

Disc Golf Play: Using Recreation to Improve Disruptive Classroom Behaviors

Michael Lee Powell and Rebecca A. Newgent

University of Arkansas

### Abstract

This study examined the use of disc golf as a creative, recreational play intervention for improving classroom behaviors in disruptive children. Twenty-two elementary students were randomly selected for either a treatment or control group and rated at pre- and post- by their teachers on the use of nine positive classroom behaviors (e.g., sharing, raising hand, and compliance). Results of a two-way ANOVA with repeated measures and one between-subjects factor revealed a significant difference ( $p < .0001$ ) between both groups over time. Implications are discussed.

## Disc Golf Play: Using Recreation to Improve Disruptive Classroom Behaviors

The use of therapeutic play is imperative when working with young, disruptive children for multiple reasons, but maybe most saliently for the opportunity to release pent up energy in a safe, comforting, and judgment-free environment. Landreth (2002) stated:

Below age 10 to 11, most children experience difficulty sitting still for sustained periods of time. A young child has to make a conscious effort to sit still, and thus creative energy is consumed in focusing on a nonproductive activity. Play therapy provides for children's need to be physically active. In play, children discharge energy, prepare for life's duties, achieve difficult goals, and relieve frustrations. They get physical contact, discharge their needs to compete, act aggressively in socially acceptable ways, and learn to get along with others. (p. 11)

It makes sense, then, that counselors would choose to incorporate recreational activities in play therapy with disruptive children to facilitate such physical and psychological gains. Yet, leisure sports are not often discussed as beneficial play therapy techniques, although they promise the same therapeutic benefits that Landreth (2002) suggested disruptive children need (Wilson, Arnold, Rowland, & Burnham, 1997). One activity that this study investigated for its usefulness as a creative, recreational play intervention is disc golf.

### Recreation and Counseling

Leisure is generally an opportunity for individuals to spend time indulging in rest or relaxation in order to feel revived and reenergized after a week of work (Wilson et al,

1997). Therapeutically, engaging in recreation can assist with so much more. For several decades researchers and clinicians have documented the inherent benefits of recreation/leisure activities as tools to improve client mental health. Several reviews exist that detail this use (Barcus & Bergeson, 1972; Ewert, 1987; Shank, Kinney, & Coyle, 1993).

According to the American Therapeutic Recreation Association [ATRA] (2006), recreational therapy is comprised of various activities used to enhance client functioning. When used appropriately these activities can improve physical health, strengthen emotional regulation, and decrease negative social behavior. In fact, considerable amounts of data exist to document these improvements with numerous populations. Some examples include the use of aerobic exercise, which was found to be highly effective in elevating depression (Pelham, Campagna, & Ritvo, 1993); weight lifting, which was successful for improving client attitude and sleep (Auchus & Kaslow, 1994); horseback riding, which aided in the enhancement of self-esteem and self-efficacy (Bizub, Joy, & Davidson, 2003); and intense outdoor adventures (i.e. hiking, rock climbing, and canoeing), which were successful for alleviating anxiety, building a positive self-concept, and mood elevation (Kelley, Coursey, & Selby, 1997). For purposes of this study, investigations that focus on the application and empirical validation of recreation activities with children were of greater comparable interest. Most specifically, how recreation can be incorporated into school-based programs to improve childhood misbehavior and learning was of interest.

## Recreation and the Classroom

The use of more experiential activities for learning enhancement has been investigated more often in recent years due to the increase in disruptive behaviors exhibited by students in the classroom (Crozier & Tincani, 2005; Gottlieb & Polirstok, 2005; Lambert, Cartledge, & Heward, 2006; Umbreit, Lane, & Dejud, 2004). These behaviors include rule noncompliance, peer quarreling, poor manners, impulsive conduct, and overall defiance to authority. According to Lambert et al. (2006), this increase has been rather detrimental to the learning environment. Educators are expending considerable amounts of time managing misbehavior, which leads to teacher dissatisfaction, retention issues, and poor academic performances.

