Perceived Effectiveness of Classroom Management Interventions with Attention Deficit/Hyperactivity Disorder

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Abstract

Many teachers are concerned about their ability to work effectively with students who have a diagnosis of attention deficit/hyperactivity disorder (ADHD). The purpose of this quantitative descriptive study was to determine the perceived efficacy of common interventions used to address negative ADHD behaviors in the elementary and middle school classrooms. The research questions investigated teachers' perceptions of the efficacy of the interventions, and the relationship between the interventions perceived as efficacious and teacher demographics. The data collection instrument was a researcher-designed survey that provided primarily quantitative data collected from 97 voluntary participants from two middle schools and four elementary schools. Spearman's Rho findings indicate a correlation between perceived efficacy of interventions and teacher's grade level taught and years of experience. Friedman's test indicated the intervention perceived most efficacious depended on the negative ADHD behavior presented.

Keywords: mainstreaming, interventions, attention deficit/hyperactivity disorder, classroom management, program effectiveness

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Mainstreaming and inclusion are educational movements which have gained impetus across the United States (Hunsaker, 2018). Both involve placing students with disabilities in the general education learning environment. Mainstreaming places students with disabilities into the general education environment with their non-disabled peers for a least part of the day (Hunsaker, 2018). The practice of inclusion, by contrast, requires that students with disabilities be placed in the general education environment for the entire day regardless of the type or severity for their disabilities (Santos, Sardinha & Reis, 2016). One of the most common disabilities possessed by children placed in the general education environment is attention deficit/hyperactivity disorder (ADHD), a disorder characterized by inattention, impulsivity, and (in some cases) hyperactivity (American Psychiatric Association (APA), 2000: Seigal 2011). Researchers have suggested that between 3% and 6% of students are affected by ADHD which may affect their ability to be successful academically and socially in the classroom setting (Wheeler, Pumfrey, & Wakefield, 2009).

Mainstreaming and inclusion are encouraged practices in today's educational system and more than 50% of students diagnosed with ADHD will be eligible for educational services in the general education environment (Humphrey, 2009). These students qualify for general education because their disability has not significantly impacted their academic progress thereby eliminating placement in a special-needs environment (APA, 2000; Gureasko-Moore, Dupaul, &

White, 2007). Although there is reason to applaud the movement toward mainstreaming and inclusion, many teachers have expressed concerns regarding their abilities to educate students with ADHD successfully in the general education environment (Murphy, J. 2018).
The following terms are defined as they are used in the study:

1. *Classroom Management*- The way in which the classroom is set up to provide for student success which includes seating arrangement, rules, reinforcement, and structure (Marzano & Marzano, 2003).

2. *Token Economy*- An intervention that includes rewarding students with points, tickets, treats, free time, computer time, or other rewards. Tokens are used to reinforce positive behaviors (Zlomke & Zlomke, 2003).

3. *Inclusion*- Including students with special needs into the general education classroom for the entire school day with special education support and services (Pierangelo & Jacoby, 1996).

4. *Antecedent*- Interventions used in a classroom by the teacher to reward positive behaviors, thereby preventing negative behaviors from occurring (Dupaul & Wyendt, 2006).

5. *Positive Reinforcement*- Rewarding a behavior to increase the likelihood of that behavior being repeated (Skinner, 1953).

6. *Negative Reinforcement*- Negative reinforcement decreases a behavior through the removal of (usually pleasant) stimulus (Skinner, 1938).

Classroom management is an important component to the successful mainstreaming and inclusion of students with ADHD. Classroom management is an educator's ability to successfully manage behaviors, demonstrate a structured and consistent learning environment, and provide multimodal learning strategies to reach the needs of all students (Fabiano & Pelham, 2003). However many teachers lack experience in educating the ADHD student, and their interventions strategies fail to provide sufficient results for creating behavioral change (Fabiano & Pelham, 2003; McKinley & Stormont, 2008, Murphy, J. 2018).

