

Research Paper

Examining the Use of Therapeutic Recreation in Schools and the Implications on Students' Social Interaction Behaviors

Heather L. Shultz
Angela J. Wozencroft
David F. Cihak

Abstract

The purpose of this study was to determine the impact of a therapeutic recreation program on social interaction behaviors of students with disabilities. Specifically, this paper examines a service-learning course called Project Therapeutic Recreation in Public Schools (TRiPS) offered at a large public university in the Southeast. In the current study, 18 students with disabilities were observed on five social interaction behaviors: (1) “motor gestural positive” behaviors, (2) “motor gestural negative” behaviors, (3) “vocal verbal positive” behaviors, (4) “vocal verbal negative” behaviors, and (5) “response to environment” behaviors. Results indicated instances where there was an increase in the frequency of students with disabilities' social interaction behaviors. Further examination of the developed activities implemented provides insight into why significant differences in some social interaction behaviors exists and direction for future research. Limitations of the study and implications are discussed.

Keywords

schools, Social Interaction Theory, therapeutic recreation

Heather L. Shultz is a master's graduate in the Department of Kinesiology, Recreation, and Sport Studies at the University of Tennessee.

Angela J. Wozencroft is an associate professor in the Department of Kinesiology, Recreation, and Sport Studies at the University of Tennessee.

David F. Cihak is a professor of Theory and Practice in Teacher Education at the University of Tennessee.

Please send correspondence to Heather Shultz, hshultz@vols.utk.edu

Introduction

Recreation as a related service has been a part of special education since 1975 when Congress enacted Public Law-142, the Education of all Handicapped Children Act. Several iterations of this law have taken place over the past 30 years and have included notable modifications such as its name change in 1990 to the Individuals with Disabilities Education Act (IDEA) and the inclusion of nonacademic and extracurricular services for individuals with disabilities with the later reinforcing the need for recreation as a related service (Ashton-Shaeffer, Johnson, & Bullock, 2000; Mische Lawson & Coyle, 2010).

Although therapeutic recreation has a relatively lengthy history in the special education system, scholars in the field view it as underutilized (Mische Lawson & Coyle, 2010). Reasons for this include lack of knowledge by parents, teachers, and administrators, schools undervaluing recreation, limited dissemination of outcomes and benefits of therapeutic recreation in schools, and inadequate advocacy for the profession in school systems (Ashton-Shaeffer, Bullock, Shelton, & Stone, 1995; Hawkins, Cory, McGuire, & Allen, 2012; Mische Lawson & Coyle, 2010).

This paper contributes to the limited literature pertaining to therapeutic recreation in the school setting by reporting outcomes achieved by students with disabilities participating in a college service-learning project. More specifically, a research study that sought to determine the implications of therapeutic recreation activities on students with disabilities' social interactions in the school environment is examined.

Literature Review

Project Background

Project TRiPS was a 3-credit service-learning college course that combined in-class learning with hands on experience and reflection. As part of this course, the instructor placed students in Comprehensive Development Special Education Classrooms (CDCs) where students with disabilities were engaged in therapeutic recreation activities to improve their functional skills. Approximately 50 college students spent time in a university classroom learning about therapeutic recreation in the school system, assessments, planning therapeutic recreation activities, how to facilitate and implement such activities, and documentation. After approximately six weeks of preparatory course work, the college students visited 10 CDCs throughout local schools and conducted therapeutic recreation activities with students with disabilities. While the schools that participated in Project TRiPS did not employ a Certified Therapeutic Recreation Specialist (CTRS), the college students learned about the role of a CTRS in the school setting and how to implement therapeutic activities in the CDC in the college classroom from an instructor who was a CTRS. Project TRiPS not only gave future practitioners the experience of working in the school setting, but also provided students with disabilities access to therapeutic recreation, which aimed to improve their independent functioning skills.

Therapeutic Recreation in Schools

Recreation is a related service used by professionals in the education setting as a viable approach to helping children with disabilities engage in recreational activities that are therapeutic in nature. Additionally, educators have recognized recreational

activities as being an important part of the lives of students with disabilities (Bambara, Browder, & Koger, 2006; Browder & Cooper, 2001; Kleinert, Miracle, & Sheppard-Jones, 2007; Rynders & Schleien, 1993). Legislation such as IDEA 2004 includes recreation as a related service in an effort to teach all youth with disabilities how to use their leisure time productively (Mische Lawson & Coyle, 2010). Kleinert et al. (2007) noted that recreation-based extracurricular school activities such as lessons on dance, drama, sports, music, swimming, and pottery not only increase the likelihood of community integration and post school success, but also improve a person's quality of life (Heward, 2006).

Through recreation, students with disabilities can learn functional and academic skills in a variety of domains that include the cognitive, social, physical, behavioral, and affective areas (Mische Lawson & Coyle, 2010). Unlike recreation, IDEA 2004 mandated adaptive physical education; however, therapeutic recreation plays an integral role in encouraging students with disabilities to practice and transfer the motor skills acquired in their adaptive physical education class to recreation activities in the community (Etzel-Wise & Mears, 2004). Therapeutic recreation specialists are uniquely positioned to help address the social stigma and the quality of life of students with disabilities (Etzel-Wise & Mears). According to Bullock and Johnson (1998), "those who we fail to help while they are in school are those we see later and more frequently in health and human services" (p.121).

Social Learning Theory

Utilizing the tenets of social learning theory during classroom instruction is an effective strategy that professionals can employ when working with a student with a developmental disability in the education setting. This theory emphasizes how people learn from one another and gather new information by observing other people. Chavis (2012) states, "the use of observational learning, imitation, or modeling explains a wide variety of human behaviors using social learning theory and approach" (p. 55). According to Bandura (1969), the terms identification, imitation, and observational learning refer to how we socially learn from exposure to modeled stimuli. More specifically, he stated, "identification refers to a process in which a person patterns his thoughts, feelings, or actions after another person who serves as a model" (Bandura, p. 214).

