deaf students were keen in employing the strategic and deep approaches to learning than the surface approach to learning. There were many direct and indirect effects from the variables that are

being examined which the researchers did not take control of. For example, in this study, the researchers found the effects of age of students, background experience, teaching methods, students' perception of academic environment, students learning styles, availability of proficient sign language interpreter, parental support and students' motivation. Thus, it is important for future researchers to examine variables which could possibly moderate or confound the relationship between the variables listed and the learning approaches of student who are deaf.

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Appendix A (Adapted ASSIST)
Approaches to learning

1. I manage to find conditions for learning which allow me to learn easily.	5	4	2	1
2. When working on an assignment, I keep in mind how best to impress the marker.	5	4	2	1
3. Often I find myself thinking whether the work I do in the university is really important.	5	4	2	1
4. I usually try to understand the meaning of what I have to learn.	5	4	2	1
5. I organise my study time carefully to make the best use of it.	5	4	2	1
6. I concentrate on just memorising most of what I have to learn.	5	4	2	1
7. I go over the work I've done carefully and see if the work is meaningful.	5	4	2	1
8. Often I feel the amount of material I have to learn are too much for me	5	4	2	1
9. I look at evidence in books carefully and try to reach my own conclusions.	5	4	2	1
10. It's important for me to feel that I'm doing the best I can on the courses.	5	4	2	1
11. I try to relate ideas I come across to those in other topics and courses whenever possible.	5	4	2	1
12. I read very little beyond what is actually required to pass exams.	5	4	2	1
13. Regularly I find myself thinking about ideas from lectures when I'm doing other things.	5	4	2	1
14. I think I'm quite systematic and organised when it comes to revising for exams.	5	4	2	1
15. I look carefully at lecturers' comments on course work to see how to get higher marks next time.	5	4	2	1
16. I find much of the work in the university not interesting.	5	4	2	1
17. When I read a book, I try to find out for myself exactly what the writer means.	5	4	2	1
18. I'm pretty good at working whenever I need to.	5	4	2	1
19. Much of what I learn is not important to my course.	5	4	2	1
20. I think about what I want to get out of this course to keep my studying well focused.	5	4	2	1
21. When I'm working on a new topic, I try to see in my own mind how all the ideas fit together.	5	4	2	1
22 I often worry about whether I'll ever cope with the work properly.	5	4	2	1
23. Often I find myself questioning topics lecturers teach.	5	4	2	1
24. I feel that I'm getting on well, and this helps me put more effort into the work.	5	4	2	1
25. I concentrate on learning information I have to know in order to pass my exams.	5	4	2	1
26. I find that studying academic topics can be quite exciting at times.	5	4	2	1
27. I'm good at doing reading assignments given by lecturers.	5	4	2	1
28. I keep in mind who will mark my assignment and what their expectations are.	5	4	2	1
29. When I look back, I sometimes wonder why I ever decided to come to university.	5	4	2	1
30. When I am reading, I stop from time to time to think about what I am trying to learn from it.	5	4	2	1
31. I work little by little through the semester, rather than leave it all until the last minute.	5	4	2	1
32. I'm not really sure what's important in lectures so I try to write all I can.	5	4	2	1
33. Ideas in course books make me form new ideas.	5	4	2	1
34. Before I start to work on an assignment and exam question, I think first how best to answer it.	5	4	2	1
35. I often seem to panic if I am late to submit my work.	5	4	2	1
36. When I read, I examine the details carefully to see how they fit in with what's being said.	5	4	2	1
37. I learn hard in order to pass my exams.	5	4	2	1
38. I plan my learning closely to just what seems to be required for assignments and exams.	5	4	2	1
39. Some of the ideas I come across on the course are really interesting.	5	4	2	1
40. I usually plan out my week's work in advance, either on paper or in my head.	5	4	2	1
41. I pay attention to what lecturers seem to think is important and concentrate on that.	5	4	2	1
42. I'm not really interested in some courses, but I have to take them for other reasons.	5	4	2	1
43. Before working on an assignment, I first try to know why that assignment was given.	5	4	2	1
44. I generally make good use of my time during the day.	5	4	2	1
45. I often have trouble in making sense of the things I have to remember.	5	4	2	1
46. I like to play around with pieces of idea of my own even if they don't get me very far.	5	4	2	1
47. When I finish a piece of work, I check through to see if it really meets the requirements.	5	4	2	1
48. Often I awake up from sleep thinking about work I won't be able to do.	5	4	2	1
49. It's important for me to be able to follow the argument, and see the reason behind things.	5	4	2	1
50. I don't have any difficulty in motivating myself to learn.	5	4	2	1
51. I like to be told precisely what to do in essays and assignments.	5	4	2	1
52. I sometimes get attached on academic topics and feel I would like to keep on studying them.	5	4	2	1

Using Question Generating to Enhance the Reading Comprehension of Students with Autism Spectrum Disorder (ASD)

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Abstract

Teaching students to generate questions while reading is an effective way to improve reading comprehension. This article describes an intervention protocol for teaching students with autism spectrum disorder (ASD) to use a question generating strategy with additional support provided through the use of explicit instruction and peer-mediated instruction and intervention (PMII). Instructional adaptations, tips for improving student motivation, and suggestions for promoting the generalization of learned skills will also be shared.

Using Explicit Instruction and Peer Supports to Teach a Reading Comprehension Strategy to Students with Autism Spectrum Disorder

Reading is a complex process that requires intentional and thoughtful interaction between the reader and the text (Harris & Hodges, 1995; Perfetti, Landi, & Oakhill, 2013). Students with autism spectrum disorder (ASD) often require intensive intervention because of deficits in language, communication, and social skills needed for effective comprehension (Chiang & Lin, 2007; Randi, Newman, & Grigorenko, 2010; Ricketts, Jones, Happé´, & Charman, 2013; Whalon, Al Otabia, & Delano, 2008). Studies have shown that for students with ASD, comprehension problems outweigh decoding problems (El Zein, Solis, Vaughn, & McCulley, 2014; Gately, 2008; Nation, Clarke, Wright, & Williams, 2006; Norbury & Nation, 2011; O'Conner & Klein, 2004; Wahlberg & Magliano, 2004). In other words, many students with ASD develop basic to advanced decoding skills, but their comprehension of the text often lags behind. Therefore, it is essential that teachers use effective strategies for teaching reading comprehension to address this identified need in students with ASD. There is converging evidence for a variety of strategies to support the development of reading comprehension (NRP, 2000; Perfetti et al., 2013). However, to benefit from the use of these strategies, students with ASD will likely need additional instructional supports to address their unique learning profiles (Brownell, Smith, Crockett, & Griffin, 2012; Knight, & Sartini, 2015; Roux, Dion, Barrette, Dupere, & Fuchs, 2014). This article describes an intervention protocol for teaching students with ASD to use a question generating strategy to improve reading comprehension skills with additional support provided through the use of explicit instruction and peer-mediated instruction and intervention (PMII).

What is Question Generating?

According to the National Reading Panel (NICHD, 2000), there is strong empirical evidence for the use of question generating strategies to support reading comprehension. Reading is an active process. Good readers think about what they're reading, monitor their comprehension by asking themselves questions as they read, and use that information to develop an understanding of the text (Armbruster, Lehr, Osborn, & Adler, 2001). Question generating strategies can be implemented with all learners and across all content areas. There are four main question types (right there, think and search, author and me, on my own) that can be used to teach question generation. The intervention protocol shared in this article involves teaching students how to use the right there question generating strategy. This question type was selected because it targets the core information of a text. Using the right there question generating strategy helps students comprehend literal information found directly in the text. As students learn how to use the right there question generating strategy, teachers may certainly adapt this protocol to add the other question types to the intervention.

Question Generating Intervention Protocol for Students with ASD

Although some teachers may think the question generating strategy would be problematic for students with ASD due to their social communication impairments, it has been found to be effective when paired with appropriate supports (Whalon & Hanline, 2008). To increase the likelihood that students with ASD will learn how to use the question generating strategy, teach the strategy through the use of explicit instruction and PMII. A detailed intervention protocol is described in the sections that follow.

Phase 1: Explicit Instruction

Explicit instruction is essential when teaching reading comprehension strategies and is preferable to instruction that requires students to deduce the purpose of the lesson on their own (Archer & Hughes, 2011; Pilonieta & Medina, 2009). With explicit instruction the teacher states the learning objective(s), activates students' background knowledge, models and demonstrates skills being taught, provides guided and independent practice with immediate feedback, and plans for maintenance and generalization of the targeted skills (Engelmann & Carnine, 1991). This instructional format is effective for all students and is essential for students with ASD for the following reasons: (1) it includes frequent opportunities to respond, which improves joint attention skills during group instruction; (2) through modeling and supported guided practice, students are set up for successful responding which may reduce fear and anxiety; and (3) with immediate feedback given during guided and independent practice, students are positively reinforced and become confident in their performance. Below are steps to follow when delivering explicit instruction to teach the right there question generating strategy.

Step 1: State the learning objective. Tell the students they are going to learn how to use a strategy that will help them better understand what they are reading. Here is a sample script: *Today you are going to learn a new strategy that will help you improve your understanding of what you are reading. The strategy is called the right there question generating strategy. You will learn how to ask specific questions while you are reading about information found directly in the text. Doing so will improve your understanding about what you are reading.*

Step 2: Activate background knowledge. To motivate students to engage in the lesson, begin by activating their background knowledge about question generating. Here is a sample script: *What do teachers usually do when they are reading with their students?* (allow responses) *You're exactly right. Teachers always ask students questions during reading activities. Give me an example of a question a teacher may ask during a read aloud* (allow responses). *Yes, those are all great examples of questions teachers may ask during a reading activity. Now I am going to teach you how to ask a specific type of question while you are reading to help you improve your understanding of the text.*

Step 3: Modeling. First define right there questions: questions about the reading selection that can be found directly, or right there, in the text. Present a visual support that illustrates this definition (see Figure 1). Visual supports allow students with ASD to utilize their strengths in visual processing to make meaning of the academic content presented (Whalon et al., 2009). Next, visually display a short passage for all students to see, read the passage aloud, write a question that can be answered using information directly found in the text, read the question aloud, and highlight the answer to the question showing that it is indeed found right there in the text. Then say something such as, *"The question I asked* (point to and restate the question) *is a right there question because it is found right there in the text* (point to the highlighted answer). Give several more examples using these procedures to effectively model the use of the right there question generating strategy. To keep students engaged during the modeling of several examples, use choral reading of the short passages, choral reading of the questions, and allow students to volunteer to answer the questions. After each question is answered, ask *"Why is this question a right there question? Because it is found…*(choral response: right there in the text).

Figure 1. *Visual Support for Right There Questions*

Step 4: Guided practice. During guided practice, use scaffolding to move from modeling how to use the right there question generating strategy to gradually increasing the students' role in using the strategy. As was done during modeling, visually display short passages the students will use to put the right there question generating strategy into practice. To ensure immediate student success and gradually increase independent use of the strategy, use most-to-least

prompting. This means that you provide high levels of support with the first couple of practice opportunities, and with each additional opportunity, begin to fade out the support given to students. Keep in mind that some students will continue to need higher levels of support than others, so you will have to differentiate the support given to students based on their level of independence. Below is a most-to-least prompts hierarchy to use during guided practice:

1. Read the passage aloud, highlight information in the text the students will use to generate a right there question, and give a sentence starter for the question (e.g. "What color….?" "Where did…? What happened after…?"

2. Read the passage aloud, highlight information in the text the students will use to generate a right there question, and ask the students to generate a question.

3. Read the passage aloud and ask the students to generate a right there question.

4. Tell the students to read the passage silently and ask students to generate a right there question.

Regardless of level of support provided, give immediate feedback to students each time they practice using the right there question generating strategy. This is done by giving positive and correct feedback. If a student uses the strategy correctly, give specific academic praise (e.g. "That's an excellent right there question! The answer can be found right there in the text."). If a student makes a statement about information from the text but does not generate a question, say "You gave accurate information from the text, now let's state it as a question." Model how to turn the statement into a question and have the student imitate. If a student asks a question but the answer cannot be found directly in the text, say, "That is a good question, but the answer cannot be found directly in the text. Can you ask a question that can be answered using information right there in the text?" If the student is able to do so, give specific academic praise. If the student is unable to do so, highlight a small section of the text and ask the student to generate a question about the highlighted portion.

There are a variety of ways to increase student engagement during guided practice. Use small dry erase boards, tablets, or other writing tools to allow students to write their questions and hold them up when prompted to do so. This ensures all students respond each time, and it is more feasible to give immediate feedback by scanning all of the responses. Another option is to use think-pair-share. After the passage is read, give the students a minute to think about a right there question to ask, followed by a minute to share their responses with a partner. The teacher circulates during the sharing to give immediate feedback to students. Lastly, if more than one adult is working in the classroom, split the class into two groups for guided practice to increase opportunities for individual student responding and frequency of individualized immediate feedback.

Step 5: Independent practice. Move to independent practice when at least 80% of the students are successful using the right there question generating strategy without needing support. Continue to provide guided practice for those who require support while the rest of the class is working on their independent practice. When moving on to independent practice, give the students a short reading selection on a handout or have them read a small selection from a book.

Instruct students to use the right there question generating strategy to write three right there questions about the assigned reading. For students who are unable to write, assign a peer as a scribe or have the student record their questions using a table or other assistive technology device. When students finish their independent practice, provide immediate positive feedback and corrective feedback as appropriate. Alternatively, when students finish their independent practice, provide a self-correction tool that includes all possible right there questions that could have been generated from the passage to increase the efficiency of the immediate feedback.

Step 6: Closure. To close the lesson, review the definition for right there questions eliciting student responses. Have a few students share the right there questions they generated from the assigned passage, and call on other students to answer the questions showing where the answer is found in the text. Tell students that using the right there question generating strategy while they are reading various texts will help them better understand and remember the information from the text.

Depending on the students in the classroom, it may be necessary to deliver this lesson over multiple days until all students are successful during independent practice activities. Students in the class who learn the skill right away do not necessarily need to participate in the ongoing lessons. Those students can be given independent reading activities to practice generating right-there questions (and possibly additional reading comprehension skills) while the other learners receive more explicit instruction.

Phase 2: PMII During Partner Reading Activities

Teachers should continually make efforts to utilize the support of peers to positively impact academic learning and the development of social communication skills for students with ASD (Brownell et al., 2012). Using partner reading activities to allow students to practice using the right there question generating strategy is one way to set up successful peer-to-peer social interactions and work on developing reading comprehension skills at the same time. However, simply telling students to "go read with a partner," is often not enough support and structure to ensure the success of students with ASD with using the right there question generating strategy during partner reading activities. The students need clear procedural guidelines to follow, and the typically developing peers need to learn strategies and supports that will increase the participation and independence of students with ASD during the partner reading activities. This is done through the use of PMII, an approach in which peers are trained to provide support in the specific educational, behavioral, and/or social needs of students with ASD (Chan et al., 2009). When using PMII, teachers take an active role in setting up the structure of the peer interactions, preparing peers to use selected strategies, and providing ongoing feedback to ensure successful implementation. The steps for using PMII to support students with ASD in their use of the right there question generating strategy during partner reading activities are outlined below.