Research shows that applying knowledge in a more “hands-on” approach is promising for decreasing disruptive behaviors and improving learning (Kottman, 2003; Mordock, 2001). Experiential activities are stimulating, enjoyable, and potentially rewarding for disruptive students. Recreational sports, in fact, are greatly recommended for the problematic child (Ewert, 1987). This study intends to assess how effective one recreational sport, disc golf, can be at improving classroom behavior.

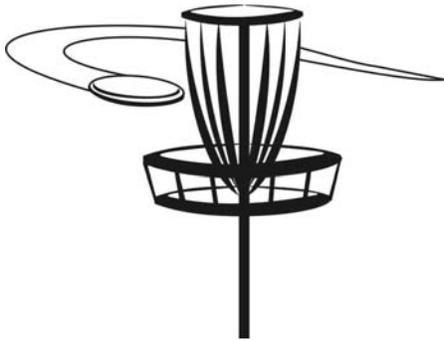
## Disc Golf

Similar to traditional golf, disc golf is a recreational sport in which participants compete on an 18-hole course and endeavor to complete an entire round with the fewest attempts possible. Instead of hitting a ball, however, players throw specially made Frisbees (discs) from each tee box to a basket some hundred feet away (see Figure 1). Each disc has different weights and aerodynamics, which provide enthusiasts with the options of choosing from a number of different drivers, mid-distance discs, and

putters that aid them in completing a course. Once a round is complete, the player with the lowest score, or in other words the person who was able to get their discs into all 18 baskets in the least amount of throws, is the winner.

Figure 1

*Visual Image of a Disc Thrown to a Basket*



*Note.* Permission to use image granted by Will Grant, President of the Virginia Disc Golf Association (VDGA).

Although fairly new, disc golf is gaining immense popularity internationally (Professional Disc Golf Association [PDGA], 2006). The PDGA reports having over 16,000 members, but of course the number of participants that actually enjoy the sport is unknown. It is clear, however, that disc golf has had a great following since its creation in 1975. Over 1600 courses exist throughout all 50 of the United States, and nearly 300 courses worldwide (PDGA, 2005).

The PDGA (2006) attributes this interest to the inherent benefits disc golf has over traditional golf. First, since most disc golf courses are free to play and found in city/rural parks, the game is economical and accessible. A typical round of traditional

golf can be costly, especially with expenses such as clubs, balls, a bag, and greens fees. In disc golf all a player needs is one disc. Beginners can expect to pay around \$10 for a basic disc. Second, a typical round in traditional golf can last over four-hours. In disc golf a player can expect to spend about one-hour. Thus, obtaining a tee-time and scheduling a round is not a hassle. Third, weather and playing conditions are of concern in traditional golf due to the metal clubs being a potential electrical conductor and vulnerable to damage. In disc golf these are never an issue, because the discs are made from high durable plastics, which can sustain considerable damage and are usable in the wind and rain. Fourth, disc golf is a simple sport to learn, which can be easily enjoyed by anyone from any fitness or economic level. Traditional golf cannot. Last, players of any age can participate in disc golf. This includes school-age children and individuals with disabilities (Neulicht, 2004; PDGA, 2006). In fact, the PDGA promotes the sport as a fun, recreational activity that can improve one's general health and quality of life while improving body conditioning via aerobic exercise and increasing concentration skills. The use of appropriate social and problem solving skills during play are also required, which for disruptive children are essential life tasks vital for positive development (Mordock, 1991).

#### Purpose of this Study

Since recreational activities have been established as a positive intervention for several mental health conditions, and with research finding that experiential opportunities are valuable in the educational community, then it would seem that using recreation in the classroom for the benefit of mental health needs is clearly warranted. Therefore, this study investigates whether a recreational activity; disc golf, is an

effective intervention for increasing positive behavior in behaviorally disruptive children. The following research questions were examined: Can a sport be used as a play intervention in order to improve classroom behaviors in disruptive students? Is there a significant difference between a treatment and control group in level of positive classroom behavior following the intervention of Disc Golf Play?