In a study done by Shukla, Kennedy, and Cushing (1999), the researchers observed children with severe disabilities as they interacted with a partner. Shukla et al. explained how peer support strategies seem to be viable educational approaches because they facilitate the social participation of students with disabilities while focusing on improving functional skills for these students. Furthermore, the study focused on observing active engagement and social interaction of intermediate school students with disabilities, while being paired with a peer. The findings revealed that peer support strategies are a preferable alternative for assisting students with severe disabilities in general education classrooms when compared to support from an instructional aide. Shukla, Kennedy, and Cushing also recommended further investigation on the needs and additional behavioral support for children with disabilities to encourage generalized social participation.

Social Interaction

Social interaction is the reciprocal responses (positive or negative and motor/gestural or vocal/verbal) to various types of social initiations (Shores, 1987). Social interaction has been examined in youth with various disabilities including, but not limited to youth with autism (e.g., Bauminger, 2002; McConnell, 2002), students with learning disabilities (e.g., Kavale & Forness, 1996), and adolescents with intellectual disabilities (e.g., Carter & Hughes, 2005).

Competence in the social domain has been the focus of many studies related to individuals with disabilities. Deficits in this area have been linked to poor academic achievement (Parker & Asher, 1987), social isolation (e.g., Bauminger, 2002; Carter & Hughes, 2005), difficulty making friends (Knott, Dunlop, & Mackay, 2006), and challenges in comprehending social norms/rules (e.g., Kunce & Mesibov, 1998) to name a few.

Shafer, Egel, and Neef (1984) operationalized social interaction behaviors through their work with children with Autism. Categories of behaviors were motor gestural behaviors, vocal verbal behaviors, and response to one's environment then each category was further classified as positive or negative. Table 1 provides further descriptions on the social interaction behaviors.

Instructional Strategies

Within the education literature, various instructional strategies have been noted in relation to educating students with and without disabilities such as using cooperative groups, one-to-one, and small group structures. For example, scholars believe that cooperative learning groups are a promising instructional strategy for promoting interaction among students with and without developmental disabilities (Carter & Hughes, 2007; Demchak, 2005; Salisbury, Gallucci, Palombaro, & Peck, 1995). Cooperative learning groups involve dividing the class into small groups of students, establishing common learning goals, delineating student roles within each group, and establishing interdependent contingencies (Carter & Hughes, 2007). Moreover, students with disabilities receive social support behaviors from the person(s) doing the teaching in cooperative learning groups. Some examples of social support behaviors are greetings, providing information, introductions to new acquaintances, physical assistance, emotional support, and companionship (Shukla et al., 1999).

Literature in education also specifies that one-to-one teaching is a common instructional arrangement used with children with developmental disabilities (Aldemir & Gursel, 2014; Collins, Gast, Ault, & Wolery, 1991). Using a one-to-one teaching strategy allows the child to respond directly to the teacher and affords the instructor the opportunity to reinforce the child for correct responses (Aldemir & Gursel, 2014; Duker, Didden, & Sigafos, 2004). However, small groups can offer different learning opportunities such as the acquisition of instructive feedback and observational learning. Small groups also allow children to improve their social and behavioral skills in a natural classroom environment (Aldemir & Gursel, 2014; Collins, Gast, Ault, & Wolery, 1991; Colozzi, Ward, & Crotty, 2008). Both techniques, one-to-one teaching and small groups, are thought to be effective in teaching children, but may acquire different outcomes from a student. For those students who do not require one-to-one teaching to learn, a small group arrangement where they can observe their peers can be effective (Aldemir & Gursel, 2014; Collins, Gast, Ault, & Wolery, 1991; Ledford, Gast, Luscre, & Ayres, 2008).

Table 1
Social Interaction Behaviors

Motor-Gestural:	<p>All movements that cause a student with a disability's head, arms, or feet to come into direct contact with the body of the Project TRiPS staff or the student's peers; or that involve waving or extending arms directly toward another child; or that involve placing of hands directly on the materials of the activity being implemented.</p> <p>A. Positive: Touch with hands, hug, holding hands, gives high-fives, gives a thumbs up, waves, raises hand to speak, pointing at object/person, or nodding head up or down to respond to yes/no questions; all cooperative responses involved with sharing materials of the activity being implemented.</p> <p>B. Negative: Hit; pinch; kick; butt with head; nonplaying push or pull; grabbing materials of activity from Project TRiPS staff or peers; destroying construction of another peer. Any behavior displayed by a student with a disability where they appear to be very agitated, frustrated, upset, etc.</p>
Vocal-Verbal:	<p>All vocalizations emitted while a child is directly facing any Project TRiPS staff, peers, or teachers. Also, all nonverbal responses emitted by a child that clearly indicate that the student is directing it toward a Project TRiPS staff, peer, or teacher.</p> <p>A. Positive: When a student with a disability verbally or nonverbally responds to Project TRiPS staff, peers, or teachers during an activity being implemented. Positive vocal responses made by a student with a disability may be him/her saying, "hey you," "yeah," "uh oh," or the person's name they are trying to get attention from. Positive non-verbal responses may be when a student with a disability laughs or makes utterances (e.g., squealing) that clearly indicate that the student is directing it toward Project TRiPS staff, peers, or teachers. Also, when a student smiles during an activity, it is considered positive.</p> <p>B. Negative: Examples of negative vocal responses are saying negative words or phrases such as "I suck," "this game is no fun," or "ugh." Some examples of negative nonverbal responses may be when a student with a disability screams, shouts, whines, covers his/her face with hands, or makes utterances that clearly indicate rejecting, oppositional, or aggressive behavior. Any response displayed by a student with a disability where they appear to be very agitated, frustrated, upset, etc.</p>
Response to Environment:	<p>Any behavior made by the student with a disability that follows in close contiguity (3 seconds or less) to the response of Project TRiPS staff or peer and shows a direct relationship to the Project TRiPS staff's, peer's, or teacher's previous response; or participating in an interaction focusing on some type of activity with Project TRiPS staff, peers, and/or teachers. When a student with a disability is engaged in an activity being implemented with another Project TRiPS staff, peer, or teachers.</p>

Note. Adapted from "Training Mildly Handicapped Peers to Facilitate Changes in the Social Interaction Skills of Autistic Children" by M. Shafer, A. Egel, & N. Neef, 1984, *Journal of Applied Behavioral Analysis*, 17(4), 461-476.