Step 1: Select peers to provide PMII. The number of peers needed to deliver PMII depends on the number of students with ASD in the class. Do not rely on one peer to always work with the same student with ASD. This is problematic because the student with ASD will be left without a partner if that one peer is absent, and it also limits opportunities for generalization if the student with ASD is only able to participate in the partner reading activity with one specified peer. Therefore, select two or three peers to be trained to deliver PMII to the child

with ASD. If there are several students with ASD in the class, it is not necessary to train two or three peers per child with ASD. Instead, the group of trained peers can partner with different students with ASD each session. If that is the case, select a total number of peers equal to the number of students with ASD plus two (to account for possible absences). Select peers with effective interpersonal communication and social skills, peers that are preferred by the student(s) with ASD, and peers who are interested in serving in this role.

Step 2: Train the typically developing peers. Provide training sessions with the typically developing peers prior to pairing them with students with ASD for the partner question generating activities. The purpose of the training is to give peers opportunities to practice using the strategies and supports that will be needed if students with ASD are unable to respond to or generate questions. More specifically, train the peers to use a series of least-to-most prompts if the student with ASD does not respond to a question generated by the peer or generate a right there question when it is his or her turn to do so. This means that you give the peers a series of steps to follow if the student doesn't respond to a question or generate a question. Each step provides higher levels of support. During the training, model the various prompts and have the peers practice using them through role play scenarios. Give immediate positive and corrective feedback as the peers practice using the prompts, continuing with role play until the peers are able to implement the steps with fidelity. Train peers to use the following least-to-most prompts when the student with ASD does not respond to a right there question generated by the peer, informing them to skip to step five as soon as the student is able to answer the question:

1. Get the student's attention and repeat the question.

2. Rephrase the question using simplified language.

3. If the student with ASD does not answer the question, give a choice of two possible answers.

4. If the student with ASD still cannot answer the question, state the answer and ask the student with ASD to repeat the answer.

5. Provide praise (say something nice) when the student responds to the question, even if help was needed.

Train the peers to use the following least-to-most prompts if the student with ASD does not generate a right there question when it is his or her turn to do so, informing them to skip to step six as soon as the peer is able to generate a right there question:

1. Encourage the student with ASD to ask a question.

2. Show the visual support (Provide partners with the visual support used to illustrate the meaning of right there questions that was introduced during the explicit instruction phase).

3. If the student is still unable to generate a question, re-read a sentence or two that the student can then ask a question about, and point to the visual support again.

4. Give a sentence starter.

5. Model a right there question that the student can imitate.

6. Provide praise when the student does ask a right there question, even if help was needed.

Figure 2 can be given to peers during the training. It includes the least-to-most prompts listed above with examples for each step.

Figure 2. *PMII Support.*

Difficulty	Peer Strategy	Example
Student with ASD does not respond to a right there question generated by the peer.	1. Get the student's attention and repeat the question 2. Rephrase the question using simplified language. 3. Give a choice for an answer. 4. Provide the answer and have the student repeat the answer. 5. Provide praise when the student does respond, even if help was needed.	1. Tap the student's arm, say the student's name, wait for eye-contact, and repeat the question. 2. The question was "Why was the boy disappointed?" The peer restates the question as "Why was the boy sad?" 3. "Was the boy sad because his Dad didn't come visit or because he lost his dog?" 4. "The boy was sad because his Dad didn't come visit. Why was the boy sad?" 5. "Good answer!"
Student with ASD does not generate a right there question when it is his/her turn to do so.	1. Encourage the student to ask a question. 2. Point to the visual support. 3. Re-read a sentence or two that the student can then ask a question about and point to the visual support again. 4. Give a sentence starter. 5. Model a right there question that the student can imitate. 6. Provide praise when the student asks a right there question, even if help was needed.	1. "John, ask me a right there question about what you just read." 2. Point to the visual support that illustrates the meaning of right there questions. 3. "Right here it says: *The family took an airplane to get to Florida.*" Point to the visual support and encourage the student to ask a question about how the family got to Florida. 4. "How did the family…" 5. "You can ask, How did the family get to Florida?" (the student imitates) 6. "Great question! I think the answer is _____. Am I correct?"

Step 3: Teach expectations for partner reading activities to whole class. Before the first partner reading activity, explicitly teach the following expectations and procedures for working with a partner to practice using the right there question generating strategy:

1. Students read together for 20 minutes.
2. One student reads aloud one page or section of the text and asks two right there questions related to what was just read.
3. The partner responds to the questions posed after each question is asked.
4. The partners switch roles for the next page or section of the text.

Choose two students to model the above procedures to allow the class to see what the steps actually look like. Guide the two students through the process to ensure successful modeling. Be sure to review the expectations and procedures prior to each partner reading activity for the days that follow as well.

Step 4: Teach expectations for using the self-monitoring tool. Provide partners with a self-monitoring tool that allows them to record their questions and answers for progress monitoring purposes (see Figure 3). Designate one partner to be the recorder for the session. The recorder writes down all of the right there questions that were asked, who asked them, who answered them, and whether or not they were answered correctly. Model how to fill out the self-monitoring tool prior to the first partner reading activity. Give the recorder a completed self-monitoring tool to use as a reference if needed. The self-monitoring tool provides the added structure needed for the students to focus on the objectives of the partner activity and also provides teachers with data that may be used for progress monitoring purposes.

Figure 3. *Self-Monitoring Tool.*

Right There Questions	Who asked the question?	Who answered the question?	Was it answered correctly?
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

10.			

Step 5: Monitor and provide feedback. During the 20-minute partner reading activity, circulate around the classroom to monitor the students' implementation of the right there question generating strategy and the degree to which they are following the expectations and procedures, including the use of the self-monitoring tool. Give positive and corrective feedback as needed. Give additional feedback to the peers trained to deliver PMII to positively reinforce them for using the least-to-most prompts hierarchy correctly and to give corrective feedback on the use of the prompts as necessary.

Implications for Practice

Due to the differing learning profiles of students with ASD, the intervention protocol may require instructional adaptations and supports to build student motivation and address individual needs and preferences. It is also essential that teachers systematically plan for the generalization of the skills learned as part of the intervention to optimize learning outcomes. The sections that follow include ideas for instructional adaptations, tips for improving student motivation, and suggestions for promoting the generalization of learned skills.

Instructional Adaptations
Students with ASD may require instructional adaptations to this intervention protocol based on their present levels of communication and reading comprehension abilities. For example, some students may need additional visual supports for question generating such as cue cards with question words on them (e.g. who, what, where, when, why), question stems (e.g. Where does the story…), or full questions written out that they read to their partner. Students who are nonverbal or have significant deficits in expressive communication will need augmentative and alternative communication supports added to the intervention protocol to provide opportunities for them to actively and meaningfully participate in the reciprocal interactions. This may include the use of simple to complex speech-generating devices that students use to ask and answer questions, sentence strips that are used to ask questions and provide responses to questions, or pictures and symbols that are used to engage in the question-answer partner activities.

Additionally, students who are nonverbal, and therefore unable to read aloud, can read silently when it is his or her time to read aloud. The partner will read the same section silently as well. Finally, some students comprehend better when reading silently. If that is the case for students with ASD or other peers in the class, the teacher should partner students together who prefer to read silently rather than aloud. They can read each section silently, and then engage in the question generating activity when both students have finished reading the section of the text.

Building Student Motivation
Students with ASD may also need additional supports to build their motivation to engage in the PMII activities. Due to the nature of their disability, students with ASD have a restricted range of interests. Although they have a more narrow focus on things that are of interest to them compared to typically developing peers, they have intense passions and fascinations related to what interests them that can and should be tapped into when motivation is a problem. This can be done by selecting texts that are aligned with their special interests, using visual supports related

to their interests, or using positive reinforcement procedures that provide access to their special interests after engaging in the PMII activities. Another way to build the motivation of students with ASD is to involve them in selecting their reading partners. Due to social anxiety, they may be more motivated to engage with a peer if they are able to select a peer who helps them feel comfortable. Of course teachers may select specific peers who have strong interpersonal communication and social skills to partner with students with ASD, however, the students with ASD can then make a choice given several options of peer partners.

Generalization of Learned Skills
It is essential that teachers plan for the generalization of the skills learned using this intervention protocol across different contexts and situations. For example, if the intervention is implemented using narrative texts, teachers should provide opportunities for students to use question generating when reading expository texts across different content areas. Additionally, although this intervention targets reading comprehension, it also has potential to improve social and communication skills for students with ASD. Due to the structured nature of peer interactions within the intervention protocol, students with ASD develop skills needed to generate and respond to questions during conversational exchanges with peers. With additional generalization training, these skills can be transferred to structured and unstructured interactions with peers (see Whalen, 2009 for ways to promote generalization of learned skills for students with ASD).

Conclusion

General education teachers and special education teachers often struggle with how to improve the reading comprehension of students with ASD. They may rely on teacher directed questions or resort to prompting heavily to get accurate responses- making students more passive in the learning process. The question generating strategy discussed in this article is flexible and can be adapted by teachers to fit their classroom schedule, teaching style, and specific needs of their students. Using the question generating strategy in combination with explicit instruction and PMII increases the active engagement of students with and without ASD in the learning process and supports the development of metacognitive strategies needed to comprehend text.

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Inclusion of Young Students with Simple Partial Seizures in the General Education Classroom

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Abstract

The participation of a student with simple partial seizures in the general education classroom can often be both challenging and rewarding for the student and teacher. This paper will address common characteristics of young students with simple partial seizures in elementary school and present basic solutions to improve the inclusion of these students in the general education classroom setting. Initially the definition and prevalence of simple partial seizures will be presented. The paper will then address symptoms and recommendations for children with simple partial seizures in the general education elementary classroom.

Inclusion of Young Students with Simple Partial Seizures in the General Education Classroom

Definition of Epilepsy and Partial Seizures
The definition and especially the prevalence of epilepsy and simple partial seizures may be surprising to many readers. The following is the definition and brief discussion of epilepsy and partial seizures:

Epilepsy is a seizure disorder. According to the Epilepsy Foundation of America, a seizure happens when a brief, strong surge of electrical activity affects part or all of the brain. Seizures can last from a few seconds to a few minutes. They can have different symptoms, too, from convulsions and loss of consciousness, to signs such as blank staring, lip smacking, or jerking movements of arms and legs. Partial seizures is one type of seizure. Partial seizures are so named because they involve only one hemisphere of the brain. They may be simple partial seizures (in which the person jerks and may have odd sensations and perceptions, but doesn't lose consciousness) or complex partial seizures (in which consciousness is impaired or lost). (National Dissemination Center for Children with Disabilities, 2010).

Worldwide, epilepsy affects 65 million people. In the United States, the disease affects about 2.2 million Americans. One in twenty-six people in the United States will develop epilepsy at some point in their lifetime. 50,000 people die from epilepsy-related causes in the United States every year. As noted, there are a variety of seizure types, one large group of them are simple partial seizures (Epilepsy Foundation, 2013). With these high numbers, one can note that the chances of a teacher having a young child with epilepsy in his/her class, at some time, are fairly likely.

The Individuals with Disabilities Education Act (IDEA) states that children who are determined to have disabilities receive special education if the condition negatively affects the educational

performance of the child. One such category, which includes a variety of specific disabilities, is *other health impairments*. As the reader will note, the following definition of other health impairments in IDEA includes mention of epilepsy.

> *Other health impairment* means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that—
>
> (i) Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, **epilepsy**, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and
>
> > (ii) Adversely affects a child's educational performance. [§300.8(c)(9)]
> >   (CFR §300.7 (a) 9) (IDEA, 2004).

Symptoms of Simple Partial Seizures

According to the Epilepsy Foundation of America, epilepsy can affect an individual in certain ways. The following characteristics – either all or some - may be present in simple partial seizures:

- "Blackouts" or periods of confused memory;
- Episodes of staring or unexplained periods of unresponsiveness;
- Involuntary movement of arms and legs;
- "Fainting spells" with incontinence or followed by excessive fatigue; or
- Odd sounds, distorted perceptions, or episodic feelings of fear that cannot be explained (National Dissemination Center for Children with Disabilities, 2010).

During a simple partial seizure, also known as absence seizure, the child stares blankly off into space and doesn't seem to be aware of his or her surroundings. The child may also blink rapidly and seem to chew. Simple absence seizures typically last from 2-15 seconds and may not be noticed by others. Afterwards, the child will resume whatever he or she was doing at the time of the seizure, without any memory of the event. The most common treatment for epilepsy is anti-epileptic medication, which is most effective in stopping seizures in 70% of patients. Other treatments include:

- Surgery to remove the areas of the brain that are producing the seizures;
- Implementation of a Vegus Nerve Stimulator which supplies stimulation to the vagus nerve (a large nerve in the neck), where short bursts of electrical energy are directed into the brain via the vagus nerve; and
- A ketogenic diet (one that is very high in fats and low in carbohydrates), which makes the body burn fat for energy instead of glucose (National Dissemination Center for Children with Disabilities, 2010).

Anti-seizure medications may have some side effects, which can range from mild to severe. These side effects include the following with the top three often considered the most prevalent:

- Fatigue
- Dizziness
- Memory problems
- Weight gain
- Loss of bone density
- Speech Problems
- Depression
- Severe rash
- Inflammation of certain organs (Mayo Clinic, 2013).

Recommendations for the Inclusion of Children with Simple Partial Seizures in the General Education Classroom

Seizures may disrupt a child's learning process because of a loss of attention during the seizure activity itself, cognitive deficits associated with the area of the brain affected by the seizures, and side effects of anti-epileptic drugs (Wodrich et al., 2006). Characteristics such as fatigue, dizziness, and memory problems need to be remembered and addressed by the teacher in the classroom. Being in a general classroom environment can be both beneficial and negative. Allowing young students with epilepsy and other disorders to attend general education classes encourages social relationships and educational opportunities that these students may not otherwise receive. Adaptations or accommodations by the teacher in the general education classroom are relatively simple. This is the reason that most children with epilepsy, who have simple partial seizures, should probably attend general education classes.

While having young students with epilepsy in a general classroom can be positive, it can also cause potential problems. Children can be very cruel to other children who are different then themselves and who have a disability. But, by educating children about epilepsy, one can better understand the human and medical sides of a health problem, and through that process, be more accepting of the child with epilepsy. The teacher needs to discuss with the parents, their views in regards to discussing the disorder with the other children in the classroom. Is this a wish of the parents? Is it something the parents want to come to class and discuss to the other students? Is it something the parents wish the teacher or guidance counselor to do? Is it something that the parents may even want the student to do? Is this uncomfortable to the student?