## Method

### *Participants*

Twenty-two ( $N = 22$ ) 4<sup>th</sup> and 5<sup>th</sup> grade Caucasian children enrolled in a rural school-based counseling program in the mid-south participated in this study. Boys made up the majority of the sample ( $n = 17$ ), while five were female. This gender difference is consistent with research on latent-aged boys and girls in overt disruptive behaviors (Abikoff et al., 2004). The average age was 9.14 years ( $SD = .65$ ). The following primary DSM-IV-TR diagnoses were represented: 313.81 Oppositional Defiant Disorder ( $n = 5$ ); 314.9 Attention Deficit Hyperactivity Disorder ( $n = 9$ ); and 312.9 Disruptive Behavior Disorder, NOS ( $n = 8$ ).

### *Instrument*

The Brief Classroom Behavior Checklist (BCBC; Powell, 2006) was utilized to measure each student's ability to function positively in the classroom. A nine-item measure, the BCBC uses a 7-point Likert scale ranging from extremely poor (Ep = 1) to excellent (Ex = 7), with a neutral option (N = 4). Teachers are asked to rate students on how well they function on nine positive classroom behaviors (see Appendix). Scores from all nine items are tabulated; higher scores indicating a greater use of positive behavior in the classroom.

Items on the BCBC (Powell, 2006) were originally selected from a pool of classroom behaviors that a sample of third through eighth grade teachers identified as most problematic for behavior disordered children to maintain. Nine items were preserved after an item analysis revealed a Cronbach's alpha of .97 for the items. For purposes of this study, the BCBC was utilized for its administration ease and brief properties, and used for pre- and post- measurement.

### *Procedures*

Participants were randomly selected from a pool of volunteers recruited from a rural school-based mental health program, and later randomly placed into either an experimental or control group. Parents/guardians consented to the involvement of their child, and each teacher and child agreed to allow his or her reports and results to be used for research purposes. To maintain confidentiality following teacher ratings, each participant was provided a two-digit number for data analysis purposes.

Group 1 (experimental) spent four-weeks participating in weekly one-hour sessions of disc golf play in which each child was given a disc and asked to improve his or her throwing ability by hurling the disc toward specific targets spread throughout a football field. Children were given freedom to throw as much as they pleased, either alone or in small groups, while the principal researcher provided coaching and redirection when necessary. The coaching/redirection consisted of the counselor providing tips to the children on how to obtain greater distance with their throws, in addition to reminding them about the basic fundamentals of disc golf when poor throwing techniques were used. Extra time following lunch recess was allotted by the students' teachers so they could engage in this study.

Group 2 (control) received no disc golf intervention. In addition, they did not participate in any coaching, redirection, or therapeutic contact during these four-weeks in order to rule out the confounding effect of an unidentified counseling intervention. Group 2 participants were informed, however, that they could participate in the disc golf play following the four-week study, if interested.

### Results

Data were analyzed using a two-way ANOVA with repeated measures on one factor. Results indicate that the Group x Time interaction was statistically significant,  $F(1,20) = 38.77, p < .0001$ . Tests for simple effects indicate that no statistical differences existed between both groups at pre-test,  $F(1, 20) = .17, p = .68$ , however, a statistically significant difference was found between both groups at post-test,  $F(1, 20) = 21.98, p < .0001$ . Tests for simple effects across time show that the mean scores for the control group displayed no significant differences from pre- to post-test. The experimental group, however, did exhibit increases in positive behavior from pre- to post-test,  $F(1, 10) = 48.25, p < .0001$ . Effect size was calculated to determine the amount of variance in the positive behavior that is accounted for by the disc golf intervention. Results indicate a moderate effect ( $\eta^2 = .56$ ).

### Discussion

This study investigated whether a disc golf intervention would help improve positive classroom behaviors in children diagnosed with a disruptive behavior disorder. Teacher observations indicated that a disc golf intervention was statistically significant at improving a student's classroom behavior, compared to disruptive students who received no intervention (see Table 1). Analyses show that scores for the experimental

group were improved at post-test, whereas scores for the control group did not improve. Since the only intervention used during this investigation was the use of disc golf and not formal therapeutic counseling, it was suggested that improvements in classroom behavior could be attributed to the actual release of pent-up energy inherent in aggressive play. In addition, results indicated that both groups were not statistically different before the disc golf intervention was applied. This suggested that participants were equally paired, and that the only difference in the two groups was the inclusion of a recreational activity between teacher observations.