Within the current research studied, through the utilization of social learning theory, the social interaction behaviors of students with disabilities in connection with therapeutic recreation activities implemented by college students was examined. The researchers were specifically interested in how students' social interactions varied depending on the goal of the therapeutic recreation activity.

Methods

Participants

Participants in the current study included 18 students with disabilities between the ages of 12 and 21 who were in CDCs from a nearby County. The students of the CDCs had one or multiple disabilities such as Down syndrome, autism spectrum disorder, developmental disabilities, attention deficit hyperactivity disorder (ADHD), and cerebral palsy. The participants were chosen randomly based on the public school they attended. Upon institutional IRB approval, there were two public schools chosen for this study from the 10 schools involved in Project TRiPS based on their similarities in age of participants. Each school had nine participants, and each school was randomly assigned to one of two goals: (1) cooperation and social interaction goal or (2) physical activity and social interaction goal. College students designed lesson plans that specifically targeted these goals. Each lesson plan included the name of the activity, the goal, three objectives, step-by-step procedures, equipment/materials needed, suggestions for adaptations, and instructions on how to evaluate achievement of the goal.

Intervention

The design of Project TRiPS accommodates one-to-one and small group instruction. The college students implemented therapeutic activities designed around the assigned goals in a small group; however, each student with a disability was paired one-to-one with a college student within that small group. Therefore, the student with a disability received the benefits of the one-to-one attention and the social and observational learning from the small group.

School #1 implemented lesson plans focusing on the cooperative plus social interaction (cooperative + SI) goal during each visit for the 7-week period. Such lesson plans involved a therapeutic activity that incorporated physical movement while encouraging students to work together and interact with one another verbally and non-verbally to complete a common task. Table 2 contains descriptions of each lesson plan used in school #1 that focused on the cooperative + SI goal.

School #2 implemented lesson plans focusing on the physical plus social interaction (physical + SI) goal during each visit for the 7-week period. These lesson plans included a therapeutic activity done either in a group or in pairs that required students to move their bodies and exert energy to complete the task. Communication from the students with disabilities involved either verbal or non-verbal responses that helped others complete the physical activity. Table 3 contains descriptions of each lesson plan implemented in school #2 that focused on the physical + SI goal.

Observation Method

This study applied a partial interval recording method to observe students with disabilities engaging in the lesson plans implemented that focused on the two goals. Each TRiPS session was comprised of two 30-minute activities. To ensure that the researcher or graduate assistants could observe a full 30-minute session, direct observation of the social interaction behaviors occurred during the first 30-minute activity only. The study utilized Alberto and Troutman's (2013) "round robin" data collection procedure for the observations in which the researcher rotated through one-minute observations of each child for the 30-minute duration. For example, for the

Table 2*Lesson Plan Descriptions for Cooperative plus Social Interaction Goal at School #1*

Lesson 1:	Title-Farm Animals Description- The object of this activity was to have each student make an animal noise they were assigned to and find other classmates who were making the same animal noise while being blindfolded.
Lesson 2:	Title- Busy Balloons and Busy Bees Description- The object of this activity was to have each student get in pairs and listen to the leader give instructions on what body parts they need to touch with their partner. For example, when the leader called out “elbow to elbow,” the students would connect each others elbows.
Lesson 3:	Title- Switch, Change, and Rotate Description- This activity had the students split into 2 groups and stand in a straight line. The object was to have the students listen for the leader to say “switch, change, or rotate” and then move to the correct place in line. For instance, if the leader said, “switch,” the student in the front of the line would switch places with the student in the back.
Lesson 4:	Title- Bowling Description- The students were put in pairs for this activity. The object was to have one student bowl, while the other student recorded their score. After one student was finished bowling, they would then set up their pins and switch with turns with their partner.
Lesson 5:	Title- Let’s go on a Trip Description- The leader first had the students pick a trip scenario from a bag (Camping, going to the beach, going skiing in the mountains, going hiking, going to the lake). The students were then instructed to walk around the classroom and find items that would be appropriate to bring on the trip they picked from the bag. After each student found a couple items, they then shared with the group what they would bring and why it is appropriate.
Lesson 6:	Title- Over, Under, Around, Through Description- For this activity, the students were split into groups of 3. Two of the students in the group held the ends of a jump rope, while the other student had to listen to the commands of the leader. For instance, if the leader said, “over,” the student would have to step over the jump rope.
Lesson 7:	Title- Relay Fun Description- For this activity, the students were split into 2 teams. The object of this activity was to have each team complete different relays together. There were 5 different relays: Egg relay, Balloon-Back relay, Paddle-Balloon relay, Cone Hat relay, and Leg Tie relay.

first 30 seconds of a minute, the researcher observed one student with a disability and recorded the social interaction behaviors each time they occurred. For the second 30 seconds of that minute, the researcher would record the tally of the observations made on a prepared behavior checklist. Once the minute was over, the researcher switched to the next student with a disability and followed the same observation and recording procedure. This continued for every student with a disability in the class until 30 minutes were completed. This study utilized the partial interval recording method for both the baseline and data collection.