Certain accommodations should be made for students with all types of epilepsy when being included in general education. The most important thing for teachers to remember is to be aware of children that have seizures, the type of seizures, including simple partial seizures, and recognize the effects of medication. The accommodations that a child with epilepsy receives are determined mostly by parents and physicians as included in his or her IEP team. The most common concerns to consider when addressing children with simple partial seizures are 1) health concerns such as fatigue and dizziness and 2) memory deficits (Mayo Clinic, 2013)**.** Below are methods to address such concerns:

To address health concerns including fatigue and dizziness – often a result of anti-epileptic medicine

- Be flexible about time missed from school to seek treatment or adjust to new medications
- Provide extra time for assignments and a modified workload (fatigue is a common side effect of seizures and medications).
- Replace fluorescent lighting with full spectrum lighting (fluorescent lighting may induce seizures in children).
- Provide a private area for the child to rest or recover after a seizure (National Dissemination Center for Children with Disabilities, 2010).

If a student does have a seizure, the follow steps should be followed:

- Remain calm and reassure other students.
- Send someone to call 911.
- Ease the student to the floor.
- Remove objects that may injure the student.
- Do not attempt to stop the seizure nor interfere with the student's movements.
- Turn the head or body to the side to prevent the tongue from slipping to the back of the throat interfering with breathing. (SPC St. Petersburg College, 2007).

To address memory deficits of student with epilepsy:

- Provide written or pictorial instructions.
- Use voice recordings of verbal instructions.
- Have a peer buddy take notes for the student or permit tape recording.
- Divide large tasks into smaller steps.
- Provide a checklist of assignments and a calendar with due dates.
- Decrease memory demands during classwork and testing (e.g., use recognition rather than recall tasks) (National Dissemination Center for Children with Disabilities, 2010).

Conclusion

The inclusion of a student with a seizure disorder in the general education elementary classroom, including simple partial seizures, can often be both challenging and rewarding for both the young student and teacher. The rewards can manifest themselves in the ability of the teacher to guarantee the safety of all students in an instructionally sound environment. This paper has hopefully addressed some basic concerns and solutions to improve the classroom setting of young students with simple partial seizures.

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***Facilitating First Words through Shared Book Reading in Young Children
with Language Delays***

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Abstract

Shared book reading is a powerful context for facilitating vocabulary development in young children. While a large literature base documents best practices for preschoolers and kindergarteners, far less is known about how to use shared book reading to foster early vocabulary development in toddlers with language delays. However, there is an alignment between shared book reading and early spoken language intervention principles and practices. Specifically, reading the same book multiple times, teaching novel vocabulary explicitly, engaging children in book-related conversations, and embedding target vocabulary across activities, settings, and readers have been shown to increase vocabulary during shared book reading. Repetition through focused language stimulation, teaching concepts using multiple representations (e.g., keyword signs, gestures), responsive interactions through enhanced milieu teaching, and embedded learning opportunities also are evidence-based early spoken vocabulary intervention strategies. This article integrates the principles and practices from both research bases and provides practical applications.

***Facilitating First Words through Shared Book Reading in Young Children
with Language Delays***

The relationship between oral and written language is both dynamic and reciprocal (ASHA, 2001). Strong oral language skills provide the foundation for reading success and literacy activities foster oral language skills (ASHA, 2001; U.S. Department of Education, Institute of Education Sciences, 2015). Shared book reading, the interactive process of engaging children with text and illustrations (U.S. Department of Education, Institute of Education Sciences, 2015), has been long acknowledged as a powerful context for simultaneously nurturing skills in both the language and literacy domains (Kirshner, 1991; Ratner, Parker, & Gardner, 1993; Whitehurst et al., 1988). This is especially true for vocabulary development, as documented in individual studies and systematic reviews over the last 20 years for children developing typically and children with disabilities (Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016).

From this literature, four primary principles to foster vocabulary development through shared book reading have emerged. These include the positive effects on vocabulary from 1) reading the same book multiple times; 2) teaching novel vocabulary explicitly (e.g., defining new words, embedding them in novel sentences) in addition to encountering them within the text; 3) engaging children in interactions with the text through responsive comments and questions (e.g., dialogic reading); and 4) embedding the target vocabulary across activities and settings (Justice, Meier, & Walpole, 2005; Snell, Hindman, & Wasik, 2015; Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016).

The vast majority of the research informing these practices has been conducted with preschoolers and kindergarteners expanding their vocabularies (Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016). However, in their review of the literature for the birth to three population, Fletcher and Reese (2005) concurred. They concluded that early, frequent, repetitive, and interactive reading of developmentally appropriate books positively influences early vocabulary development.

To date, there have been no studies that specifically researched the best practices to facilitate early vocabulary development in toddlers with language delays using shared book reading. However, there is a large body of literature that provides research-based strategies for facilitating first spoken words in this population that predictably utilize increased frequency, explicit teaching, responsive interactions, and embedded learning opportunities (ELOs). Specifically, these interventions emphasize 1) increased frequency through the use of focused language stimulation (DeVeney, Cress, & Reid, 2014; Ellis Weismer & Robertson, 2006; Roberts & Kaiser, 2011; Wolfe & Heilman, 2010); 2) concept development using multiple means of representation/expression to facilitate words such as keyword signs and pictures (Lederer & Battaglia, 2015; McGuire, Scott, & Shaw, 2006); 3) responsive interactions in the form of enhanced milieu teaching (EMT) (Hancock & Kaiser, 2006; Kaiser & Roberts, 2013; Roberts & Kaiser, 2011); and 4) embedded learning opportunities to foster generalization and collaboration with families (Horn & Banerjee, 2009; Lederer, 2014; Noh, Allen, & Squires, 2006). What follows is an integration of the principles and practices from both shared book reading and oral vocabulary intervention research to facilitate early vocabulary development in toddlers with language delays using shared book reading.

Toddlers with Language Delays

Children developing language typically acquire their first spoken words between 10 and 16 months. They master at least 50 words and begin word combining between 18 and 24 months. By two years, most children have a vocabulary of 200 words (Fenson et al., 1994). A two-year-old toddler who has a vocabulary of fewer than 50 words and no word combinations is considered to have a language delay (Rescorla, 1989). The etiology of this delay may be part of a larger developmental delay (e.g., Down syndrome, Autism Spectrum Disorder) or primary in nature. These children are often known as "late talkers" ("Late Language Emergence," n.d.). For children with language delays who can benefit from a natural, developmental approach, language intervention focuses on building the single word vocabulary with early nouns (e.g., "mommy," "daddy," "baby," animal names, food names, toy names), verbs (e.g., "eat," "go," "wash," "open"), and other parts of speech (e.g., "more," "no," "hot," "up") to communicate a variety of intentions (for guidelines on choosing first words, see Lederer, 2002).

For children developing language typically, exposure to language through the natural, general language stimulation provided by families, siblings, and others is enough to facilitate language learning (Bloom & Lahey, 1978; Nelson, 1974). Gray and Yang (2015) summarize the basic processes involved in learning a new word. When a child hears a word for the first time, such as "cat," he or she must create a phonological representation of the word (i.e., /k/ /æ/ /t/) and store that representation in memory. The child must also create a semantic representation of the word (i.e., a real "cat") and a lexical representation of the word (i.e., /kæt/) and store both in memory. If the child can decode the written word, an orthographic representation will also be created and

stored (i.e., "C-A-T"). Each of these representations must be linked together so that when the child hears or reads the word, or when the child sees the object or action, it activates the representations in memory. As the child experiences the word in different contexts, the semantic, phonological, lexical, and orthographic representations are elaborated, the links are strengthened, and the word is associated with other words in the lexicon (Gray & Yang, 2015). Moreover, children employ a crucial process known as fast mapping, which involves the ability to learn and retain new words with only minimal exposure (Carey & Bartlett, 1978; Heibeck & Markman, 1987). Houston-Price, Plunkett, and Harris (2005) found that three repetitions of a set of image-label pairs were sufficient for learning to occur in infants under two years, indicating the ease with which infants in the early stages of acquiring a vocabulary learn new word-referent associations.

Ellis Weismer and Robertson (2006) hypothesized that children with language delays do not learn language from general language stimulation due to a variety of factors including, but not limited to, compromised information processing systems and strained caregiver-child interactions. Information processing theorists suggest that the language delay is caused by deficits in the child's cognitive processing abilities; that is, the ability to attend, discriminate, organize, store, and/or retrieve information (e.g., Just & Carpenter, 1992). Deficits in any one of these areas will compromise the ability of the whole system to function. For example, it has been demonstrated that children with language delays have auditory attention (Finneran, Frances, & Leonard, 2009) and working memory deficits (Montgomery, Magimairaj, & Finney, 2010). Without the ability to sustain attention and retain new words in working memory, the brain cannot properly process or store the new information. Thus, new words presented naturally by caregivers and others may not be learned.

A second etiological concern arises from social learning (e.g., Bruner, 1983; Vygotsky, 1978) and behavioral models of language acquisition (e.g., Hart & Rogers-Warren). Social learning theorists suggest that children learn language through observing, listening, and interacting with more skilled others who both simplify their own language and expand the children's verbal and nonverbal communication attempts (e.g., Bruner, 1983). Furthermore, the transactional nature of the interaction between caregiver and child is a key component to language learning (Warren et al., 2006) and is jointly influenced by both social and behavioral theories. Language initiations and responses are ongoing and mutually reinforcing. However, when a child with a language delay does not respond or responds infrequently, input from the adult dwindles due to lack of positive reinforcement (Rice, 1993). Less language stimulation by the adult results in fewer language learning opportunities for the child. In general, young children with language delays typically experience less language engagement than their peers developing typically (Roberts & Kaiser, 2011).

These information processing and social/transactional/behavioral learning theories have guided the creation and validation of carefully engineered, yet natural, evidence-based therapy approaches. Specifically, vocabulary interventions stress four strategies: 1) repeated exposure to target words (i.e., focused language stimulation); 2) concept teaching using multiple means of representation/expression such as pictures and gestures; 3) responsive interactions in the form of enhanced milieu teaching; and 4) embedding target words across activities and speakers. Infusing these techniques into shared book reading and the child's world translates research to practice.

Unlike children developing typically, who learn words incidentally from the environment, children with language delays need a more focused approach. Gray (2003) suggests these children may need up to three times the exposure to new words compared with peers developing typically. Voelme and Storkel (2015) suggest children with language delays may need 36 exposures to learn a single new word. One way to maximize exposure to a novel word is focused stimulation.

Focused stimulation is a language intervention approach in which target words are preselected and each is modeled five to 10 times before a new target is presented (Ellis Weismer & Murray-Branch, 1989; Girolametto, Pearce, & Weitzman, 1996; Lederer, 2002; Wolfe & Heilmann, 2010). The target is presented in short, but natural phrases/sentences to help build the concept semantically. (Other modes of representation to build the concept, such as pictures, signs, or demonstrations, also are used and will be discussed in the next section.). For example, using a focused stimulation approach to facilitate the word "cookie," the facilitator might say, "Do you want to a cookie? I want a cookie. Let's eat a cookie. I eat a cookie. You eat a cookie. Cookie." Notice focused stimulation does not mean repeating the single word in isolation over and over. Rather, it is repeated in its natural linguistic and experiential contexts. Target words may be facilitated either in simplified one to two word phrases or expanded naturalistic speech (Girolametto, Pearce, & Weitzman, 1996; Wolfe & Heilmann, 2010). No verbal or signed production is overtly elicited from the child in the classic form of focused stimulation. Exposure alone has been proven sufficient to facilitate word learning (DeVeney, Cress, & Reid, 2014; Girolametto, Pearce, & Weitzman, 1996; Wolfe & Heilmann, 2010).

Focused stimulation is based on the both information processing and social/behavioral learning models of language disorders (Ellis Weismer & Robertson, 2006). The primary feature of focused stimulation is repetition in context. From an information processing perspective, focused stimulation increases the number of opportunities children have to listen to a small set of target words, thereby increasing the potential for working memory to retain, process, store, and retrieve them. Fewer targets repeated over and over before introducing another word minimizes demands on the processing system. Cognitive demand is reduced in comparison to listening to an ever-changing list of words (Ellis Weismer, 2000; Just & Carpenter, 1992). From a social learning perspective, fewer and more concentrated targets modeled by adults increase the child's success in producing words, which in turn, reinforces the caregiver who is motivated to provide new models (Warren et al., 2006).

The efficacy of focused stimulation was demonstrated in a meta-analysis of parent-implemented therapies by Roberts and Kaiser (2011). Ellis Weismer and Robertson (2006) also provided a review of the strong empirical research support for using focused stimulation to facilitate first words. For example, Girolametto, Pearce, and Weitzman (1996) have demonstrated that parents can be taught successfully to facilitate vocabulary using focused stimulation and that their child's vocabulary grows as a result. Their participants used more target and non-target words in naturalistic probes and free-play interaction, more multiword combinations and early morphemes, and acquired larger vocabularies overall resulting from the administration of a focused stimulation treatment.

Focused stimulation: Research to Practice

Shared book reading researchers agree that multiple readings of the same book will facilitate vocabulary development, although the magic number of readings has not been established (Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016). Boudreu and Hedberg (1999) emphasize the importance of repeated readings, especially for children with language delays. Since children with language delays need many presentations of new vocabulary words, choosing a book that repeats a target word over and over exposes the child to repetition both within each reading and across multiple readings. Furthermore, since the goal is to facilitate vocabulary development and not story comprehension, choosing pattern books without narratives works well (Lederer, 2009). These books are typically short and rhythmic, which supports sustaining attention.

To illustrate, if a child's target word is "eat," choose *Crunch Munch* (London, 2002). This is a short, patterned picture book that explores how different animals eat. "How does a beaver eat? Crunch, munch, crunch munch. How does a cow eat? Moo-o-o-o, chew, moo-o-o-o, chew…" The word "eat" appears on every other page, in context, with picture support. The work of Wolfe and Heilmann's research (2010) supports repeating the target word, in isolation or short phrases/sentences, as you read to provide even more repetition. "How does a beaver eat? Crunch, munch, crunch munch. [Eat, eat, eat!] How does a cow eat? Moo-o-o-o, chew, moo-o-o-o, chew [The cow eats] …"

Recall that focused stimulation does not require eliciting a response from the child. Listening over and over provides the repetitive input the processing system needs. To further stimulate acquisition of a target word, choose another book using the same criteria. For example, after reading *Crunch Munch*, read *The Very Hungry Caterpillar* (Carle, 1981). Edit the tense from "On Monday he ate through one apple" to "On Monday he eats one apple" which will provide seven repetitions of the word "eat." Table 1 offers additional focused stimulation books to facilitate other early vocabulary words.