The most common and widely studied treatments for ADHD in the classroom are academic and behavioral interventions strategies (Dupaul & Wyendt, 2006; Fabiano & Pelham, 2003). Behavioral and academic interventions are a set of strategies that use principles of consistent behavior management (Mastropieri & Scruggs, 2002, 2004). Behavioral interventions such as consequent and antecedent strategies include the token economy reward system, response cost, verbal reprimands, and modified tasks (Dupaul & Wyendt, 2006). Academic interventions include strategies such as peer tutoring and accommodating or modifying class instruction (Carbone, 2001; Dupaul & Wyendt, 2006; Fabiano & Pelham, 2003; Reiber & McLaughlin, 2004; trout, Lienemann, Reid, & Epstein, 2007). Although many school-based and classwide interventions strategies are available, many teachers find these interventions to be impractical and feel they detract their attention from the class as a whole (Harlacher, Roberts, & Merell,

2006). Understanding successful academic and behavioral interventions for the ADHD student in the general education classroom may help elementary and middle school teachers create a positive, structured learning environment, void of disruptions that is beneficial to all students.

Purpose of the Study

The purpose of this study was to determine the relationship between the independent variables – the teacher's grade level taught, level of education, and years of teaching experience- and the dependent variable, the participants' opinions on the perceived efficacy of classroom intervention strategies for students with ADHD. Data were collected through a researcher-designed survey in an attempt to determine the types of classroom interventions- academic, consequent and antecedent- that are successful in shaping the negative ADHD behaviors of inattentiveness, speaking out of turn, wandering, and poor peer interactions in the elementary and middle school environments.

Despite the growing emphasis on the inclusion and mainstreaming of ADHD students, teachers receive little training regarding ADHD (Bussing, Gary, Leon, Garvan, & Reed, 2002; Darrow 2009; Scruggs and Mastropieri, 1996; West et al,. 2005, Murphy, J. 2018). Bussing et al (2002) found that exactly half of the teacher participants in their study received any formal ADHD training. Moreover, it is unknown whether the education teachers received regarding ADHD represents the current state of research literature. Teachers in these studies of ADHD knowledge reported that they commonly encountered children with ADHD in their classroom and wished to receive more training, especially regarding successful strategies used for managing ADHD-related behaviors in the classroom (Jones & Chronis-Tuscabo, 2008, Murphy, J. 2018).

This study attempts to fill the aforementioned gaps by surveying the types of intervention strategies- antecedent, consequent, and academic- found to be perceived by teachers as efficacious in shaping negative behaviors of ADHD students in inclusive elementary and middle school environments. Further, the results of the study supplement existing research that provides information on the array of interventions used in the inclusive classroom.

Method

Participants

The population for this study was K-8 teachers from four elementary school and two middle schools with varying levels of education, years of teaching and grade levels taught. Schools chosen were from one urban, middle class district in the Orange County region of southern California. 97 of the 140 teachers invited volunteered to participate in this study. Table 1 displays descriptive data on participants of this study.

Table 1
Descriptive Data of Participants: Frequency Counts for Selected Variables (n = 97)

Variable	Category	*N*	%
Gender	Male	25	25.8
	Female	72	74.2
Grade level	First	7	7.2
	Second	13	13.5
	Third	10	10.3
	Fourth	7	7.2
	Fifth	16	16.5
	Sixth	14	14.4
	Seventh	14	14.4
	Eighth	16	16.5
Years of teaching[a]	Less than 5 years	14	14.4
	6–10 years	34	35.1
	11–15 years	18	18.5
	16–20 years	17	17.5
	21 years and beyond	14	15.4
Level of education	Bachelor's degree	30	30.9
	Master's degree	67	69.1
Credentials[b]	Multiple-subject credential	69	71.1
	Single-subject credential	33	34.0
	Professional clear credential	60	61.9

Years of teaching: $M = 12.28$, $SD = 7.23$; [b] Some teachers hold multiple credentials.