Data Collection

Collection of all data occurred through direct observation of the social interaction behaviors of the students with disabilities. During data collection, the observers sat in close enough range (about 3 meters) to make accurate observations of the students with disabilities. The observers used a prepared behavior checklist to record observations of the students with disabilities each week. The behavior checklist used the five social interaction behaviors derived from Shafer, Egel, and Neff’s (1984) work: (1) motor gestural positive behavior, (2) motor gestural negative behavior, (3) vocal verbal

Table 3*Lesson Plan Descriptions for Physical plus Social Interaction Goal at School #2*

Lesson 1: Title- Snow Globes	Description- The leader instructed students how to make a snow globe step by step. Students were able to fill a jar with fake snow and glue objects on the lid.
Lesson 2: Title- Love Potion	Description- The leader instructed students how to make a “love potion” step by step. This required students to scoop pudding into their personal cup and place an assortment of candy into it.
Lesson 3: Title- Bead and Food Bracelets	Description- The leader instructed students how to make their own bracelets. The students first had to measure their wrist using string. Then they were able to choose from a variety of beads and cereal to put on their string to make a bracelet.
Lesson 4: Title- Paper Plate Leprechauns	Description- The leader instructed students how to make a craft leprechaun using paper plates and torn pieces of green tissue paper. The students were then able to personalize their plate by decorating it with plastic eyes, and red hair.
Lesson 5: Title- Easter Bunnies	Description- The leader instructed students how to make a craft Easter bunny using pom-poms. The students were able to personalize their own bunny by decorating it with other crafts.
Lesson 6: Title- Let’s Go Fishing	Description- Students were first instructed to make fish out of construction paper and to decorate it with markers. The leader placed magnets on the back of the students’ fishes once they were done decorating and then scattered them in one area on the floor. The students were then instructed to circle around the fish and use their “fishing poles,” which also had magnets on them, to try and catch as many fish as they could in 3 minutes.
Lesson 7: Title- Balloon Balance Relay	Description- For this activity, the students were split into pairs and given a balloon. A starting line and ending line were made on the floor for the relay. The object of this activity was to have each student listen to the leader’s command to know what to do. For instance, when the leader would say, “elbow,” each pair would have to balance the balloon between their elbows and walk to the finish line.

positive behavior, (4) vocal verbal negative behavior, and (5) response to environment behavior. Within the first 30 seconds of observation on a particular student, whenever the observers noticed the students with disabilities exhibiting one of the five social interaction behaviors, the observer placed a tally mark next to that behavior. Table 1 provides further descriptions on the social interaction behaviors.

The researcher established a baseline for each student before the introduction of the therapeutic recreation activities. For the baseline data collection, the researcher observed the teachers in the CDCs teaching curriculum to their students for one 30-minute session. The researcher used the behavior checklist to record observations of the students with disabilities. After collecting the baseline data, the same data collection procedure was followed when the therapeutic activities were implemented.

Training

The researcher and two trained graduate assistants conducted data collection. Two graduate assistants were trained on the data collection method and were randomly assigned to 3 weeks of the 7-week visitation period. The researcher collected data on the remaining 4 weeks. Training included a detailed explanation of the five social interaction behaviors and a demonstration of how to utilize the behavior checklist

during data collection. Additionally, graduate assistants observed the researcher piloting the utilization of the behavior checklist to assess students with disabilities in three different 30-minute therapeutic recreation sessions then practiced collecting data using the system on students not involved in the study. To ensure competency, the researcher monitored their performance during their first day of observation. All graduate assistants accurately recorded data 100% of the time.

The researcher also trained the college students who were designing and implementing the therapeutic activities and working with a student with disabilities at two formal class meetings. The training consisted of a detailed explanation of what each of the school's lesson plans should include, examples of activities they could implement, resources where they could obtain ideas on activities to use, and the specific goals for the students with disabilities.

Data Analysis

The researcher entered data into the Statistical Package for the Social Sciences (SPSS) Version 22. A descriptive statistics test was used to obtain the mean scores of the social interaction behaviors for each week. Due to the small sample size, a Mann-Whitney U test was used to examine the between school differences. By running this test, median scores were ranked across the two strategy groups. A Wilcoxon Matched-Pair signed-rank test was used to examine the within school differences. This is a non-parametric alternative to the repeated measures t-test, which converted the scores to ranks to compare them from the baseline and at week 7 (Pallant, 2007).

Results

Between School Comparison

After analyzing data between the two schools, there were four significant differences as shown in Table 4. Significant differences were not found for weeks one, four, six, and seven and are therefore not reported. During week two, school #1 where the therapeutic activities focused on the cooperative + SI goal did significantly better ($M = 6.14$, $SD = 2.48$) regarding the "response to environment" behavior compared to school #2 where the therapeutic activities focused on the physical + SI goal ($M = 3.50$, $SD = 1.31$), $U = 42.5$, $p = 0.017$. During week three, school #2 (physical + SI goal) did significantly better ($M = 3.38$, $SD = 1.57$) regarding the "response to environment" behavior compared to school #1 (cooperative + SI goal) ($M = 1.57$, $SD = 1.13$), $U = 6.5$, $p = 0.017$. During week five, school #1 did significantly better (cooperative + SI goal) ($M = 3.25$, $SD = 1.39$) regarding the "motor/gestural positive" behavior compared to school #2 (physical + SI goal) ($M = 1.56$, $SD = 1.59$), $U = 57.0$, $p = 0.007$. However, school #2 (physical + SI goal) did significantly better ($M = 5.67$, $SD = 3.00$) regarding the "response to environment" behavior during the same week when compared to school #1 (cooperative + SI goal) ($M = 2.75$, $SD = 0.46$), $U = 8.0$, $p = 0.01$).

Within School Comparison

After analyzing data within school #1 (cooperative + SI goal), there was no significant difference in the five social interaction behaviors. However, there was significant difference in two of the five behaviors within school #2 (physical + SI goal). School #2 (physical + SI goal) performed significantly better regarding the "motor gestural positive" behavior from week 1 to week 7 ($W = 21.0$, $p = 0.027$) and the "vocal verbal positive" behavior from week 1 to week 7 ($W = 21.0$, $p = 0.027$).