Table 1
Focused stimulation books for early vocabulary development (Lederer, 2009)

Target	Book	Sample text
MOMMY	*The Mommy Book* (Parr, 2002)	"Some mommies drive minivans. Some mommies drive motorcycles. Some mommies fly kites. Some mommies fly planes…"
DADDY	*The Daddy Book* (Parr, 2002)	"Some daddies wear suits. Some daddies wear two different socks. Some daddies work at home. Some daddies work far away…"
DOG	*That's Not My Puppy* (Watts, 2000)	"That's not my puppy [dog]. Its tail is too fluffy. That's not my puppy

		[dog]. Its paws are too bumpy. That's not my puppy [dog]…" (Replace "puppy" with "dog")
GO	*Go Dogs Go: Book of Things That Go* (Eastman, 1997)	"Go dogs go. Go on skates. Go by bike. Go by foot. Run, skip, or hike…"
OPEN	*Open the Barn Door* (Santoro, 1993)	"Who says moo? (Lift the flap and add "open the door.") A cow. Who says oink? ["open the door"]. A pig…" (Any lift the flap book works well to target "open.")
MORE	*Bear Wants More* (Wilson, 2003)	"…He nibbles on his lawn until the last blade is gone. But the bear wants more…The berries grow sweet and they eat, eat, eat. But the bear wants more…They nibble on their lunch with a crunch, crunch, crunch. But the bear wants more." The bear eats a variety of foods, but he still wants more. (Simplify text overall.)
HOT	*Splash* (McDonnell, 1999)	"Hot, hot, hot. The elephants are hot. Tiger is hot. Rhinoceros is hot… Now tiger is cool [not hot] and happy. Now rhinoceros is cool [not hot] and happy…" (To increase frequency of target, use "not hot" in place of "cool" and "happy.")
UP	*Great Day for Up* (Dr. Seuss, 1974)	"…Great day for up feet, lefts and rights. And up up baseballs, footballs and kites… Up stairs, up ladders, up on stilts…"

Teach: Concept-Building Interventions

Frequency alone, even in context, cannot facilitate the acquisition of early vocabulary. Children need to understand what words mean. While the shared book reading intervention literature suggests defining target words (Justice, Meier, & Walpole, 2005; Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016), this approach is too sophisticated for young children with language delays learning their first words. For these children, concept building through multiple means of representation (e.g., signs, gestures, pictures, objects, and experiences) is a research-based practice (Lederer & Battaglia, 2015; McGuire, Scott, & Shaw, 2006).

Theoretical support for the use of simultaneous gestures and words comes from developmental research on the gesture-language continuum (Goodwyn, Acredolo & Brown, 2000; McLaughlin,

1998). Children learn gestures before they learn words. They learn specific representational/symbolic gestures, such as raising their arms for "up" or flapping their arms for "bird," before they learn to use spoken words (Capone & MacGregor, 2004). They also learn to play symbolically around the same time they use symbolic words (McCune-Nicolich, 1981). They pretend to eat or make a baby doll eat in preparation for representing the action with the word. Development of gesture not only precedes word acquisition, but has been demonstrated to predict vocabulary development (Watt, Wetherby, & Shumway, 2006).

Children with language impairments have delays in gesture development (Luyster, Kadlec, Carter, & Tager-Flusberg, 2008; Sauer& Goldin-Meadow, 2010). The nature of their gestural lexicons can be used to reliably predict who will and will not catch up in language development (Thal, Tobias, & Morrision, 1991) and differentiate among those with various disabilities such as autism (Zwaigenbaum et al., 2005) and Down syndrome (Mundy, Kasari, Sigman, & Ruskin, 1995).

In addition to the developmental research, cognitively-based information processing models of language learning support the use of gestures to facilitate spoken words (Ellis Weismer, 2000; Just & Carpenter, 1992). Seeing the sign for "eat" while hearing the word "eat" provides a child with the opportunity to process them input both visually and auditorily. For children with language delays, auditory processing is often impaired (Finneran, Frances, & Leonard, 2009), so the visual modality augments the message. Furthermore, the sign stays in the child's visual field longer than the words stay in the auditory field, giving the child more time to process the meaning (Abrahamsen, Cavallo, & McCluer, 1985).

Social/behavioral learning theories also provide efficacy for the use of gestures. For example, the transactional model of language learning suggests that when children initiate or respond to adults, adults are motivated to keep the conversation going by narrating the action or adding new information (Sameroff, 2009; Yoder & Warren, 1993). When children do not engage in the conversation verbally or nonverbally, the conversation ends. One of the most positive outcomes from the "baby signs" movement (signing with children who are developing typically) is the finding that teaching children to use more gestures increases adult responsiveness. More input from the adult enhances the language learning process (Kirk, Howlett, Pine, & Fletcher, 2013).

The efficacy of using simultaneous signs and verbal language to facilitate early spoken words in hearing children with language delays has been documented in the literature (Baumann Leech & Cress, 2011; Dunst, Meter, & Hamby, 2011; Lederer & Battaglia, 2015; Wright, Kaiser, Reikowsky, & Roberts, 2012). In a recent systematic review of the sign-word interventions, Dunst, Meter, and Hamby (2011) concluded that the use of simultaneous gestures and words facilitates word learning better than verbal models alone. Furthermore, these findings held true regardless of the child's disability (e.g., Down syndrome, Autism Spectrum Disorder) or the gesture system used (e.g., American Sign Language, Signed English). Most recently, in a pilot study, Capone Singleton and Saks (2015) also demonstrated that pairing iconic gestures with word models promotes word learning for children with early language delay.

Concept-building: Research to Practice
Children's picture books already provide visual representations to support concept building. Adding natural gestures and keyword signs along with target words is suggested by the literature.

The choice of gesture does not matter if it is used consistently. Illustrated fingerplay songs, such as *Five Little Monkeys Jumping on the Bed* (Christelow, 2012), naturally provide opportunities to gesture along with the text. Some children's books, including those written specifically for children who have language delays or hearing impairments, also contain pictures of signs along with the illustrations and text, such as *I Can Do That* (Lederer, 2014). However, some of these use just a single picture, word, and sign on each page with no linguistic context and no repetition, such as *Baby Signs* (Allen, 2008). Embedding the target word in a sentence, while pointing to the picture, signing, and saying the word, can further encourage concept development using these books.

Even without explicit pictures of signs or routine gestures from songs, readers can enhance vocabulary teaching by adding them. To return to the reading of *Crunch Munch*, each time the word "eat" is read, the reader can simultaneously touch closed fingertips to lips, demonstrating the sign for "eat." In addition, the reader can point to the picture to help the child's brain connect the word, the picture, and the sign. Since this book provides illustrations of multiple animals eating a variety of foods, the concept of eating is further nurtured. Previewing and reviewing the concept of eating before and after reading is suggested by the shared book reading literature (Justice, Meier, & Walpole, 2005). Bringing puppets that "eat" during the story also can deepen the connection between the word and the referent (Wasik & Bond, 2001). Connecting the animals eating to the child eating also is a powerful practice and will be explored in a subsequent section.

Interact: Enhanced Milieu Teaching Interventions

In addition to repeated book readings and multiple repetitions of targets within a book, it has been shown that reader-child interactions around the text will enhance word learning. Specific dialogic reading strategies (Whitehurst et al., 1988) and even more general book conversations (Lonigan, Purpora, Wilson, Walker, & Clancy-Marchetti, 2013) promote vocabulary development. Open and closed-ended questions before, during, and after shared book reading, supplemented with responsive repetitions, comments, recasts (i.e., repeat what the child says with different syntax such as rephrasing a statement as a question), praises, and follow up questions have been proven efficacious (Whitehurst et al., 1988). In dialogic reading for two- to three-year-olds, the adult prompts the child to say something about the book with a question ("What's this?), acknowledges ("Yes, it's a bear"), and expands on the child's response ("The bear is brown"). The parent then asks the child to repeat the target ("Say 'bear'") to reinforce it. This approach provides models, feedback, scaffolding, and praise, and encourages children to be active participants in the process of reading. Whitehurst and colleagues (1988) add that shared book reading should be a fun experience for children. This can be accomplished by reading with expression, enthusiasm, and character voices (Mira & Schwanenflugel, 2013).

These dialogic reading strategies parallel a group of natural language interventions called enhanced milieu teaching (EMT). EMT strategies involve environmental arrangement, responsivity interactions, and milieu teaching strategies including modeling, time delay, and manding (i.e., requesting a response). Like focused stimulation, environmental arrangement requires knowing the language goals (i.e., target words) and choosing activities in which those goals can be facilitated and are of interest to the child (i.e., attractive books that repeat the target). Responsivity requires the adult to notice and acknowledge a child's attempt to communicate, whether verbal or nonverbal. For prelinguistic or minimally verbal children, these

attempts may take the form of pointing or gazing (Warren et al., 2006). Milieu teaching strategies involve modeling the target word or sign, eliciting its production through either a time delay ("Brown bear, brown _____" or questions ("What's this?"), and providing comments about the target ("The bear is brown.") Children's communicative attempts are naturally reinforced through the contingent response and continued activity.

The theoretical underpinnings of EMT are clearly social, transactional, and behavioral. In a meta-analysis of parent-implemented therapies, Roberts and Kaiser (2011) concluded that EMT is well supported for children of different ages and language levels. Two researchers have combined EMT and shared book reading in four- to five-year-olds (Colmar, 2011, 2014; McNeill & Fowler, 1999). Colmar (2014) demonstrated the effectiveness of using time delay and asking open-ended questions within shared book reading to promote vocabulary development. McNeill and Fowler (1999) taught parents to praise, expand, ask open-ended questions, and pause for child initiations. Mothers showed use of these strategies and children demonstrated corresponding increases in communication skills, especially initiations.

EMT: Research to Practice
Environmental arrangement, responsivity, and milieu teaching strategies can be easily incorporated into shared book reading and have been shown effective in children with language delays (Colmar, 2011, 2014; McNeill & Fowler, 1999). Environmental arrangement suggests choosing targets and books to best facilitate the chosen vocabulary. Repetitive books not only provide multiple models (i.e., focused stimulation), but also offer increased opportunities for children to join in. This may occur either as the adult reads or when he or she is provided with a time delay. During *Crunch Munch* (London, 2002)*,* the reader can encourage the child to point to the pictures of the animals eating and make the sign, or say the word together, after a model (e.g., "Eat," "Tell me, eat"), with a phonemic cue (i.e., first sound of the word), or independently. Being responsive to a child's interests further fosters word learning. This is especially important for those children with language delays because they rarely initiate or may not respond to questions with a target word. When a child demonstrates interest, either verbally or nonverbally (e.g., gazing, pointing), the reader can respond with a comment ("Yes, the beaver eats") or a question ("What is the beaver doing?"). Conversations about what the child likes to eat will further build the link between the concept and the word/sign/picture, which will improve storage and retrieval in the brain.

Infuse: Embedded Learning Opportunities

Shared book reading and spoken language researchers agree that exposure to target words across activities, settings, and speakers is necessary to help children establish strong representations in memory (Gray & Yang, 2015; Silverman, Crandell, & Carliss, 2013).

Engineering embedded learning opportunities (ELOs) helps make this possible (Horn & Banerjee, 2009; Lederer, 2013; Noh, Allen, & Squires, 2009). Embedding is defined as "a process of addressing children's target goals during daily activities and events in a manner that expands, modifies, or is integral to the activity or event in a meaningful way" (Pretti-Frontczak & Bricker, 2004, p. 40). Daily activities include routines (e.g., bath-time, bed-time), planned activities (e.g., shared book reading, playing with preselected toys), and child-initiated play. To plan for ELOs, professionals and families must work together to identify opportunities across the

child's day in which the intended targets can be facilitated using focused stimulation, multiple representations, and EMT. For example, an early target such as "duck" can be facilitated in school and/or at home while reading and singing *Five Little Ducks* (Raffi, 1999), during play with duck puppets, in the bath with a rubber duckie, and at a duck pond.

Parents have been taught successfully to facilitate vocabulary during shared book reading (Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016) and during other daily activities using strategies such as focused stimulation and EMT (Roberts & Kaiser, 2011). Programs such as dialogic reading (Whitehurst et al., 1988), Teach-Model-Coach-Review for EMT (Roberts, Kaiser, Wolfe, Bryant, & Spidalieri, 2014), and the Hanen Centre's *It Takes Two to Talk* (Girolametto, Pearce, & Weitzman, 1996; Pepper & Weitzman, 2004) are examples of systematic, evidence-based parent training protocols that provide instructions to make them replicable. In general, parent-implemented language and shared book reading interventions have resulted in positive effects on parent facilitation skills and child vocabulary development in children with and without language delays (Reese, Sparks, & Leyva, 2010; Roberts & Kaiser, 2011; Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016; Wright & Kaiser, 2016). Integrating shared book reading and language facilitation strategies for children with language delays also has been shown efficacious in a few studies (Colmar, 2011, 2014; Dale, Crain-Thoreson, Notari-Syverson, & Cole, 1999; McNeill & Fowler, 1999). In general, the shared book reading research on children with language delays is limited.

It is important to note that even less is known about using shared book reading to facilitate language in multicultural populations. To reach populations other than middle income families, Reese, Sparks, and Leyva (2010) suggest that more must be learned about cultural differences in the role of books and home reading practices upon which to build evidence-based interventions. However, based on the theoretical underpinnings of focused stimulation, sign/gesture, EMT, and ELOs, it seems reasonable to teach parents to embed these strategies, even in cultures where oral storytelling is traditional.

ELOs: Research to Practice
Involving parents/caregivers as partners is a collaborative effort. Evidence-based practice is defined as the interaction of research findings, clinician expertise, and family values (ASHA, 2005). While professionals can recommend target vocabulary, families may have rationales for including or excluding certain words. At the end of the goal setting process, caregivers and professionals are all working toward building the same first vocabulary (especially when there are a variety of team members, such as physical or occupational therapists, special educators, and speech-language pathologists). Together, professionals and caregivers can identify different daily or special activities in which to further encourage new vocabulary words.

Collaboration with families also is required to share books. Professionals can recommend books to read and help parents adapt beloved books. For caregivers who may not be readers themselves, suggestions may include narrating the story along with the pictures or observing a YouTube video of someone else reading. The use of pre-recorded stories with embedded vocabulary instruction was demonstrated to be more effective than listening to pre-recorded stories alone (Goldstein et al., 2016). Teaching caregivers shared book reading and language facilitation techniques, such as re-reading the same story; using signs/gestures or experiential

props to act out the story; and being responsive, modeling, asking questions, pausing, and using other EMT strategies is a key to success.

To illustrate an ELO plan, if the target is "eat," suggest that caregivers read *Crunch Munch* (London, 2002) every day. Offer other books in which the word "eat" can be repeated multiple times, such as *The Very Hungry Caterpillar* (Carle, 2012). Bring these stories to life with animal puppets that pretend to eat the foods in the books. Together, identify other opportunities to facilitate "eat," such as during meals, pretend play activities (e.g., pretending to feed a baby a cookie), and songs both popular (e.g., *Apples and Bananas*) and made-up (e.g., words sung to the tune of *Here We Go 'Round the Mulberry Bush* such as "This is way we eat a cookie, eat a cookie, eat a cookie. This is way we eat a cookie, eat, eat, eat").

When possible, try to implement or adapt an evidence-based parent training protocol such as the Hanen Centre Program (Pepper & Weitzman, 2004) or Teach-Model-Coach-Review for EMT (Roberts, Kaiser, Wolfe, Bryant, & Spidalieri, 2014),. Hanen's, *It Takes Two to Talk,* is a parent-friendly guidebook with a DVD illustrating implementation of parent goals. It guides parents to use "The Fours 'S's"; that is, "say less," "stress," go slow," and "show," as well as OWLs (i.e., "observe," "watch," "listen"). It explains how to add actions, gestures, and pictures, expand language, and embed vocabulary facilitating strategies into play, books, and music. Hanen also recommends watching videotapes together of parents interacting with their children to identify and measure parent skills. Teach-model-coach-review is based on how adults learn (Dunst & Trivette, 2009) and includes overtly *teaching* parent strategies, such as expansion and time delay, *modeling* to illustrate, *coaching* parents as they practice, and *reviewing* through reflection of the effects on parent and child. In a study of children with Down syndrome, the successful use of sign and words was taught using teach-model-coach-review (Wright & Kaiser, 2016).