Survey Instrument

The instrument used to collect data was a researcher-designed survey entitled *Teacher Interventions for ADHD Students* (Table 2). This survey was created to determine which classroom intervention- academic, consequent, or antecedent (Tables 3, 4, and 5)- is perceived as effective in shaping the negative ADHD behaviors of inattentiveness, wandering, speaking out of turn, and poor peer interactions.

Participants were asked to read four vignettes. Each vignette included a negative ADHD behavior, as recognized by the DSM-IV (APA, 2000) and teacher observations. Each vignette included six intervention choices: two academic, two consequent, and two antecedent (24 total). Each intervention choice has been validated by past research as effective in shaping negative ADHD behaviors. Responses were measured using a 5-point Likert-type scale that allowed the participants to choose the level that best reflected their perceptions about the effectiveness of the interventions listed. Likert-type choices included 1(very poor) 2 (poor) 3 (unsure) 4 (good) and 5 (very good). The survey also provided an optional line for participants to comment on one or two strategies they found to be most helpful.

Data collection occurred over a 2-week period, the amount of time allotted for participants to complete the survey instrument. Consent forms and surveys were mailed to participants. Participants were asked to return completed or incomplete surveys in the self-addressed envelope provided.

Middle school and primary teachers from one urban, middle class school district in Orange County, California were asked to participate in this study. Of the 140 participants invited to participate, 103 surveys were returned. Of the surveys returned, 97 participants agreed to take part in the survey whereas six potential participants declined. Data were recorded and study results were compiled using SPSS v.18.

Table 2: *Survey--Teacher Interventions for ADHD Students*
Each vignette below describes four negative behavioral classroom scenarios of students with ADHD in the mainstream educational environment (inattention, wandering around the room, poor peer interaction, speaking out of turn). Carefully read each vignette and the methods that follow. Using the scale below each vignette, please rate each of the methods as very poor, poor, unsure, good and very good.

Vignette # 1
Inattentiveness

In the middle of an important classroom lecture which will prepare students for an upcoming test, you notice that Tommy is staring out the window. Tommy is obviously distracted by what is taking place outside the window and not following along with the daily lecture.

Educators use different methods to shape this negative behavior –please rate each of the six possible methods as to how effective you think that method would be in this situation-

1 = Very Poor, 2 = Poor, 3 = Unsure, 4 = Good, 5 = Very Good.

1. Move Tommy to a seat away from windows_____
2. Call on Tommy to answer a question related to the lecture____
3. Reward the student next to Tommy (verbal or tangible) for paying attention nicely_____
4. Ignore Tommy at this moment and later change your instructional schedule to teach the most demanding attentional tasks in the morning or at the beginning of a class period._____
5. Provide a nearby peer a signal to draw Tommy back on task._____
6. Ask Tommy to redirect his attention to the front of the room_____

Please comment on one or two of the strategies that you would think are most helpful: (optional)_____
_____
_____

Vignette # 2
Wandering

While teaching a math lesson, Tommy gets up from his desk and walks over to the trash can to throw away a piece of paper. While walking to the trash can, Tommy stops to say hello to a peer

seated near the trash. The peer seems to be ignoring him, but Tommy continues to talk which has now disrupted the learning environment.

Educators use different methods to shape this negative behavior –please rate each of the six possible methods as to how effective you think that method would be in this situation-

1 = Very Poor, 2 = Poor, 3 = Unsure, 4 = Good, 5 = Very Good.