Table 4

Significant Difference in Social Interaction Behaviors Between and Within School Comparison

	Test	Static Measure	<i>P</i>	<i>SD</i>	<i>M</i>
<i>Between school comparison</i>	Independent-Samples Mann-Whitney U Test	<i>U</i> = 42.5	.017*	2.48	6.14
	Independent-Samples Mann-Whitney U Test	<i>U</i> = 6.5	.017*	1.57	3.38
	Independent-Samples Mann-Whitney U Test	<i>U</i> = 57.0	.007*	1.39	3.25
	Independent-Samples Mann-Whitney U Test	<i>U</i> = 8.0	.010*	3.00	5.67
<i>Within school comparison</i>	Related-Samples Wilcoxon Signed Rank Test	<i>W</i> = 21.0	.027*		
	Related-Samples Wilcoxon Signed Rank Test	<i>W</i> = 21.0	.027*		

Note. * = $p < .05$

Mean Scores Comparison

After running descriptive statistics, all weekly mean scores comparisons from school #1 (cooperative + SI goal) and school #2 (physical + SI goal) were examined to determine which activity produced the highest mean score for three of the five behaviors (see Table 5 for details). The “motor gestural positive” behavior, “vocal verbal positive” behavior, and “response to environment” behaviors were examined in both schools.

For “motor gestural positive” behavior, school #2 (physical + SI goal) had the highest mean score during week seven ($M = 4.38$). Also, for “vocal verbal positive” behavior, school #2 (physical + SI goal) had the highest mean score during week seven ($M = 5.25$). For “response to environment” behavior, school #1 (cooperative + SI goal) had the highest mean score during week two ($M = 6.14$). This was also the highest mean score among all five behaviors in both schools when all weekly comparisons were made.

Table 5

Mean Scores from Cooperative plus Social Interaction Strategy in School #1 and Physical Plus Social Interaction Strategy in School #2

Strategies	Physical Plus Social Interaction at School #1							Cooperative Plus Social Interaction at School #2						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Motor/Gestural Positive	1.50	1.57	1.14	2.44	3.25*	3.56	3.11	0.67	1.88	0.5	2.89	1.56	0	4.38
Motor/Gestural Negative	0.25	.00	.00	0.33	.00	.00	0.33	0.11	0.13	0.25	.00	0.22	0	0.38
Vocal/Verbal Positive	3.75	5.00	3.29	2.89	2.63	3.67	3.22	2.78	3.5	4.88	4.33	3.00	0	5.25
Vocal/Verbal Negative	.00	.00	.29	.11	.00	.00	.22	.00	0.25	.00	.00	0.33	0	.00
Response to Environment	5.00	6.14*	1.57	3.22	2.75	2.78	2.00	1.67	3.5	3.38*	2.89	5.67*	0	2.63

Note. * = $p < .05$

Discussion

This study contributes to the literature on therapeutic recreation in the school setting and to the work pertaining to the social learning theory by observing the five social interaction behaviors in students with disabilities identified by Shafer, Egel, and Neef (1984). This study begins a dialogue based on observations made throughout the study on areas for further exploration related to activity design, instructional components, and the importance of designing therapeutic recreation activities that align with targeted goals.

Between School Comparison

While the goals for each school remained consistent throughout the study, the therapeutic activities designed to achieve these goals varied in terms of the procedures and actions necessary to participate. Below is a discussion of the activity components for the weeks with significant findings. Table 6 provides a summary for all six weeks.

After looking more in depth as to why there was a significant difference in the "response to environment" behavior during week two in school #1 (cooperative + SI goal) and during week three and five in school #2 (physical + SI goal), there were some similarities in the activities designed that may have resulted in the increased frequency of social interaction behaviors of the students with disabilities. Although one activity required the students with disabilities to get out of their desks and interact with others, the other two activities required them to stay seated and work independently on their task. While the actions required to participate in these activities varied, there was still a significant difference for all three weeks. It is plausible that activities that involved more guided instruction throughout the activity may have helped increase the frequency of the students with disabilities social interaction behaviors; however, additional research is needed in this area. More specifically, the college students who implemented the lessons during these weeks all presented clear and concise instructions throughout

Table 6*Weekly Summary of Therapeutic Activity Components*

	School #1 Cooperative + SI	School #2 Physical + SI
Week 1	<ul style="list-style-type: none"> • Get out of desks • Communicate with peers • Utilize gross motor skills • Instructions given throughout activity • Cooperate with partner 	<ul style="list-style-type: none"> • Stay seated in desks • Independently work on task • Utilize fine motor skills • Instructions given at beginning of activity
Week 2	<ul style="list-style-type: none"> • Get out of desks • Communicate with peers • Utilize gross motor skills • Instructions given throughout activity • Cooperate with partner 	<ul style="list-style-type: none"> • Stay seated in desks • Independently work on task • Utilize fine motor skills • Instructions given at beginning of activity
Week 3	<ul style="list-style-type: none"> • Get out of desks • Communicate with peers • Utilize gross motor skills • Instructions given throughout activity • Cooperate with partner 	<ul style="list-style-type: none"> • Stay seated in desks • Independently work on task • Utilize fine motor skills • Instructions given at beginning of activity
Week 4	<ul style="list-style-type: none"> • Get out of desks • Communicate with peers • Utilize gross motor skills • Instructions given at beginning of activity • Cooperate with partner 	<ul style="list-style-type: none"> • Stay seated in desks • Independently work on task • Utilize fine motor skills • Instructions given at beginning of activity
Week 5	<ul style="list-style-type: none"> • Get out of desks • Communicate with peers • No utilization of gross/fine motor skills • Instructions given at beginning of activity • Cooperate with partner 	<ul style="list-style-type: none"> • Stay seated in desks • Independently work on task • Utilize fine motor skills • Instructions given at beginning of activity
Week 6	<ul style="list-style-type: none"> • Get out of desks • Communicate with peers • Utilize gross motor skills • Instructions given throughout activity • Cooperate with partner 	<ul style="list-style-type: none"> • Stay seated/get out of desks • Communicate with peers • Utilize fine motor skills • Instructions given throughout activity • Interacted with partner

the activity so that the students with disabilities were getting frequent guidance from the activity leader. By doing this, they helped the students with disabilities observe the activity leader's actions, listen to instructions multiple times, and model what the activity leader was doing. Bandura (1969) noted that one exhibits observational learning after modeled stimuli and coding it into images or words for memory representation to retrieve and reproduce a response. This demonstrates how the students socially learned from others with guidance and direction from the activity leader. They then were able to communicate to their Project TRiPS staff verbally or nonverbally if they did not understand something.