Suggested Guidelines

Research has shown that children with language delays can benefit from both shared book reading (Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016) and natural vocabulary intervention strategies (Roberts & Kaiser, 2011). By integrating both, the first vocabularies of young children with language delays can be stimulated. Specifically, the following practices are suggested by this literature review:

1. Engineer the learning environment by preselecting a few target words and choosing pattern books, of interest to the child, with multiple repetitions of those targets.

2. Read and reread these books with enthusiasm.

3. Point to the picture of the target word and simultaneously sign and say it.

4. Ask questions, provide opportunities to join in, model, be responsive to a child's attempt to engage in communication, and offer praise.

5. Both parents and teachers should take target vocabulary words, signs, pictures, and experiences out of the book and into the world.

Recent meta-analyses conclude that questions remain about strategies to ensure new vocabulary retention, dosage and timing of instruction, which strategies to combine, population-specific strategies, outcome measures, and the role of technology in supporting vocabulary learning, among others (Snell, Hindman, & Wasik, 2015; Towson & Gallagher, 2016; Wasik, Hindman, & Snell, 2016). However, they also conclude that there is sufficient evidence for using shared book reading to facilitate vocabulary acquisition. Although research is needed to prove its efficacy, given the literature discussed herein, using shared book reading and spoken language interventions together also appears to be a viable approach to vocabulary development in toddlers with language delays.

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United Arab Emirates University Students' Attitudes towards Students with Disabilities

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Abstract

Although the attitudes of individuals without disabilities toward students with disabilities have been studied extensively for years, most of those studies were conducted outside of United Arab Emirates (UAE) and very little has been written about Emirati people and their attitudes toward students with special needs. The purpose of this study was examine the relationship between United Arab Emirates University (UAEU) students' attitudes toward students with special needs based on gender, area of study, and personal contact. To achieve this purpose, one hundred and fifty students from UAEU took part in this study (75 female and 75 male). Results showed very few cases where significant differences between male and female attitude towards people with disabilities occurred. Three items were in favor male participants, while another three items were in favor female participants. The results also did not show a strong relationship between participants' attitudes and the area of study. Results showed that the more contact a person has with a disability change appropriately, the more positive their attitude usually will be. Implications of this study include exposure to and individuals with disabilities, consistent or genuine contact with disabilities to increase positive attitudes, and general education about the various types of disabilities.

Keywords: inclusion, disabilities, attitudes.

United Arab Emirates University Students' Attitudes towards Students with Disabilities

Introduction

The Unites Nations (UN) convention on the Rights of People with Disabilities which has been introduced in 2008, seeks that people with disabilities have the right to full participation in all development programs. There is a growing trend of inclusion of people with disabilities. In UAE, the rapid economic and social changes have enabled UAE to take actions for integrating students with disabilities. In order to keep pace with international trend of inclusion of people with disabilities, the UAE is interested in developing services for people with disabilities. The UAE Disability Act (Federal Law No. 29/2006) was passed in 2006 to protect the rights of people with disabilities. This law stipulates that UAE nationals with disabilities have the same rights to work and occupy public positions. In addition, the UAE ratified the United Nations Convention on the Rights of Persons with Disabilities on the March 19, 2010 (Alzyoudi, Al Muhiri, 2015).

In March 2014, HH Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE, in his capacity as the Ruler of Dubai, issued Law No. (2) of 2014 "to protect the rights of people with disabilities in the emirate of Dubai". The law supports Federal Law No. (29) that concerns the rights of people with disabilities, and supports providing high-quality medical care and social services, boosts public awareness of people with disabilities, contributes to integrating people with disabilities into society, and reaffirms their participation in social development (Ministry of Social Affairs, UAE, 2014).

Services for people with disabilities are offered primarily in three types of programs:

1. Governmental Centers, which are run by the federal, or local government (state), offering free services especially to the citizens.

2. Semi-governmental Centers, usually organized by non-profit charitable organizations, offering free or semi free services.

3. Private centers or schools or rehabilitation clinics which require a fee or payment for services.

In UAE, educational authorities have changed the direction of the way in which it educates their students. Therefore, the aim of the Ministry of Education, Ministry of Social Affairs, and Abu Dhabi Education Council is to implement inclusive education policy (Ministry of Social Affairs, 2015).

Inclusive education refers to the concept of teaching students with disabilities with students without disabilities in the same classroom. The goal of inclusive education is to break down the barriers that separate general and special education and help students with disabilities feel like and become an active members of general education classroom. (Ainscow, Booth, and Dyson, 2010; Salend, 2011; Weber, 2012).

The issue of attitudes towards people with disabilities is considered one of the most important issues in the field of special education, as it is affected by many factors. (Al zyoudi and Al Muhiri, 2015; Alzyoudi, Sartwai, and Dodin, 2011). The importance of trends of university students towards people with special educational needs lies in the implications of future decisions for those trends, whether they are positive or negative. Critical examinations of their attitudes are necessary because of the association of attitudes with behavior and formation of beliefs about that population, which also affect relationships with peers and other professionals. As Seland (2011) indicated that a positive attitude can lead to psychological and social acceptance for people with disabilities, and improve educational, social, health and professional programs offered to them. In respect to the negative attitude, it may lead to rejection of students with disabilities, as well as neglect of them. Therefore, the purpose of this study was to identify the university students toward people with disabilities as they considered the largest resource for teachers who will in the future deal with those students.

Many international studies (e.g. Dunst, 2014) highlighted factors which can be considered as crucial for enhancing positive or negative attitudes towards people with disabilities, and thus is necessary investigate these factors which can enhance positive or negative attitudes. A large

amount of studies (e.g. Alzyoudi et al., 2011, Moges, 2015) have been conducted to examine attitudes in relation to several variables. In the present study, the following variables by gender, area of study, and personal contact will be discussed.

Effect of gender on attitudes towards students with disabilities
Studies have addressed gender differences in attitudes towards students with disabilities and have reported varying results. Some studies (e.g. Alzyoudi, 2006; Hergenrather and Rhodes, 2007; Moges, 2015; Parashar, Chan, Leierer, 2008; Wang, 2015) clearly showed a significant effect of gender.; females were found to express positive attitudes than males. Bossaret, Colpin, Pijl, and Petry (2011) found that adolescent girls tend to have more positive attitudes towards people with disabilities than do adolescent boys. Another study by Chen, Ma, and Zhang (2013) found that undergraduate males have more negative attitudes toward people with disabilities than did undergraduate female. A literature review conducted by Rao (2004) identified gender as an important factor, which can influence attitudes among college students. He concluded that females had more positive attitudes than did males. However, Ajuwon, Laman, Earle, (2014) found that there was a significant effect of gender, male teachers were found to express more positive attitudes than female teachers. A conclusion may be made that gender may be one factor of predicting attitudes. However, a study by Hampton and Xiao (2010) demonstrated that there was no relationship between attitudes and gender.

Effect of area of study
Tshtoosh and Kasaleh, (2010) and Bekle (2004) have indicated that the area of study may be one factor of predicting university students' attitudes towards students with disabilities. They found differences among undergraduate students due to the area of study. Students at college of education were found to express positive attitudes than other students at other colleges. Hunt and Hunt (2004) found that college students who study business held more negative attitudes toward people with disabilities than other majors. Another study by Chen and Zhang (2013) found that students at Humanities and Social Sciences colleges showed more positive attitudes than did students at Scientific colleges. Hampton and Xiao (2009) found that students majoring in special education had more favorable attitudes toward people with disabilities than university students majoring in other areas. However, Craig (2009) found that students enrolled in the special education course had more positive attitudes toward people with disabilities regardless of their major. Another study by Wozencroft, Pate, and Griffiths (2015) indicated that the area of study had little impact on students' attitudes toward people with disabilities.

Effect personal contact
Level of contact with too many people with disabilities is a critical variable because of its impact on attitudes. As Tripp, French, and Sherrill (1995) mentioned in their research about the contact theory, interaction between individuals with differences tend to produce changes in attitudes. Thus, the personal contact may be influential the attitudes toward people with disabilities.

Hein, Grumm and Fingerle (2011) found that the amount of contact significantly impact the attitudes toward people with disabilities. Another study by Stoval, and Sedalcek (2014) found that students had negative attitudes toward people who were blind or in wheelchairs in situations where close personal contact was required, such as marriage, but they were be neutral or positive in less intimate situations such as employment or receiving help in a library. However, students were more comfortable having close personal contact with students with disabilities in academic

situations. Studies (e.g. Chen et al., 2011; Muwana and Ostrosky, 2014; Obeid, Daou, DeNigris, Shane-Simpson, Brooks, 2015; Gillespie-Lynch, Kristen , 2006; Smith, 2003; Wozencroft, Pate, and Griffiths, 2015) have concluded that level of contact is an important variable in examining attitudes and fostering positive attitudes toward people with disabilities.

People who reported favorable attitudes toward people with disabilities also reported having grater contact with these people. Wilson, and Scior (2015) found that personal experience and direct contact with people with disabilities enhance positive attitudes toward people with disabilities. However, Barr, and Bracchitta (2008) found that student-teachers' contact with students with disabilities was not associated with their attitudes toward students with disabilities. The following research questions will be answered:

1. What are the general attitudes of UAEU students towards people with disabilities?

2. What is the relationship of gender of students to their attitudes?

3. What is the relationship of area of study of students to their attitudes?

4. What is the relationship of personal contact of students to their attitudes?

Method

Participants
The study was conducted in UAEU in Al Ain during the summer of 2015. UAEU is the largest and oldest university in UAE, and includes students from different countries, reflecting the diversity of UAE. Participants were recruited form across academic disciplines to ensure that students from different disciplines would participate in this study. The sample was a convenience sample of undergraduate students. One hundred and fifty students from UAEU took part in this study (75 female and 75 male). Faculty members were asked by the researcher to have permission to come to their classrooms and distributed the questionnaires.

Instrument
A questionnaire was developed and based on the previous studies (e.g. Alzyoudi, 2006; Alzyoudi et al., 2011; Antonak, Livneh, 2000; Findler, Vilchinsky, and Werner, 2007). The instrument consisted of 30 statements. Each item is based on a 3-point Likert scale (Agree, Neutral or Disagree). High scores represented positive attitudes and low scores represented negative attitudes.

The investigation of the items' content validity was examined by ten experts, among them three experts in measurement and psychometric theory and seven experts in the felid of special education. Based on the experts' responses, two items were eliminated and five items were rephrased. All the experts agreed that the 30 statements were written in clear and precise language and measured the component intended to measure. Reliability was examined by using test-retest stability method, the researcher administrated the questionnaire twice to 40 students. The interval between test-retest-retest was 12 days, test-retest reliability coefficient was .84.

The following independent variables were examined: gender, area of study, and personal contact. The dependent variable was the attitudes of students toward people with disabilities.

Results

The purpose of this study was to examine the attitudes of UAEU students toward people with disabilities. The attitudes were examined using a questionnaire which consisted of 30 items, each item is based on a 3-point Likert scale (Agree, Neutral or Disagree). High scores represented positive attitudes and low scores represented negative attitudes.
To answer question number 1, "What are the general attitudes of UAEU students towards people with disabilities??"

Descriptive statistics were run using SPSS 23.0.

Investigating the mean scores of the different variables, it is clear that the overall attitude of participants is positive towards people with disabilities. The mean scores of the majority of variables were above 2.0 on a 3-point Likert Scale <u>ranging from 3 (agree) to 1 (disagree)</u> with a mid-point of 2 (neutral) for the positive statements and below 2.0 for the negative statements. However, there were few exceptions.

Investigating the percentages of the participants' responses based on agreement or disagreement with attitude statements, it is found that these percentages are aligned with the mean scores mentioned above.

Table 1
Descriptive statistics of participants' attitude towards people with disabilities

Variable	M	S.D	%		
			A	N	D
I wouldn't mind if a person with disability sits next to me	2.7	0.5	6.9	18.5	74.6
People with disability can do lots of things for themselves	2.5	0.6	3.9	28.4	67.7
I wouldn't introduce a person with disability to my friend	1.8	0.9	57.1	21.6	21.2
I wouldn't know what to say to a person with disability	2.1	0.8	29.7	46.1	24.1
I feel sorry for people with disability	2.1	0.7	21.7	42.2	36.1
People with disability want lots of attention from adults	2.3	0.7	5.9	39.4	51.1
I would invite a person with disability to my party	2.3	0.8	12.9	27.6	59.5
I would be afraid of a person with disability	1.8	0.8	50.4	28.9	20.7
I would talk to a person with disability I didn't know	2.3	0.7	17.5	41.0	41.5
People with disability don't like to make friends	1.9	0.7	44.4	38.8	16.8
I would like if a person with disability to live next-door to me	2.2	0.7	11.7	46.5	41.7
People with disability feel sorry for themselves	2.0	0.7	28.3	50.0	21.7
I would be happy to have a person with disability for a special friend	2.3	0.7	9.1	44.3	46.5
I would try to stay away from a person with disability	1.6	0.8	61.7	18.9	19.4
People with disability are as happy as I am	2.2	0.7	11.7	51.3	37.0
I wouldn't like a handicapped friend as much as my other friends	2.0	0.8	37.0	40.9	22.2

	M	S.D	D	N	A
People with disability know how to behave properly	2.3	0.7	10.0	38.3	51.7
In class I wouldn't sit next to a person with disability	1.7	0.8	61.3	19.6	19.1
I would be pleased if a person with disability invited me to his house	2.4	0.7	9.5	34.6	55.8
I try not to look at someone who is disabled	2.1	0.7	30.6	39.7	29.7
I would feel good doing a school project with a person with disability	2.2	0.7	10.9	40.9	48.3
People with disability don't have much fun	1.9	0.7	43.0	37.4	19.6
I would invite a person with disability to my house	2.3	0.8	11.4	30.6	58.1
Being near someone who is disabled scares me	1.8	0.8	49.8	32.3	17.9
I would be embarrassed if a person with disability invited me to his party	1.8	0.8	53.5	28.7	17.8
People with disability are often sad	1.76	0.7	41.9	40.6	17.5
I would enjoy being with a person with disability	2.4	0.7	9.1	40.9	50.0
People with disability can make new friends	2.4	0.7	7.9	30.1	62.0
I feel upset when I see a handicapped child	2.2	0.7	17.0	36.1	47.0
People with disability need lots of help to do things	2.2	0.7	17.4	46.5	36.1

Note. M = Mean, S.D = Std. Deviation, A = Agree, N = Neutral, D = Disagree

To answer question 2: "What is the relationship of gender of students to their attitudes?", independent samples t-test was run using SPSS 23.0 (see Table 2). Results showed very few cases of significant differences between male and female attitude towards people with disabilities. Three items were in favor male participants, while other three items were in favor female participants.