7. Remind Tommy that he must remain seated during instruction____
8. Ignore Tommy's behavior and provide tickets, tokens, or treats to other students who have continued to stay on task____.
9. Provide Tommy the choice to return to his seat or earn a consequence ____
10. Assign Tommy a consequence (detention, time out, referral)._____
11. Give a responsible peer the cue to redirect Tommy back to his desk____
12. Enhance your math lesson at that moment to draw Tommy's attention back (ask for volunteers, speak in a different tone, walk around the room)____

Please comment on one or two of the strategies that you would think are most helpful:
(optional)_____
_____
_____

Vignette # 3
Poor Peer Interaction

During class time, students are asked to join a group of two or three students or are placed by you into groups of two or three to work together on an activity. While in their groups, Tommy refuses to cooperate with the other students and at the same time antagonizes them with silly comments and rude noises. The other students ask Tommy to stop, but he only mimics them. Educators use different methods to shape this negative behavior –please rate each of the six possible methods as to how effective you think that method would be in this situation-

1 = Very Poor, 2 = Poor, 3 = Unsure, 4 = Good, 5 = Very Good.

13. Walk towards Tommy's group and reward the others for working nicely together (verbal or tangible) ____.
14. Sit down and join Tommy's group to assist with the task____
15. Privately Remind Tommy that he will earn points/tickets/check marks for working nicely with others_____.
16. Remind Tommy of the class rules_____
17. Give Tommy a consequence (detention, time out, office referral) _____.
18. Assign Tommy an individualized task to work on ____

Please comment on one or two of the strategies that you would think are most helpful:

(optional)_____
_____
_____

Vignette #4
Speaking Out Of Turn

Following a class activity you proceed to ask the students questions to check for understanding. You ask the first question and Tommy blurts out the answer without being called on. You:

Educators use different methods to shape this negative behavior –please rate each of the six possible methods as to how effective you think that method would be in this situation.

1 = Very Poor, 2 = Poor, 3 = Unsure, 4 = Good, 5 = Very Good.

19. Ignore Tommy and call on a student who has raised their hand to answer the question_____.
20. Tell the class that they've lost class points because a peer broke a rule by shouting out_____.
21. Thank Tommy for answering the question correctly, but gently remind Tommy of the rule of raising your hand_____
22. Reward the students who are raising their hands to answer the question (verbally- "I like the way Kelly is raising her hand") or (tangible- treats/tickets/points)_____.
23. Assign a responsible peer to sit next to Tommy for rule reminders____
24. Change your way of instruction by calling on a student first before asking the question (Kelly, can you answer the next question?) ____

Please comment on one or two of the strategies that you would think are most helpful:
(optional)_____
_____
_____

Table 3, 4 and 5 display the academic, consequent, and antecedent interventions used within each vignette.

Table 3
Academic Intervention Strategies

Items on survey	Data elements academic interventions	References
1. Provide a nearby peer a signal to draw Tommy back on task.	Vignette 1	Reiber & Mclaughlin, 2004
2. Call on Tommy to answer a question related to the lecture.		Greenwood, Maheady & Delquadri, 2002
1. Give a responsible peer the cue to redirect Tommy back to his desk.	Vignette 2	Dupaul & Weyandt, 2006
2. Enhance your math lesson at that moment to draw Tommy's attention back (ask for volunteers, speak in a different tone, walk around the room).		Trout, Ortiz, Lienemann, Reid, & Epstein, 2007
1. Sit down and join Tommy's group to assist with the task.	Vignette 3	
2. Assign Tommy an individualized task to work on.		
1. Assign a responsible peer to sit next to Tommy for rule reminders.		
2. Change your way of instruction by calling on a student first before asking the question (Kelly, can you answer the next question?).	Vignette 4	

Table 4
Antecedent Intervention Strategies

Items on survey	Data elements antecedent interventions	References
1. Move Tommy to a seat away from windows.	Vignette 1	Reiber & Mclaughlin, 2004
2. Ignore Tommy at this moment and later change your instructional schedule to teach the most demanding attentional tasks in the morning or at the beginning of a class period.		Dupaul & Weyandt, 2006
1. Remind Tommy that students must remain seated during instruction.	Vignette 2	Trout et al., 2007; Kurtz, 2004
2. Provide Tommy the choice to either return to his seat or earn a consequence.		
1. Privatively Remind Tommy that he will earn points/tickets/treats for working nicely with others.	Vignette 3	
2. Remind Tommy of the class rules.		
1. Ignore Tommy and call on a student who has raised their hand.	Vignette 4	