With significant differences in the “response to environment” behavior, there was also an increase in the frequency of students with disabilities displaying behaviors such as: (1) being engaged in an activity with another Project TRiPS staff, peer, or teachers; (2) responding to Project TRiPS staff or peers that shows a direct relationship to the Project TRiPS staff’s, peer’s, or teacher’s previous response; (3) participating in an interaction focusing on some type of activity with Project TRiPS staff, peers, and/or teachers; and (4) any behavior made by the student with a disability that follows in close contiguity (3 seconds). The researcher observed how the students with disabilities were modeling each other continuously by their “response to environment” behaviors exhibited. All of these behaviors demonstrate how students with disabilities improved on communicating with Project TRiPS staff and their peers, participated in activities, and responded to instructions. Students with disabilities were continuously learning from the Project TRiPS staff’s modeled patterns and the students mentally rehearsed their actions to be able to remember what he/she was doing to accomplish the task. This reflects Bandura’s (1971) work, as the students were able to mimic what they observed from others demonstrating their learning.

Within School Comparison

When looking more closely into school #2 (physical + SI goal) and why there was a significant difference in “motor gestural positive” behavior and “vocal verbal positive” behavior from week 1 to week 7, several reasons are plausible. From the first activity implemented in week 1 to the last activity implemented in week 7 there was an evolution of the social interaction behaviors seen in the students with disabilities. The activity implemented in week 1 had the students make a snow globe and required them to: (1) stay seated at their desk, (2) independently work on their task, (3) work on fine motor skills, and (4) listen to the leader only at the beginning of the activity for instructions. The activity implemented in week 7 had the students with disabilities complete a balloon balance relay which required them to: (1) get out of their desks and move around, (2) communicate with their peers and staff, (3) work on gross motor skills, (4) listen to the leader for directions throughout the activity, and (5) interact with others to complete the activity. Modifying the activity design may have played a role in the enhanced social interaction behaviors, as it required the students with disabilities to ask more questions, converse with their staff and/or peers to complete the task, and cheer on their partners/teammates during the activity.

Additionally, over the course of the seven-week study, there was a noticeable transformation in the types of activities and how they were implemented in school #2 (physical + SI goal) which may have helped improve the students with disabilities’ “motor gestural positive” behaviors and “vocal verbal positive” behaviors. One of the noticeable changes in the activities from week 1 to week 7 was how students with disabilities were encouraged to work independently in the early weeks of the study and then later arranged to work together on the activity towards the end of the study. Through these changes in activity design, the college students were able to help students with disabilities become more engaged in the activities. In turn, students with disabilities were modeling more of what the Project TRiPS staff and their peers were doing to complete the activities. The work of both Chavis (2012) and Bandura (1971) is reflected here as the students were able to observe others and model their behaviors as well as observe the activity leader throughout the activity to learn and retain certain

demonstrated behaviors. Additional exploration focusing specifically on the activity design and its influence on social interaction behaviors is needed.

Through the behavior checklist used during data collect, it was evident that there was also an increase in the frequency of students with disabilities display of behaviors such as: (1) touching with hands, (2) hugs, (3) holding hands, (4) giving high fives, (5) giving a thumbs up, (6) waves, (7) raising hand to speak, (8) pointing at object/person, (9) nodding head up or down to respond to yes/no questions, and (10) cooperative responses involved with sharing materials of the activity being implemented (Shafer, Egel, & Neef, 1984). Also, there was an increase in the “vocal verbal positive” displayed by students with disabilities such as (1) verbal or nonverbal responses to Project TRiPS staff, peers, or teachers during an activity being implemented; (2) saying, “Hey you,” “Yeah,” “Uh oh,” or the person’s name they are trying to get attention from; (3) laughing or making utterances (e.g., squealing) that clearly indicate that the student is directing it towards Project TRiPS staff, peers, or teachers; and (4) smiling (Shafer, Egel, & Neef, 1984).

While not examined specifically in the current study, the growth in college students’ competencies in designing therapeutic activities as a result of the service-learning course may have played a role in the changes noted; however, this needs to be examined further in future research to substantiate this claim.

Mean Scores Comparison

When looking specifically at the activities implemented and their influence on social interaction behaviors, the three highest mean scores for “motor gestural positive” behavior, “vocal verbal positive” behavior, and “response to environment” behavior were found when activities with similar components were implemented.

More specifically, the activity implemented in week 7 at school #2 (physical + SI goal) that had the highest mean score for both “motor gestural positive” behavior and “vocal verbal positive” behavior was named “Balloon Balance Relay.” This activity involved students splitting into two teams and pairing off with Project TRiPS staff. The object of this activity was to have each student with a disability go through two obstacles, once using a hula-hoop and a second time bouncing a balloon with their hand without having it touch the ground. As one student goes through the obstacle, the other students are cheering on their teammate. This activity required students to (1) get out of their desks and move around, (2) communicate with their partner, (3) work on gross motor skills, (4) listen to the leader for directions throughout the activity, and (5) interact with their partner to complete the activity. Additionally, the activity implemented in week two at school #1 (cooperative + SI goal) that had the highest mean score for “response to environment” behavior was named “Busy Balloons and Busy Bees.” This activity involved students with disabilities pairing up with one of their peers. The object of this activity was to have each student listen to the activity leader for directions on what body parts the students needed to touch with their peer. For example, when the leader yells “elbow to elbow” or “knee to knee,” the students connected to each other’s elbows or knees. The students were required to listen to the activity leader throughout the activity to know what they need to do next and to know when to switch partners and pair with another peer. Once the students were familiar with what body parts to connect to with their peers, the students with disabilities had to balance a balloon between the two body parts the activity leader called out. This

activity required the students with disabilities to (1) get out of their desks and move around, (2) communicate with their peers and staff, (3) work on gross motor skills, (4) listen to the leader for directions throughout the activity, and (5) cooperate with others to complete the activity.