The mean scores for the male participants were significantly higher than female participants mean scores on the following three items: "People with disability don't like to make friends", "People with disability don't have much fun", and "People with disability are often sad."

On the other hand, female participants scored significantly higher than male participants on three items as well namely: "People with disability can do lots of things for themselves.", "People with disability are as happy as I am", and "People with disability are as happy as I am."

Table 2
Participants' attitudes towards people with disabilities in relation to gender.

Variable	Male	Female	t.
I wouldn't mind if a person with disability sits next to me	2.7	2.6	1.179
People with disability can do lots of things for themselves	2.5	2.7	-3.197**
I wouldn't introduce a person with disability to my friend	1.7	1.6	0.740
I wouldn't know what to say to a person with disability	1.9	2.0	-0.217
I feel sorry for people with disability	2.2	2.1	0.440
People with disability want lots of attention from adults	2.4	2.5	-1.370
I would invite a person with disability to my party	2.4	2.5	-1.084
I would be afraid of a person with disability	1.7	1.7	0.824

I would talk to a person with disability I didn't know	2.3	2.2	1.629
People with disability don't like to make friends	1.8	1.6	2.088*
I would like if a person with disability to live next-door to me	2.3	2.3	-0.132
People with disability feel sorry for themselves	2.0	1.9	0.504
I would be happy to have a person with disability for a special friend	2.3	2.4	-1.475
I would try to stay away from a person with disability	1.6	1.5	0.563
People with disability are as happy as I am	2.2	2.3	-2.123*
I wouldn't like a handicapped friend as much as my other friends	1.9	1.8	1.223
People with disability know how to behave properly	2.4	2.5	-0.918
In class I wouldn't sit next to a person with disability	1.6	1.5	1.018
I would be pleased if a person with disability invited me to his house.	2.4	2.5	-0.825
I try not to look at someone who is disabled	2.0	1.9	0.927
I would feel good doing a school project with a person with disability	2.3	2.4	-1.542
People with disability don't have much fun	1.9	1.6	2.561*
I would invite a person with disability to my house	2.3	2.6	-2.729**
Being near someone who is disabled scares me	1.7	1.7	0.241
I would be embarrassed if a person with disability invited me to his party	1.7	1.6	0.669
People with disability are often sad	1.9	1.7	2.055*
I would enjoy being with a person with disability	2.4	2.4	-0.946
People with disability can make new friends	2.5	2.6	-1.109
I feel upset when I see a handicapped child	2.3	2.3	-0.652
People with disability need lots of help to do things	2.2	2.2	0.714

To answer question 3 "What is the relationship of area of study of students to their attitudes?", two types of statistics were run: (1) Two detailed Correlation, and (2) Analysis of Variance (see Tables 3 and 4). The overall results of both types of statistics did not show a strong relationship between participants' attitude and their area of study. Few exceptions were noted as follows:

Regarding the analysis of variance (ANOVA), only one variable "I wouldn't mind if a person with disability sits next to me" yielded a significant difference between participants' attitudes toward people with disabilities due to area of study. When the relationship was investigated using a Pearson correlation, only two items showed a relationship with "area of study". Results showed a linear relationship between people with disabilities need lots of help to do things, and area of study, while I wouldn't introduce a person with disability to my friend, showed a non-linear relationship with area of study.

Table 3
Differences between participants' attitude toward people with disabilities due to area of study.

Variable	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.336	7	1.048	3.103	.004

| I wouldn't mind if a person with | Within Groups | 75.314 | 223 | .338 |
| disability sits next to me | Total | 82.649 | 230 | |

Table 4

Relationship between participants' attitude toward people with disabilities and Area of Study

Pearson correlation between variables and participants' area of study	Area of Study
I wouldn't mind if a person with disability sits next to me	.129
People with disability can do lots of things for themselves	.017
I wouldn't introduce a person with disability to my friend	-.158[*]
I wouldn't know what to say to a person with disability	.055
I feel sorry for people with disability	.033
People with disability want lots of attention from adults	.073
I would invite a person with disability to my party	.091
I would be afraid of a person with disability	-.010
I would talk to a person with disability I didn't know	.101
People with disability don't like to make friends	.123
I would like if a person with disability to live next-door to me	.007
People with disability feel sorry for themselves	.033
I would be happy to have a person with disability for a special friend	-.060
I would try to stay away from a person with disability	-.042
People with disability are as happy as I am	-.034
I wouldn't like a handicapped friend as much as my other friends	-.003
People with disability know how to behave properly	.014
In class I wouldn't sit next to a person with disability	.088
I would be pleased if a person with disability invited me to his house.	.051
I try not to look at someone who is disabled	.089
I would feel good doing a school project with a person with disability	-.079
People with disability don't have much fun	.018
I would invite a person with disability to my house	.017
Being near someone who is disabled scares me	.059
I would be embarrassed if a person with disability invited me to his party	-.038
People with disability are often sad	.003
I would enjoy being with a person with disability	.039
People with disability can make new friends	.105
I feel upset when I see a handicapped child	.050
People with disability need lots of help to do things	.144[*]

To answer question 4, "What is the relationship of personal contact of students to their attitudes?" similar to question 3 statistical analyses, two types of statistics were run: (1) Two detailed Correlation (see Table 5), and (2) Analysis of Variance. The overall results of both types of statistics did not show a strong relationship between participants' attitudes and contact information.

Analysis of variance did not show any significant between participants' attitude and contact information. Similarly, the Pearson correlation coefficient did not show any relationship between attitude and contact information.

Table 5
Relationship between participants' attitude toward people with disabilities and Contact Information.

Pearson correlation between variables and participants' contact information	Contact Info.
I wouldn't mind if a person with disability sits next to me	-.003
People with disability can do lots of things for themselves	-.034
I wouldn't introduce a person with disability to my friend	-.093
I wouldn't know what to say to a person with disability	-.048
I feel sorry for people with disability	-.058
People with disability want lots of attention from adults	-.039
I would invite a person with disability to my party	-.065
I would be afraid of a person with disability	.024
I would talk to a person with disability I didn't know	.110
People with disability don't like to make friends	-.089
I would like if a person with disability to live next-door to me	-.060
People with disability feel sorry for themselves	-.080
I would be happy to have a person with disability for a special friend	-.112
I would try to stay away from a person with disability	-.163
People with disability are as happy as I am	-.050
I wouldn't like a handicapped friend as much as my other friends	-.016
People with disability know how to behave properly	-.117
In class I wouldn't sit next to a person with disability	-.082
I would be pleased if a person with disability invited me to his house.	-.104
I try not to look at someone who is disabled	-.011
I would feel good doing a school project with a person with disability	.046
People with disability don't have much fun	.042
I would invite a person with disability to my house	-.024
Being near someone who is disabled scares me	-.133
I would be embarrassed if a person with disability invited me to his party	-.158
People with disability are often sad	.062
I would enjoy being with a person with disability	-.061
People with disability can make new friends	-.031
I feel upset when I see a handicapped child	.082
People with disability need lots of help to do things	.130

Discussion

UAEU students were surveyed in this study because they will be key stakeholders of future organizations, employers, and people who may also have the power to grant access to people

with disabilities. Previous research (e.g. Alzyoudi et al., 2011, Moges, 2015) has demonstrated that certain factors, such as gender, area of study, and level of contact are factors that affect the attitudes toward people with disabilities. The present study has analyzed these results as mention on the previous section. In this section the results will be discussed as follow.

The first research question examined the attitudes of UAEU students as measured by using the study instrument. The results for this question indicated that UAEU students' attitudes in general are positive, based on the means and standard deviations calculated for the study sample. The results of this study are closely resemble other studies conducted in UAE (e.g. Alzyoudi et al., 2011; Alzyoudi et al., 2015) and other international research (e.g. Dunst, 2014; Tosi and Wang, 2012). It can be interpreted that UAEU students were open to socially interacting with people with disabilities and have no boundaries to make friendships with them and are willing to positively accept those students. The participants' attitudes also suggested that people who are choosing to be sociable and interact with people with disabilities, since the culture requires daily and physical interactions. This can also be explained by the fact that attitude is culture-dependent, as shown by previous studies (Gaad, 2004).

The second question examined attitudes of the participants toward people with disabilities in relation to which their gender. Results showed very few cases of significant differences between male and female attitude towards people with disabilities. These results are not consistent with other studies (Alzyoudi, 2006; Hergenrather, 2007; Li, Tsoi, and Wang, 2012; Moges, 2015; Parashar, Chan, Leierer, 2008) who addressed gender differences in attitudes towards students with disabilities. However, the previous result is closely resembles with Hampton and Xiao's study (2010) who demonstrated that there was no relationship between attitudes and gender.

Three items were in favor male participants, while other three items were in favor female participants. The mean scores for the male participants were significantly higher than female participants mean scores on the following three items: "People with disability don't like to make friends", "People with disability don't have much fun", and "People with disability are often sad." These results can be explained by the male's tendency to act out and their desire to make friendship and going out with their friends. On the other hand, female participants scored significantly higher than male participants on three items as well namely: "People with disability can do lots of things for themselves.", "People with disability are as happy as I am", and "People with disability are as happy as I am." These results can be explained by the cultural norms of nature and caring which usually expressed by female in our society.

The third question examined attitudes toward people with disabilities due to area of study of the participants. Results did not show a strong relationship between participants' attitudes and the area of study. This result is not supported by the literature review (e.g. .Bekle, 2004; Tshtoosh and Kasaleh, 2010) who indicated that the area of study may be one factor of predicting university students 'attitudes towards students with disabilities. This result is consistent with Wozencroft, Pate, and Griffiths (2015) who indicated that the area of study found to have had little impact on students' attitudes toward people with disabilities. This can be explained by the fact that UAEU offered all the facilities for both student with and without disabilities as well as the local community, the leaders at the UAEU realized that students with disabilities should receive high quality of services, therefore, they established Special Needs Services Center (SNS) to ensure that all UAEU students with disabilities have access to educational opportunities equal

to their fellow students. The university awareness and attitudes toward people with disabilities can create a culture of acceptance of students with disabilities.

Regarding the forth question, attitude of the participants toward people with disabilities due to contact information, results of both types of statistics did not show a strong relationship between participants' attitudes and contact information. This finding is inconsistent Hein, Grumm and Fingerle (2011). This could be explained by the fact that most students with disabilities at UAEU have hearing, visual and physical disabilities. Therefore, the students have limited contact with various disabilities, even if students indicated a contact level, it may not necessary mean social interaction. It may simply indicate having a classmate who is blind or deaf, not necessary havening interpersonal relationship.

According to my experience as a researcher and instructor, it is a complex task to change attitudes; however, continuous research and increased education that challenge existing beliefs are two of the most effective methods to influencing change in attitudes. To influence the formation of positive societal attitudes and behaviors toward people with disabilities.
It is, however, vital that researchers continue to study attitudes and discuss implications for the education of rehabilitation professionals and general members of society about the overall characteristics of people with disabilities. Improving attitudes toward people with disabilities require increased exposure to positive experiences with people with disabilities.

In conclusion, university awareness and attitudes toward people with disabilities can create culture of acceptance or negatively for students with disabilities. Interestingly, the majority of the participants in this study report feelings of respect for people with disabilities. While the result may be positive, it is possible that people with disabilities may not want to feel respected because of their disability. Some students feel some time embarrassment when interacting with students with disabilities. This further enforces the need for orientation programs for students and provide information about students with disabilities to students without disabilities, and what students without disabilities can do to promote inclusion for their collogues with disabilities. Disabled student services offices could also make use of the information from this study in preparing their students for what they could expect to encounter in various colleges.

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Students with Asperger's Syndrome Participating in Recess

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Abstract

The participation of a student with Asperger's Syndrome (Asperger's) in recess can often be rewarding for the student with Asperger's, peers, and teacher. This paper will address common characteristics of students with Asperger's and present basic solutions to improve the experience of these students in the recess setting. Initially the definition, prevalence, and characteristics of Asperger's will be presented. The paper will then address the benefits of recess for children with the disorder and provide modifications recommendations for addressing children with Asperger's in recess.

Definition and Prevalence of Asperger's Syndrome

The Individuals with Disabilities Education Act (IDEA) states that children who are determined to have disabilities receive special education if the condition negatively affects the educational performance of the child. One disability category defined in IDEA, which includes a variety of specific disabilities, is autism. The following definition of autism is noted in IDEA (2007):

Autism, as defined by Individuals with Disabilities Education Act (IDEA), refers to "a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects a child's educational performance." This federal definition then proceeds to name traits commonly related to the condition: "Other characteristics often associated with autism are engaging in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. The term autism does not apply if the child's educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in [Individuals with Disabilities Education Act, 2007, p. 300-A].

Asperger's Syndrome is defined as "a neurobiological disorder on the higher-functioning end of the autism spectrum. An individual's symptoms can range from mild to severe." (Asperger's Spectrum Education Network, 2016, p.1). It is to be noted that Asperger's is not specifically noted in the IDEA definition of autism. However, the Diagnostic and Statistical Manual of Mental Disorders – V recognizes a "consolidation of autistic disorder, Asperger's disorder, and pervasive developmental disorder into autism spectrum disorder. Symptoms of these disorders represent a single continuum of mild to severe impairments in the two domains of social communication and restrictive repetitive behaviors/interests rather than being distinct disorders."

(American Psychiatric Association: DSM-V, 2013, p. xlii). Thus, according to the DSM-V, a child with Asperger's syndrome is on the autism spectrum and is covered by IDEA if the disorder negatively effects the education of the child.

One in 68 births involves children with an Autism Spectrum Disorder (ASD). Around 75% of these cases are Asperger's syndrome (Asperger's Network Support, 2014). This equates to roughly one in 100 births resulting in a child with Asperger's Syndrome. Using these numbers, one can assume that for about every four classes in an elementary school (approximately 25 students per class), one child would be considered to have Asperger's Syndrome.

Characteristics of Asperger's Syndrome

The importance of diagnosing childhood Asperger's is very important. Asperger's varies from person to person. No two individuals with the disorder are the same. Asperger's syndrome is generally considered to be on the "high functioning" end of the Autism Spectrum. Children with the syndrome may display the following characteristics:

- Obsessive interest in a single object or topic to the exclusion of any other
- Repetitive routines or rituals
- Peculiarities in speech and language
- Socially and emotionally inappropriate behavior
- Inability to interact successfully with peers
- Problems with non-verbal communication
- Clumsy and uncoordinated motor movements (National Institutes of Neurological Disorders and Strokes, 2016).