Table 1

*ANOVA Summary Table for Disc Golf Play Investigation*

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Between Subjects	21	3952.72		
Group (A)	1	909.72	909.09	5.97*
Residual between	0	3043.63	152.18	
Within Subjects	22	3062.00		
Time (B)	1	1443.27	1443.27	44.21**
A x B interaction	1	1265.82	1265.81	38.77**
Residual within	20	625.91	32.65	
Total	43	7014.72		

*Note.*  $N = 22$ . \* $p < .05$ , \*\* $p < .0001$ .

### Implications and Conclusions

Several implications exist for the play therapy and school-based professions as a result of this study. First, the use of disc golf play was found statistically significant at improving positive classroom behaviors. Counselors and teachers, therefore, should consider utilizing this intervention when working with children exhibiting such behaviors at school. In addition, teachers could conceivably use the activity as a learning tool during classroom hours by helping to improve student behavior experientially. Physical educators could conceivably incorporate this sport in the milieu of athletic activities typically experienced in their class since the sport ensures physiological and psychological gains (PDGA, 2006).

Second, the only therapeutic intervention utilized in this study was recreation play and minimal amounts of coaching/redirection. This was done in order to control for the effects that traditional talk-therapy may have had on the students' improved behavior. Since the authors of this study advocate for the use of play therapy over talk-therapy with children, this extraneous variable needs to be eliminated to reduce ambiguous results. Some suggestions for further study, then, include comparing disc golf play to traditional talk-therapy, replicating this study with more participants and groups, and constructing a similar study that investigates disc golf play compared to talk-therapy, no therapy, and disc golf with talk-therapy.

Finally, this study is limited to the investigation of classroom disruptive behavior in elementary students. More research is necessary to validate the effectiveness of disc golf play with different populations (i.e., adolescents), and with different psychological issues (i.e., poor self-concepts).

## References

- Abikoff, H. B., Jensen, P. S., Arnold, L. L. E., Hoza, B., Hectman, L. et al. (2004).  
Observed classroom behavior of children with ADHD: Relationship to gender and  
Comorbidity. *Journal of Abnormal Child Psychology*, 30(4), 349-359.
- American Therapeutic Recreation Association (2006). *Recreational therapy: A cost-  
beneficial option*. Retrieved January 11, 2006, from [http://www.atra-  
tr.org/benefitscost.htm](http://www.atra-tr.org/benefitscost.htm)
- Auchus, M. P., & Kaslow, N. J. (1994). Weight lifting therapy: A preliminary report.  
*Psychosocial Rehabilitation Journal*, 18(2), 99-102.
- Barcus, C. G., & Bergeson, R. G. (1972). Survival training and mental health: A review.  
*Therapeutic Recreation Journal*, 6, 3-7.
- Bizub, A. L., Joy, A., & Davidson, L. (2003). 'It's like being in another world':  
Demonstrating the benefits of therapeutic horseback riding for individuals with  
psychiatric disability. *Psychiatric Rehabilitation Journal*, 26(4), 377-384.
- Crozier, S., & Tincani, M. J. (2005). Using a modified social story to decrease disruptive  
behavior of a child with autism. *Focus on Autism and other Developmental  
Disabilities*, 20(3), 150-157.
- Ewert, A. (1987). Research in outdoor adventure: Overview and analysis. *The Bradford  
Papers Annual*, 2, 15-28.
- Gottlieb, J., & Polirstok, S. (2005). Program to reduce behavioral infractions and  
referrals to special education. *Children & Schools*, 27(1), 53-57.