2. Thank Tommy for answering the question correctly, but gently remind Tommy of the rule of raising your hand.		

Table 5
Consequent Intervention Strategies

Items on survey	Data elements consequent interventions	References
1. Reward the student next to Tommy (verbal or tangible) for paying attention nicely.	Vignette 1	Reiber & McLaughlin, 2004
2. Ask Mary to redirect her attention to the front of the room.		Dupaul & Weyandt, 2006
1. Ignore Tommy's behavior and provide tickets, tokens, or treats to other students who have continued to stay on task.	Vignette 2	Carbone, 2001
2. Assign Tommy a consequence, (timeout , referral or detention).		Fabiano & Pelham, 2003
1. Walk towards Tommy's group and reward the others for working nicely together.	Vignette 3	Trout et al, 2007
2. Consequence Tommy (time out, office referral, detention).		Alter, Wyrick, Brown, & Lingo, 2008
1. Tell the class that they've lost class points because a peer broke a rule by shouting out.	Vignette 4	
2. Reward students who are raising their hands to answer the question (verbally or with tangibles).		

Results

Table 6 displays overall ratings for the 24 intervention strategies. The highest intervention considered best under any circumstance was the consequence intervention for speaking out: "Reward students who are raising their hand to answer a questions verbally or with tangibles" (m =4.18). This was followed by the academic intervention for poor peer interaction, "Sit down and join Tommy's group to assist with the task" (m = 4.09). The intervention considered least effective under any circumstance was the consequence intervention for speaking out: "tell the class they've lost class points because a peer broke a rule by shouting out" (m = 1.57).

Table 6
Intervention Ratings Across All Situations

Intervention[a]	Vignette[b]	Question	*M*	*SD*
CON	SP	22. Reward students who are raising their hands to answer the question (verbally or tangibly).	4.18	0.98
ACA	PPI	14. Sit down and john Tommy's group to assist with the task.	4.09	0.93
ACA	W	12. Enhance your math lesson at that moment to draw Tommy's attention back (speak in a different tone, walk around the room).	4.02	1.03
ANT	PPI	15. Privately remind Tommy that he will earn tickets, treats, and points for working nicely with others.	3.73	0.94
CON	PPI	13. Walk towards Tommy's group and reward others for working nicely together	3.72	1.16
ANT	IN	1. Move Tommy to a seat away from windows	3.68	1.20
CON	IN	6. Ask Tommy to redirect his attention to the front of the room.	3.67	0.99
ANT	W	7. Remind Tommy that students must remain seated during instruction.	3.58	0.98
ANT	SP	21. Thank Tommy for answering the question correctly, but gently remind him of the rule for raising your hand.	3.56	1.10
CON	IN	3. Reward the student next to Tommy (verbal or tangible) for paying attention nicely.	3.47	1.28
ACA	IN	5. Provide a nearby peer a signal to draw Tommy back on task.	3.29	1.19
ACA	SP	24. Change your way of instruction by calling on a student first before asking the question.	3.19	1.32
ANT	PPI	16. Remind Tommy of the class rules.	3.16	1.17
ANT	SP	19. Ignore Tommy and call on a student who has raised their hand.	3.16	1.18
ANT	W	9. Provide Tommy the choice to either return to his seat or earn a consequence.	3.15	1.24
CON	W	8. Ignore Tommy's behavior and provide tickets, tokens, or treats to other students who have continued to stay on task.	3.11	1.20
ACA	W	11. Give a responsible peer the cue to redirect Tommy back to his desk.	2.96	1.12
ACA	SP	23. Assign a responsible peer to sit next to Tommy for rule reminders.	2.87	1.12
ACA	PPI	18. Assign Tommy an individualized task to work on.	2.64	1.32
ANT	IN	4. Ignore Tommy at this moment and later change your instructional schedule to teach the most demanding attentional tasks in the morning or at the beginning of a class period	2.64	1.24
ACA	IN	2. Call on Tommy to answer a question related to the lecture.	2.56	1.17
CON	PPI	17. Consequence Tommy (time out, office referral, detention).	2.46	1.23
CON	W	10. Assign Tommy a consequence (time out, referral, or detention).	2.19	1.12
CON	SP	20. Tell the class they've lost class points because a peer broke a rule by shouting out.	1.57	0.68