Benefits of the Recess Setting for Children with Asperger's Syndrome

Simply stated, the benefits of the recess setting are high for all children. Included in these benefits are both physical and social benefits. In terms of physical and social benefits, recess has been shown to lead to:

Physical Benefits
- Improvement of out-of-school activity levels – children usually are involved in physical activities on days in which they participate in in-school physical activities (Dale, Corbin, & Dale, 2000).
- Improved general fitness and endurance levels which could include the following:
  - building strength
  - improving coordination
  - improving cardiovascular fitness that helps to reduce childhood obesity and its related health complications (Kids Exercise, 2009).
- Improvement to practice basic motor skills including ball skills and a variety of locomotor skills

Social Benefits
- Mechanisms for students to decompress, regroup, and get ready to face the remaining portion of the day (Lucci, 2016)
- Mechanism to engage in a variety of unstructured social situations which includes the opportunity to communicate with peers
- Mechanism to model appropriate social behavior
- Mechanism to practice emotional responses to a variety of outcomes, including positive and negative (irritability)

For children with Asperger's, the social benefits of recess can be extremely important – although the physical benefits should not be forgotten. Imagine a child with Asperger's being completely included with peers in recess activities as opposed to walking aimlessly around a playground. This student would probably be able to improve on his/her social skills and relationships with others because of potential positive interactions simply as a result of basic modifications to the recess setting. This is one of the few times during a school day when this can easily be achieved because of the less-structured environment.

Recess Modification Recommendations for Children with Asperger's Syndrome

To achieve the goal of positively addressing some of the characteristics often associated with recess, a few procedures should be put into play. The most important is for the special education, classroom teacher, and specialist (e.g. physical education and music teacher) relay observations and concerns amongst each other and to the school administration, and guidance counselor for possible instructional and behavioral management suggestions. In addition the following recommendations should be put into place to improve the recess experience for students with Asperger's Syndrome.

Characteristics	Recommendations
Obsessive interest in a single object or topic to the exclusion of any other	The teacher should remove the object that is the target of obsessive interest if possible. The teacher can tell the student that after successful completion of an activity an object/topic will be "returned" to the student for a brief time if safe or a topic will be briefly discussed again for a short time.
Repetitive routines or rituals	The student should be given the opportunity to participate in different activities daily – make "other" activities available. An example would be to play in a different area where the swing set is not available – to discourage the same daily recess routine (if that is the activity that is mostly being used).

Peculiarities in speech and language	The teacher should possibly have the student with Asperger's relay items to an individual for whom he/she feels more comfortable, who can then relay it to the rest of the group. The teacher should encourage and demonstrate proper language. The teacher should teach the other students not to taunt the student.
Socially and emotionally inappropriate behavior	The teacher can give the student with Asperger's individualized instruction on how to participate – what is appropriate activity for the game – kicking the ball, running with the ball, etc. The teacher can stress cooperation instead of competition to avoid triggers of emotionally unacceptable behavior. The teacher can explain and demonstrate spatial awareness to the student with Asperger's – remaining in personal pace.
Inability to interact successfully with peers	The teacher can participate with the student for a short period of time (other students may be drawn to this activity). The teacher can possibly simply step away from the activity and the activity would possibly continue with the child with Asperger's being included.
Problems with non-verbal communication	The teacher can provide a buddy for whom the student is comfortable who can help him/her socially by noting or demonstrating appropriate behaviors. This could possibly lead to better or more understandable non-verbal communication.
Clumsy and uncoordinated motor movements	The teacher should always guarantee that there are activities that the student can easily perform – simple activities like tossing/catching a ball with a partner from a short distance, and jumping over a rope "back and forth" that is placed on the ground, instead of traditional jump roping. Less complex movements can improve the success rate for the child and not lead to embarrassment.

Again it should be noted that collaboration is essential in providing for a positive recess environment. School personnel can hopefully put procedures in place to address the root of the problem, not simply to deal with the characteristics.

Conclusion

The participation of a student with Asperger's Syndrome in recess can often be both challenging and rewarding for the student, peers, and teacher. The rewards can manifest themselves in the ability of the teacher to provide an environment that is socially "acceptable" to the student with the syndrome and allows for participation with peers. Students with Asperger's Syndrome can increase their knowledge in interacting with others and begin to understand how to participate in a social setting.

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School Policies Regarding Children with Auditory Processing Disorders

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Abstract

School districts may not identify students diagnosed with auditory processing disorders as meeting the criteria for special education services under IDEA. Parents may have to fight school districts to obtain services for their children identified as having auditory processing disorders (APD). Courts have ruled that students who have auditory processing disorders meet the criteria for special education under IDEA. Some states and local school districts have developed protocols for identifying students as having APD meeting the standards for IEPs and 504 accommodation plans. Yet, other school districts may refuse to accept that a student diagnosed with auditory processing disorders meets the criteria for such support, whether through an IEP or 504 plan.

This paper discusses that auditory processing disorders have always been part of the identification of special education needs for students since the Education of All Handicapped Children act (PL-94-142) into present day IDEA as well as what court cases have found, including federal cases. The underlying theme is that students having educational problems because of APD problems are entitled to either IEPs or 504 accommodations because their disabilities (their APD problems) are identified disorders under federal laws.

School Policies Regarding Children with Auditory Processing Disorders

Special education professionals often see children struggling to "get" what is verbally presented in class by teachers and during class discussions. These students are often referred to the special education team in their school districts because of these struggles in "listening". The team may have the students evaluated for cognitive, behavioral and emotional problems by the school psychologist, for educational achievement abilities by the school psychologist or special education evaluator, for speech and language difficulties by the speech-language pathologist, and by other specialists if there are other educationally related concerns identified. However, if a student is seen having problems "listening" or dealing successfully with auditory-verbal information, the outcomes from the above listed professionals will be reviewed possibly accompanied by a basic hearing evaluation completed by either the school nurse or an audiologist who merely assesses the student's hearing abilities. Yet, the underlying problem with many students having these "listening" difficulties is an auditory processing disorder also known as APD or CAPD (central auditory processing disorder) or (C)APD ((central) auditory processing disorder) (AAA, 2010; ASHA 2005). However, none of the evaluations completed by the professionals listed above assess such disorders. The school team may decide that the psychological, educational, speech-language, and hearing evaluations completed are sufficient and determine that the student has no problems in the areas assessed. The team may then decide that the student does not meet eligibility for an IEP or for a 504 plan. At that point, the student receives no support and continues to struggle revealing problems learning that can make the child feel insecure, deteriorate in his/her academic functioning, and even lead the student to lose confidence and feel "dumb".

Auditory processing disorders are hidden problems. They typically occur in people having normal hearing so that standard hearing tests do not identify such problems. Yet, students having auditory processing problems can have a variety of difficulties that will interfere with the child's abilities to make sense out of the auditory-verbal information presented in class as well as in social communication situations. Since the student would not know that he or she has a problem, the student would not ask for help but would think that what was processed was correct and was the complete information presented. However, the information processed may be incomplete, improperly processed, and incorrect.

What often may be the problem is that educators do not understand what are auditory processing disorders and how they can affect a student's learning and functioning in school (California Speech-Language-Hearing Association, 2007; Colorado Department of Education, 2008; Garfinkel, 2003; Minnesota Department of Children and Family Learning, 2003; Minnesota Speech-Language-Hearing Association, n.d.). Additionally, not truly understanding auditory processing, school special education teams may think that evaluations completed by school professionals, such as psychologists and speech-language pathologists, are sufficient and appropriate to determine if a student has an APD. The purpose of this paper is to review the literature regarding what educators understand about APD. Additionally, this paper will discuss what the courts, school districts and state education departments have identified regarding the diagnosis of APD as an appropriate educational disability supporting a student's need for an IEP or 504 accommodation plan. Most importantly, this paper will discuss what has been identified in the definition of typical disabilities that are part of the IDEA under which APD problems could be classified.

What Educators Understand about APD

A recent publication by Kaul (2017) discussed the problems Dr. Kaul, a certified/licensed audiologist and speech-language pathologist specializing in APD, has come across relative to educators and students who have APD problems. Kaul reports that educators appear reluctant to referred students for auditory processing testing because of some "inherent fear in addressing and/or diagnosing auditory processing skills" (p.7). She questions whether this "fear" may be related to the inconsistencies in how professionals define auditory processing and its disorders. That is, even within the audiological community, professionals argue about how to define and approach auditory processing so that educators may find audiologists taking different stands as to whether auditory processing is a real disorder or not (DeBonis, 2015; Hawkins & Lucker, 2017; Garfinkel, 2003; Murphy, n.d.), and how to approach and identify auditory processing disorders in children (AAA, 2010; ASHA, 2005; DeBonis, 2015; Hawkins & Lucker, 2017). Kaul goes on to say that these problems can interfere with schools agreeing to provide an educational label for students identified with APD issues, although she also says that the schools might provide labels such as Other Health Impaired (OHI) or Specific Learning Disability (SLD), but only if there are test results supporting the SLD factor other than the APD test findings. The OHI label may be provided when the school personnel feel there are accommodations that can be provided, but no special education or related services are identified as needed. Yet, these students with APD problems are having academic failures, struggling to learn and understand what is being taught in their classes, and difficulties understanding information presented by teachers. Kaul identifies that the ultimate resolution to this problem would be to get schools to accept APD as a category under IDEA. This could occur by creating a new category called APD or CAPD or making APD

a subcategory under an already existing category. This second option does exist for some school districts and is discussed further later in this paper.

When considering whether school personnel identify APD as a concern for students, research has identified that this has been the case. For example, Heines, Slone, & Wilson (2016) reviewed case files of students referred for audiological evaluations because of concerns with auditory processing disorders. Looking at case history information for 150 students, the authors identified that educators were the number one referral source recommending that the students be seen by audiologists for auditory processing testing. The most common reasons for making these referrals were concerns with literacy (reading and spelling), academic problems, listening problems, "processing" difficulties, speech problems, language difficulties, hearing concerns, and emotional-behavioral issues. This list indicates that the most common concerns were educationally based (literacy, academic problems, listening problems, "processing" difficulties, followed by speech, language and hearing concerns, with emotional and behavioral factors seen as the last reason for making referrals for audiological assessments of auditory processing). Correlations revealed that the strongest relationship was between referrals by educators for these academic learning concerns than for the other factors. Thus, the authors concluded that their results indicate that educators view APD as more of an educational concern rather than a specific speech or language concern. Thus, it is wondered why school districts would have problems providing IEPs for students having APD problems.

In another study regarding educator's knowledge and awareness of APD, Ryan and Logue-Kennedy (2013) looked at such factors in primary school teachers in Ireland. Using a questionnaire distributed to 53 primary schools, findings revealed that 89.1% of respondents reported poor awareness of APD, while 90% reported poor understanding. Thus, the overwhelming majority of primary school educators in this study identified a lack of good knowledge of APD. Yet, as Heines et al. (2016) identified, the greatest referral source for auditory processing testing reported by parents was from school personnel. As such, educators may think they know what is and what is not auditory processing and its disorders, but there appears to be a lack of understanding of this problem and how it can affect students educationally by many school professionals. This lack of knowledge and understanding could be a reason that APD is not identified openly as an acceptable category for special education and resource services under IDEA and for accommodations under section 504.

What School Districts Have Done Regarding Accepting APD as an Educational Disability

One argument often presented regarding a student diagnosed with an auditory processing disorder is that the diagnosis (typically by a certified/licensed audiologist) is a clinical diagnosis and not an educational problem. For example, Murphy (n.d.) identifies that many look at auditory processing as a clinical diagnosis and not as an educational problem. ASHA (2005) and AAA (2010) publications about auditory processing and problems one can encounter when a person has APD focus more on the clinical diagnosis of APD. Yet, Murphy (n.d.) goes on to say that 40 to 65% of the school day is spent in learning through listening for students. Thus, if a child has a problem (whether clinical or otherwise), this problem can interfere with the child's appropriate education and access to learning. Thus, a student with an APD can have educational problems because of the listening difficulties associated with this processing disorder.

What the author finds most interesting is that attention disorders (ADHD, Inattentive type, Hyperactive, and Combined) are clinical problems, and ADHD is a clinical/medical diagnosis. Yet, school districts accept children with ADHD needing special education support through IEPs and accommodations through 504 plans. Why is it that a student with what schools might associate as a clinical diagnosis having APD who also have difficulties learning may be denied these special education supports and accommodations? The author believes what the publications have identified: a lack of true understanding by school personnel regarding what is APD and how it can affect children and their learning as well as a lack of school districts having professionals with appropriate backgrounds to provide APD evaluations and treatments.

When we consider the lack of understanding, publications have been developed by a number of school districts, state education departments, and professional associations within states providing input to the school that are meant to educator and inform special education professionals and all school personnel about what is APD, how it can affect students, and what can be done to educate, accommodate, and teach students who have APD problems (California Speech-Language-Hearing Association, 2007; Minnesota Department of Children and Family Learning, 2003; Minnesota Speech-Language-Hearing Association, n.d.; Murphy, n.d. (from) Santa Cruz, CA); Ventura County SELPA, 2011). These publications are from a few of states, not representing a wide variety of states. Thus, many states may not have publications addressing APD problems in students in their schools. They may expect local school districts deal with the issue of APD problems in students within their district.

This factor of leaving it up to the local school districts has led to a number of court cases. A search of the literature indicates that many of these cases are from the state of California, but it is likely that similar factors have occurred in many other states. From the review of the literature, the following was found. Murphy (n.d.) states that, "The California Office of Administrative Hearings for [Public School] Special Education has over 500 notices of fair hearings with the term Auditory Processing Disorder" in the title of the hearing. One of the more recent cases from California involved parents who sued the Pajaro Valley Unified School District in Northern California in 2014 (Lucker, 2015; McCarthy, 2014; United States 9th District Court of Appeals for the Ninth Circuit, 2014). The parents stated that the Pajaro Valley Unified School District denied their child a free and appropriate public education (also known as FAPE) because they denied him special education support due to his diagnosed APD. The parents identified that after they moved (twice since the Pajaro school district's denial), two other school districts in which they resided did provide their child with an IEP. One school district identified that the child had a Specific Learning Disability (SLD), while the other school district provided him support services under the designation of Other Health Impaired (OHI). The Court of Appeals determined that if a student is having educational problems, and the diagnosis is APD, the student is eligible under IDEA for an IEP either as having an SLD or OHI. In the present case, they identified that the student met the criteria for OHI. However, they go further to state that this special education designation is only appropriate if supported by evidence of educational problems.

This court decision led to McCarthy (2014) publicizing the findings in one of the professional journals of the American Speech-Language-Hearing Association (ASHA). In reaction to that article, Lucker (2015) wrote a letter identifying that the identification of APD as an SLD is supported by the definition of SLD going back to the original Education of All Handicapped

Students law (P.L. 94-142). This same definition of SLD is in the IDEA (Center for Parent Education and Resources, n.d.; LD OnLine, 2017). As Lucker points out in his published letter (2015) as well as in a publication of the Journal of the American Association of Special Education Professionals (2012), SLD is identified as a disorder in understanding spoken language involving problems with listening that can be due to a perceptual problem. This description of SLD is the first identified specific problem for children with learning disabilities. Thus, PL 94-142 and IDEA have identified that the first problem that may be seen in children with learning disabilities is a listening problem or what we call an APD issue. Thus, as Lucker (2012, 2015) points out, if a child is found to have learning problems in school and the only diagnosis found for the child is an APD, the child would be classified as having an SLD. In contrast, according to the U.S. 9th District Court of Appeals findings (2014), if the child is not meeting the discrepancy criteria for a learning disability, but the child is having educational access problems and difficulties learning in school due to underlying APD issues, the child would meet the criteria for OHI designation and could then be provided with accommodations and resource services under a 504 plan. If, on the other hand, the child has APD problems and is also found to have speech-language deficits, the child could meet the criteria for Speech-Language Impaired or SLI and receive an IEP or 504 plan.