These activities exhibited three similar things when implemented. Each had (1) the students with disabilities get out of their desks and move around, (2) the students with disabilities communicate with their peers and staff, and (3) the students with disabilities were required to listen to the leader for directions throughout the activity. These results suggest that, whether an activity is physical in nature or designed to foster cooperation, the above mentioned intervention components might contribute to increasing students with disabilities' social interaction behavior.

Implications

This paper seeks to contribute to the limited literature available on therapeutic recreation in schools and hopes to shed light on some practical implications gleaned from the current study for current and future professionals. One practical implication pertains to how the instructional components used during the activities might have positively influenced social interaction behaviors of students with disabilities. The instructional components observed during the study included clear and concise instructions, guided instruction to students with disabilities throughout the activity, and instructions that were personable or meaningful to everyone.

Another practical implication draws attention to the importance of writing a lesson plan that accurately reflects students' Individualized Education Plan (IEP) goals. It is imperative that CTRSs working in the school setting address IEP goals in their practice and it is just as important to train future practitioners on how to write a lesson plan that precisely targets IEP goals. Although efforts were made by the researchers to specifically train the college students on writing lesson plans with specific goals provided, during the course of the study, it was apparent that several students created lesson plans that could have been better aligned with the goal, which is a common error college students make when learning this skill. To remedy this, it may be beneficial to ensure lessons explicitly address goals when implementing therapeutic recreation activities. In the future, having a list of evidenced-based activities available for the students to choose from may help address this concern. Another solution would be to create protocols and/or practice guidelines for college students to use when implementing therapeutic recreation activities in a school setting. Practitioners could also benefit from such practice guidelines which also support the American Therapeutic Recreation Association's stance and legislative mandates (IDEA and No Child Left Behind) for the use of evidence-based practice (Mische Lawson & Coyle, 2010). Completed lesson plans with a strong design that have been proven to benefit students with disabilities in the school setting can be used as a guideline by current college students in Project TRiPS and by CTRSs already working in schools.

Limitations and Future Research

Although every effort was made to be thorough, there were several limitations to the current study. First, this study was limited by the scheduled number of times the Project TRiPS staff attended each public school each week. Since the school visits were a

requirement of the service-learning project, visits to each school were limited to once a week for both schools. Consequently, this contributed to the small sample, which limits generalizability. Second, the therapeutic recreation activities students with disabilities were involved in were created and implemented by college students who were enrolled in a college service-learning course. The researcher had to rely on the college students to develop and implement activities effectively that were appropriate for the assigned goals: (1) physical plus social interaction and (2) cooperative plus social interaction. While most lesson plans related directly to the assigned goals, a few lessons would have benefited from a more explicit alignment with the assigned goal.

In addition to the areas noted for future exploration in the discussion, future research could benefit from developing and testing specific therapeutic recreation activities for their therapeutic value for students with disabilities in the school setting and creating evidence-based recreation protocols. Similar to the Dementia Care Practice Guidelines created by Buettner and Kolanowski (2003), students and practitioners working in the school systems could benefit from “a consistent framework to follow for assessment, prescription, treatment, and outcome measures” (Buettner & Kolanowski, 2003, p. 19).

Future research related to replicating the current study should consider a larger sample size than the one used in this study. Having more participants, more weeks to observe, and multiple baselines could produce significant results in other areas not found in this study. This would also increase the amount of data to examine for the within and between school differences. Furthermore, this would afford a better comparison between the baseline and the two strategies. Future attempts to replicate this study may also benefit from closer oversight of the therapeutic recreation activities designed to ensure they accurately target the assigned goal in the most effective way possible. Also, knowing and including the activity components that produced significant results may prove beneficial to future research in this area.

Conclusion

Although recreation as a related service is under-utilized in schools, this research study demonstrates that therapeutic recreation can play an integral role in addressing social interaction behaviors in students with disabilities in the education setting. While challenges exist in properly training future practitioners in all settings in which therapeutic recreation specialists can work, Hawkins, Cory, McGuire, and Allen (2012) note that, “undergraduate and graduate TR programs also have a responsibility to better prepare students for working with children with disabilities and working in education settings” (p. 137). Project TRiPS is one of a few service-learning programs in the United States that seeks to address this need. It is critical and imperative to train future practitioners on how to design activities that align with desired goals and carefully consider activity components in order to derive positive outcomes from any population with whom they might work. Having these skills as a practitioner is important as they help clients/students achieve their goals. The better preparation future practitioners receive through their education and training, the more effective they are in achieving the desired outcomes through recreational therapy. Furthermore, the development of practice guidelines geared toward CTRSs’ best practices or standards in schools could further strengthen our work in the education setting.