- Kelley, M. P., Coursey, R. D., & Selby, P. M. (1997). Therapeutic adventures outdoors: A demonstration of benefits for people with mental illness. *Psychiatric Rehabilitation Journal, 20*(4), 61-73.
- Kottman, T. (2003) *Partners in play: An Adlerian approach to play therapy* (2<sup>nd</sup> ed.). Alexandria, VA: American Counseling Association.
- Lambert, M. C., Cartledge, G., & Heward, W. L. (2006). Effects of response cards on disruptive behavior and academic responding during math lessons by fourth-grade urban students. *Journal of Positive Behavior Interventions, 8*, 88-99.
- Landreth, G. (2002). *Play therapy: The art of the relationship* (2<sup>nd</sup> ed.). New York: Brunner-Routledge.
- Mordock, J. B. (2001). *Counseling the defiant child*. Northvale, New Jersey: Jason Aronson Inc.
- Neulicht, A. T. (2004). You can play too! [Review of the instructional video *You can play too!*]. *Journal of Applied Rehabilitation Counseling, 35*(4), 42.
- Pelham, T. W., Campagna, P. D., & Ritvo, P. G. (1993). The effects of exercise therapy on clients in a psychiatric rehabilitation program. *Psychosocial Rehabilitation Journal, 16*(4), 75-84.
- Powell, M. L. (2006). *The Brief Classroom Behavior Checklist (BCBC)*. Retrieved July 24, 2006, from <http://www.powellpsych.org>
- Professional Disc Golf Association (2006). *A guide to disc golf from the PDGA*. Retrieved May 24, 2006, from <http://www.pdga.com/information.php>
- Professional Disc Golf Association (2005). *Disc Golf and PDGA Demographics*. Retrieved January, 11, 2006, from <http://www.pdga.com/demographics.php>

- Shank, J. W., Kinney, W. B., & Coyle, C. P. (1993). Efficacy studies in therapeutic recreation research: The need, the state of the art, and future implications. In M. J. Malkin & C. Z. Howe (Eds.), *Research in therapeutic recreation: Concepts and methods* (pp. 301-335). State College, PA: Venture Publishing, Inc.
- Wilson, A., Arnold, M, Rowland, S. T., & Burnham, S. Promoting recreation and leisure activities for individuals with disabilities: A collaborative effort. *Journal of Instructional Psychology*, 24(1), 76-79.
- Umbreit, J., Lane, K. L., & Dejud, C. (2004). Improving classroom behavior by modifying task difficulty: Effects of increasing the difficulty of too-easy tasks. *Journal of Positive Behavior Interventions*, 6(1), 13-20.

## Appendix

## Brief Classroom Behavior Checklist (BCBC)

## Directions:

Rate your student's level of functioning on the following nine positive classroom behaviors. Scores range from Extremely Poor (Ep = 1) to Excellent (Ex = 7), with higher total scores indicating a greater use of positive behaviors in the classroom.

	Extremely Poor	Very Poor	Poor	Neutral	Good	Very Good	Excellent
1. Not arguing.	1	2	3	4	5	6	7
2. Doing as told.	1	2	3	4	5	6	7
3. Not fighting.	1	2	3	4	5	6	7
4. Staying in seat.	1	2	3	4	5	6	7
5. Raising hand.	1	2	3	4	5	6	7
6. Sharing	1	2	3	4	5	6	7
7. Anger control.	1	2	3	4	5	6	7
8. Not back-talking.	1	2	3	4	5	6	7
9. Not whining.	1	2	3	4	5	6	7

*Note.* Copyright © 2006 by Michael Lee Powell and available for download at

<http://www.powellpsych.org>

### Author Note

Michael Lee Powell, M.S. is a doctoral student in the counselor education program at the University of Arkansas, and works as school-based counselor at the Alma Intermediate School in Alma, AR, and as a therapeutic counselor at the University of Arkansas Fort Smith health clinic.

Rebecca A. Newgent, Ph.D. is an associate professor of counselor education at the University of Arkansas. Her school counseling interests include bullying behaviors, creative interventions, and assessment.

Correspondence regarding this article should be addressed to:

Michael Lee Powell, M.S., and Rebecca A. Newgent, Ph.D.

Department of Educational Leadership, Counseling, and Foundations

Counselor Education Program

University of Arkansas

136 Graduate Education Building

Fayetteville, AR 72701

E-mail: [mlpowel@uark.edu](mailto:mlpowel@uark.edu)