What Needs to Be Done to Change School Policies for Students with APD

What the author has identified is that there are problems for students who have APD issues obtaining FAPE and accommodations appropriate to their needs because of their listening and learning problems. The discussions to this point have demonstrated that students with APD problems may not obtain appropriate special education supports and accommodations needed. A large part of the problem is a lack of education and understanding of auditory processing and its disorders on the part of school personnel, especially special education professionals. What has happened is that schools have denied students with APD problems appropriate and needed services, and parents have had to fight the schools to try to obtain such services for their children.

The conclusion drawn is that there are some state associations (Education Departments, Special Education Organizations, and Speech-Language-Hearing Associations) as well as professionals, including this author, who have made numerous attempts to educate and change school districts' understanding and policies regarding the need for appropriate evaluations and services, including IEP goals and accommodations, for students diagnosed with APD. In moving forward, what is needed are a number of factors.

The most important is education to increase understanding and inform special education professionals, general educators, and all school personnel regarding what are the indications that a student might have an auditory processing disorder, how auditory processing problems can affect a student educationally, in communication, and can affect the student's emotional state and self-image. There are a number of documents available on the internet, many of which were cited in this article. Some are from professional associations (AAA, 2010; ASHA, 2005; California Speech-Language-Hearing Association, 2007; Minnesota Department of Children and Family Learning, 2003; Minnesota Speech-Language-Hearing Association, n.d.; Ventura County SELPA, 2011). There are many professionals throughout the United States who could provide in-service education to school districts, especially special education personnel. School districts

that claim they do not have professionals who can provide appropriate evaluations for students regarding auditory processing and its disorders can be provided with webinars, on-line distance learning courses, or have professionals who specialize in auditory processing evaluations and treatments provide training for school professionals.

In addition to educating school personnel, there is a need to modify the IDEA so that there is a category that includes APD or a special category for APD is included in the IDEA. When the IDEA was first developed, it based many of its special education factors on the former PL94-142 identified categories for designating students as meeting the need for special education services. However, at the time PL94-142 was written, the area of auditory processing and APD was not widely accepted or understood. Since the inception of the special education laws (especially PL94-142), much more is known about and understood regarding APD, how it affects children on an educational level, how it can be appropriately assessed, and treatments for problems with auditory processing. When the IDEA was being reauthorized during the early 2000s, there were hearings in many local places regarding people's reactions to the IDEA legislation effective at that time. The author presented testimony at one of these hearings about including APD in the revised IDEA (IDIEA). However, as anyone reading IDIEA would see, it was never included.

In writing this article, it is hoped that readers will share the information with their school districts and legislators to move them to have APD accepted as a special education category either under one of the existing categories, such as SLD, OHI, or SLI, or push for a new category to be developed for APD. The need is present. There are many students in your schools now who might have learning problems because of APD issues who are not being provided with appropriate special education services. Let's work together to change the future for these children and make it better so that they can be successful in school, in their careers, and in lives.

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Uncrossing the Wires of Technology for Students with SLD:
Parent, Student, and Teacher Perspectives

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Abstract

In a changing technological world, finding the proper technologies to help the meaningful acquisition of skills for students with specific learning disabilities (SLD) is challenging. This paper will explore the various viewpoints of parents of students with SLD, students with SLD, and teachers of students with SLD, must consider when selecting those technologies. A review of extant literature and suggestions for implementation follow.

Uncrossing the Wires of Technology for Students with SLD:
Parent, Student, and Teacher Perspectives

As technologies emerge, schools are beginning to collapse the continuum of placement options for students, particularly those with SLD (Fuchs, Fuchs, & Stecker, 2010). Over 90% of students with SLD receive their education in the general education classroom for more than 50% of the school day, as opposed to pull out programs or self-contained classrooms (U.S. Department of Education, 2013). With more students served in general education settings, teachers need to find ways to meet the learning goals of all students at the same time while delivering sound instructional strategies for those with SLD. Technology can be a low cost, personalized, and less intrusive intervention for reaching students with SLD.

Parents of students with SLD have a need to offer their child strategies in the home environment to aid in their student's success. While schools can provide inservice for parents, they often fall short in delivering instructional and management strategies in a way that is accessible to parents. Without collaborative problem solving about specific instructional needs of students with SLD, parents rely on web searches, support groups, and word-of-mouth to inform the trajectory of home-based interventions relevant to their student. There are technological advances that can help parent engagement in managing their student's learning outside the classroom, and offer the executive functioning strategies students with SLD struggle to balance (Grinblat & Rosenblum, 2016).

Students with SLD need to learn to self-regulate and select strategies and applications that are relevant to their own learning. While this practice may be intuitive for some, evidence suggests that students with SLD need intentional direction towards applications that meet their learning needs (McMahon & Walker, 2014). Students with and without disabilities find it difficult to deeply understand their own learning. A way to mediate the development of this metacognitive process is with instructional technologies.

Finally, teachers who work with students with SLD need to know how to critically analyze applications and the application's purpose to offer intentional guidance for students with SLD. They need to have a repertoire of tools to use for students with SLD to help reinforce and accommodate instructional practices in a general education setting. It is the intersection of these three stakeholders that evolves an in-depth, wraparound approach that gives technological supports for students with SLD.

Parents of Students with SLD
Users of the internet explore everything from finding cures to illnesses to setting up a social presence. It is through the internet that parents often find themselves looking for answers relating to their student's SLD (Test, Kemp-Inman, Diegelmann, Hitt, & Bethune, 2015). In the vast chasm that is the internet, there is very little guidance to help parents discern fact from fiction and best practice from pop culture. Parents of children with SLD may find it challenging to find evidence-based practices relating to choosing technology to meet their child's needs.

Parents of students with SLD have specific parenting needs. Three of the greatest needs of students with SLD are following directions, learning independent life habits, and time management (Richards, 2008). These needs translate into parents working with their child on organization, executive functioning, and task analysis (Kirk, Gallagher, & Coleman, 2015). Although there are apps that support each of these areas (e.g., MindNode®, Finish®, and Explain Everything®), trying to find specific resources for parents in technology may be challenging and daunting for the family. While there are many resources that specifically help parents of children with disabilities discern quality applications for their devices that deal with transition (Smith, English, & Vasek, 2002; Skellern & Astbury, 2014; and Carroll, 2008), there are few in the way of quality resources that target applications for school-aged students.

One resource parents can access is the Joan Ganz Cooney Center Report (2016), which states that choosing apps for a child should encompass three concepts: supporting learning and growth, encouraging communication, and connecting people and experiences. Spending family time with apps can be a starting point for family conversations. Apps can connect children with long-distance relatives and can help children learn to express their feelings. By opening the dialogue between parent and child, these apps can guide the acquisition of other skills such as webbing, mind mapping, analysis, and self-monitoring.

Technology in the home can support instruction, but families need to vet which technology is valuable and which technology is superfluous. Mobile applications, such as ZOOM© and MeetingBoard©, that encourage communication may open the door to collaboration between the parent and the child and the parent and the teacher. Beecher and Buzhardt (2016) found that the use of a mobile app was a good way to have open communication between the family and the teacher, but often this communication was superficial and lacked the depth needed to affect student outcomes. Therefore, schools and families need specific training on how to communicate in a manner that will improve student learning and engagement.

Henderson and Mapp (2002) found that family and school collaboration yields positive learning outcomes for students. Parents need to feel linked to their child's learning. However, they are

often unsure how collaboration might translate into learning at home or what is "best practice" for supporting students with SLD.

Students with SLD
Students with SLD tend to have dysfunction in their executive functioning (EF) and exhibit problems processing information (Kirk, Gallagher, & Coleman, 2015). Students with SLD are also neuroatypical and exhibit characteristics that may cause them to struggle in an academic area (National Joint Commission on Learning Disabilities, 2016). These characteristics lend themselves to introducing technologies that aid students with SLD through accommodating the curriculum. Computers or tablets are a way to help students on an individual basis, as directed in their Individualized Education Program (IEP) (Lewandowski, Wood, & Miller, 2016).

There is some support for using technology to help provide students with SLD academic reinforcements. Gonzalez-Ledo, Barbetta, and Unzueta (2015) explored the effects of using a computer graphic organizer program during planning on the narrative writing compositions of four fourth- and fifth-grade boys with SLD. They found there was improvement in student outcomes when students used computer graphic organizers.

A systematic review by Ciullo and Reutebuch (2013) examined the use of computer-based graphic organizers for students in grades 4-12. One of their findings suggests that when paired with explicit instruction, the use of computer-based organizers yielded a positive effect in secondary school students. Teachers can implement this into the classroom by teaching all students how to access proper technologies that will aid in organizing their studying. Ciullo, Falcomata, Pfannensteil, and Billingsley (2015) researched a software program for effectiveness in the areas of primary school science and social studies.

Ciullo, Falcomata, Pfannensteil, and Billingsley (2015) suggest that computer-based concept mapping was effective in aiding students in grade school reach positive academic outcomes. The researchers used Kidspiration© in the areas of science and social studies in their research. Participants [3rd and 4th grade students with SLD] in the study reported they had more fun learning information using the technology while teachers reported that the students retained instructional concepts better. Teachers of students with SLD can use Kidspiration©, Mind Vector©, or similar programs to encourage students to intentionally think about complex concepts and as an advanced organizer.

Students with SLD have specific learning needs. One way to meet the academic and social needs of students is through video modeling (Kellems and Morningstar, 2012). Video modeling (VM) consists of a video of someone other than the student modeling and performing a target task correctly (Kellems, et. al, 2015). Using VM to show tasks such as complex mathematical equations, or in a social context such as reciprocity in communication, offers the student with SLD a way to retrieve the correct behavior for the task without relying on peers or educators to show them the process each time. One way teachers can use video modeling is by archiving different videos in a computerized database. For example, if the teacher has a video on regrouping in addition, the student with SLD could go to the database and choose the applicable VM and watch the video prior to independent practice, or during independent practice. This powerful tool is also one that families can use to support student learning at home.

Another way to support students with SLD in the classroom is with applications such as Voice Dream Reader© or Dream Writer©. Each application allows students the capacity to have text read to them, or to edit writing the student produces through text to speech capability. Both apps encourage students to become independent learners, to self-monitor, and to access the curriculum.

Technology in the Classroom
There is evidence that the current use of technology in classrooms is less than applicable to direct learning. Schools dedicate entire computer labs to "drill and kill" software applications that are based on reviewing rote skills or in preparation for high stakes testing. It is common to hear teachers say they have a class set of tablets, but they are sitting in a closet because they do not know what to do with them (Peluso, 2012). On the occasions when teachers do use technology, they sometimes misuse it and technology becomes a disadvantage, instead of an advantage, towards students' progress. In this way, technology becomes a "time burner" and not integrated into instructional practice.

King-Sears, Swanson, and Mainzer (2011) state, "students who access games on computers should be learning, reviewing, or practicing content directly related to specific goals. Absent such instructional contexts, the technology may be unnecessary or, worse, detrimental to learning" (p. 570). In other words, integrating student learning with technology must be intentional to meet the needs of the student, the teacher, and to achieve a learning goal. Ditzler, Hong, and Strudler (2016) found that teachers often use iPads as educational distractors for students who either could not work on level with other students or for those who finished their work early. Teachers and students alike are also inefficient at using the tablets. Using technology in this manner does not support student learning and potentially could have an influence in how students access technology in the future.

Teachers of Students with SLD
Teachers, themselves, are not always digital natives. Digital natives are individuals born after 1980 (Prensky, 2001). More experienced, veteran teachers do not have the lifetime of experience with technology that their students may show. Prensky's (2001) original definition of a digital native reflected students in K-12 settings. However, these individuals are now entering, or are already in, the educator workforce. Nonetheless, students and newer teachers may not be as technologically competent as one may think.

Lei (2009) reports although digital natives may be competent in basic level technologies, "being able to use technology does not necessarily mean being able to use technology critically, wisely, or meaningfully" (p. 88). Despite the instructional leader's lack of technological awareness and competence, students turn to their teachers for guidance to use technology in the classroom. Students with SLD may have several technological devices and application at their disposal, such as a laptop, tablet, handheld text to speech reader, or apps such as *Awesome Note 2©, Notes Plus©*, and *grow grammar©*; however, without meaningful input from their teacher, students with SLD may fail to apply these tools effectively.

Bouck et al. (2012) argued that everyday technology should be repurposed to engage students in learning and make technology more accessible and individualized for students with SLD. The use of everyday technology might be useful for teachers as they learn to integrate technology

into the classroom, as well as assist digital natives in actively using technology for learning and not just socializing.

Students with SLD have academic and behavioral barriers that can influence success in school (Murray & Pianta, 2007). Teachers of students with SLD need explicit knowledge of how personal technology can intersect with classroom instruction. Students with SLD often struggle with executive function including organization, time management, planning and predicting (Kirk, Gallagher, & Coleman, 2015). These characteristics impact learning in the classroom, as well as every day and home life.

There are different frameworks through which teachers can view technology, such as TPACK (Mishra and Koehler, 2006) and a modification of the instructional framework of gradual release of responsibility (Northrop and Killen, 2013). Even with the availability of these frameworks, teachers still have a hard time choosing technology appropriately.

Okolo and Diedrich (2014) conducted a widespread study regarding teachers' views of technology and found that despite understanding the importance of student participation in the classroom, student achievement at school, or student behavior, the teachers surveyed did not rank those as the top three technological considerations when recommending technologies. It is imperative that no matter the framework, teachers consider student outcomes as the primary lens through which they select technology.

Uncrossing the Wires

When teachers of students with SLD think and work with the future in mind, they find technologies that students can apply towards future use. There are several tools available for teachers to use to critically analyze technology and its appropriateness for students with SLD (Boone & Higgins, 2012). A straightforward way to approach this analysis is to think of the technology in terms of accessibility to the content, enhancing the content, and encouraging collaboration among and between the content (Gerzel-Short & Dorel, 2016). This allows for an objective view of technology and helps contextualize the technology usage.

The planning of the use and integration of technology must be intentional when working with students with SLD, whether from the parent, student, or teacher perspective. It is this intersection that allows for collaboration among families and professionals to thrive. This collaboration now becomes critical discourse, with *Every Student Succeeds Act of 2015* (ESSA). ESSA mandates engagement of the family, instead of involvement. Engagement is active and means parents are authentic partners. Involvement is equivalent to parents and families "peering in" on the process. Engaged families select technologies that meet the needs of the student with SLD.

Teacher preparation programs and teachers need to engage with *all* stakeholders in selecting and using instructional technologies so that students with SLD can successfully access core instruction and eventually apply instructional technologies beyond the school-age years. Achieving this goal occurs through the strategic design of instruction and collaboration with families.

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