References

- Aldemir, O., & Gursel, O. (2014). The effectiveness of the constant time delay procedure in teaching pre-school academic skills to children with developmental disabilities in a small group teaching arrangement. *Education Sciences: Theory & Practice, 14*(2), 733–740.
- Alberto, P., & Troutman, A. C. (2013). *Applied behavior analysis for teachers* (9th ed.). Upper Saddle River, NJ: Prentice Hall.
- Ashton-Shaeffer, C., Bullock, C., Shelton, M., & Stone, C. (1995). *Proceedings from the first summit of therapeutic recreation as a related service*. Chapel Hill, NC: Center for Recreation and Disability Studies, Curriculum in Leisure Studies and Recreation Administration, University of North Carolina at Chapel Hill.
- Ashton-Shaeffer, C., Johnson, D., & Bullock, C. (2000). A survey of the current practice of recreation as a related service. *Therapeutic Recreation Journal, 34*, 323–334.
- Bambara, L., Browder, D., & Kroger, F. (2006). Home and community. In M. E. Snell & F. Brown (Eds.), *Instruction of students with severe disabilities* (6th ed., pp. 526–568). Upper Saddle River, NJ: Merrill Prentice Hall.
- Bandura, A. (1969). Social-learning theory of identificatory processes. In D. A. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 213–262). Retrieved from <https://web.stanford.edu/dept/psychology/bandura/pajares/Bandura1969HSTR.pdf>
- Bandura, A. (1971). Social Learning Theory. 1-46. Retrieved from http://www.esludwig.com/uploads/2/6/1/0/26105457/bandura_sociallearningtheory.pdf
- Bauminger, N. (2002). The facilitation of social-emotional understanding and social interaction in high-functioning children with autism: Intervention outcomes. *Journal of Autism and Developmental Disorders, 32*(4), 283–298.
- Browder, D., & Cooper, K. (2001). Community and leisure skills. In D. Browder (Ed.), *Curriculum and assessment for students with moderate and severe disabilities* (pp. 244–278). New York, NY: Guilford Press.
- Buettner, L., & Kolanowski, A. (2003). Practice guidelines for recreation therapy in the care of people with dementia. *Geriatric Nursing, 24*(1), 18–25.
- Bullock, D. E., & Johnson, C. C. (1998). Recreation therapy in special education. In F. Brasile, T. Skalko, & j. burlingame (Eds.), *Perspectives in recreation therapy: Issues of a dynamic profession* (pp. 107–124). Ravensdale, WA: Idyll Arbor.
- Carter, E. W., & Hughes, C. (2005). Increasing social interaction among adolescents with intellectual disabilities and their general education peers: Effective interventions. *Research and Practice for Persons with Severe Disabilities, 30*(4), 179–193.
- Carter, E., & Hughes, C. (2007). Social interaction interventions: Promoting socially supportive environments and teaching new skills. In S. L. Odom & R. H. Horner (Eds.), *Handbook of developmental disabilities* (pp. 310–329). New York, NY: Guilford Press.
- Chavis, A. (2012). Social learning theory and behavioral therapy: Considering human behaviors within the social and cultural context of individuals and families. *Journal of Human Behavior in the Social Environment, 22*(1), 54–64.
- Collins, B. C., Gast, D. L., Ault, M. J., & Wolery, M. (1991). Small group instruction: Guidelines for teachers of students with moderate to severe handicaps. *Education and Training in Mental Retardation, 21*, 18–32.

- Colozzi, G. A., Ward, L. W., & Crotty, K. E. (2008). Comparison of simultaneous prompting procedure in 1:1 and small group instruction to teach play skills to preschool students with pervasive developmental disorders and developmental disabilities. *Education and Training in Developmental Disabilities, 2*, 226–248.
- Demchak, M. A. (2005). Teaching students with severe disabilities in inclusive settings. In M. L. Welmeyer & M. Agran (Eds.), *Mental retardation and intellectual disabilities: Teaching students using innovative and research-based strategies* (p. 57–77). Washington, D.C.: American Association on Mental Retardation.
- Duker, P., Didden, R., & Sigafoos, J. (2004). *One-to-one training: Instructional procedures for learners with developmental disabilities*. Austin, TX: PRO-ED, Inc.
- Etzel-Wise, D., & Mears, B. (2004). Adapted physical education and therapeutic recreation in schools. *Intervention in School and Clinic, 39*(4), 223–232.
- Hawkins, B. L., Cory, L. A., McGuire, F. A., & Allen, L. R. (2012). Therapeutic recreation in education: Considerations for therapeutic recreation practitioners, school systems, and policy makers. *Journal of Disability Policy Studies, 23*(3), 131–139.
- Heward, W. (2006). *Exceptional children: An introduction to special education* (8th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.
- Kavale, K. A., & Forness, S. R. (1996). Social skill deficits and learning disabilities: A meta-analysis. *Journal of Learning Disabilities, 29*(3), 226–237.
- Kleinert, H. L., Miracle, S. A., & Sheppard-Jones, K. (2007). Including students with moderate and severe disabilities in extracurricular and community recreation activities. *Teaching Exceptional Children, 39*(6), 33–38.
- Knott, F., Dunlop, A. W., & Mackay, T. (2006). Living with ASD: How do children and their parents assess their difficulties with social interaction and understanding? *Autism, 10*(6), 609–617.
- Kunce, L. J., & Mesibov, G. B. (1998). Educational approaches to high-functioning autism and Asperger syndrome. In E. Schopler, G. B. Mesibov, & L. J. Kunce (Eds.), *Asperger syndrome or high-functioning autism* (pp. 227–261). New York, NY: Plenum Press.
- Ledford, J. R., Gast, D. L., Luscre, D., & Ayres, K. M. (2008). Observational and incidental learning by children with autism during small groups instruction. *Journal of Autism and Developmental Disorders, 38*, 86–103.
- McConnell, S. R. (2002). Interventions to facilitate social interaction for young children with autism: Review of available research and recommendations for educational intervention and future research. *Journal of Autism and Developmental Disorders, 32*(5), 351–372.
- Mische Lawson, L., & Coyle, C. (2010). *Therapeutic recreation in special education: From legislation to practice*. Alexandria, VA: American Therapeutic Recreation Association.
- Pallant, J. (2007). *SPSS survival manual a step by step guide to data analysis using SPSS version 15* (3rd ed.). Maidenhead: Open University Press/McGraw-Hill.
- Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin, 102*, 357–389.
- Rynders, J., & Schleien, S. (1993). Improving integration for children with and without severe disabilities through cooperatively structured recreation activities: A synthesis of research. *Journal of Special Education, 26*, 386–408.

- Salisbury, C. L., Gallucci, C., Palombaro, M. M., & Peck, C. A. (1995). Strategies that promote social relations among students with and without disabilities in inclusive schools. *Exceptional Children, 62*, 125–137.
- Shafer, M., Egel, A., & Neef, N. (1984). Training mildly handicapped peers to facilitate changes in the social interaction skills of autistic children. *Journal of Applied Behavior Analysis, 17*(4), 461–476.
- Shores, R. L. (1987). Overview of research on social interaction: A historical and personal perspective. *Behavioral Disorders, 12*, 233–241.
- Shukla, S., Kennedy, C. H., & Cushing, L. S. (1999). Intermediate school students with severe disabilities: Supporting their social participation in general education classrooms. *Journal of Positive Behavior Intervention, 1*(3), 130–140.