[a] Type of Intervention: CON= *Consequent,* ANT = *Antecedent*, ACA = *Academic;* [b] Type of Vignette: IN=Inattentiveness, W=Wandering, PPI=Poor peer interaction, SP=Speaking out.

Table 7 displays results of the vignette for student inattentiveness.
Teachers chose the antecedent intervention of moving a student away from distractions as most effective. The academic intervention which asks teachers to gain a student's attention by drawing him into the discussion was seen as least effective. Two teachers at the middle school level noted

in the "optional" section that it would be difficult to address a4 because of the middle school schedule set in academic periods not a daily schedule.

Table 7
Effectiveness Ratings of Approaches to Address Student Inattentiveness Sorted Highest Effectiveness Rating (n=97)

	Approach	Intervention	*M*	*SD*
a1	Move Tommy to a seat away from the window.	Antecedent	3.68	1.20
a6	Ask Tommy to redirect his attention to the front of the room.	Consequent	3.67	0.99
a3	Reward the student next to Tommy (verbal or tangible) for paying attention nicely.	Consequent	3.47	1.28
a5	Provide a nearby peer a signal to draw Tommy back on task.	Academic	3.29	1.20
a4	Ignore Tommy at this moment and later change your instructional schedule to teach the most demanding attentional tasks in the morning or at the beginning of a class period.	Antecedent	2.64	1.24
a2	Call on Tommy to answer a question related to the lecture.	Academic	2.56	1.17

Table 8 displays results of the vignette for student wandering.
Teachers chose the academic intervention of enhancing the lesson as most effective for decreasing the behavior of wandering. The consequent intervention of assigning a referral, detention or time out to decrease wandering was seen as least effective. Middle school teachers noted in the optional section that "time out" was not a grade appropriate intervention and that detention was not a successful intervention for all students, but rather a case by case determination.

Table 8
Effectiveness Ratings of Approaches to Address Student Wandering Sorted by Highest Effectiveness Rating (n = 97)

	Approach	Intervention	*M*	*SD*
a12	Enhance your math lesson at that moment to draw Tommy's attention back (speak in a different tone, walk around the room).	Academic	4.02	1.03
a7	Remind Tommy that students must remain seated during instruction.	Antecedent	3.58	0.98
a9	Provide Tommy the choice to either return to his seat or earn a consequence.	Antecedent	3.15	1.24
a8	Ignore Tommy's behavior and provide tickets, tokens, or treats to other students who have continued to stay on task.	Consequent	3.11	1.20
a11	Give a responsible peer the cue to redirect Tommy back to his desk.	Consequent	2.19	1.12
a10	Assign Tommy a consequence (time out, referral, or detention).	2.19	1.12	

X^2 (5, $N = 97$) = 114.19, $p = .001$.

Table 9 displays results of the vignette for poor peer interaction. Teachers chose the academic intervention of joining the student's group as the most effective intervention for decreasing poor peer interaction. The consequent intervention of assigning a referral, detention or time out to decrease poor peer interactions was seen as least effective. Some teachers at the elementary and middle levels noted in the "optional" section that token economy was seen as a beneficial intervention but was not cost effective when rewarding with tangibles. One teacher noted in the "optional" section the effectiveness of rewarding with activities such as: free time, computer time, lunch with teacher, teacher helper, eat in class day, movie day, no homework pass.

Table 9

Effectiveness Ratings of Approaches to Address Student Poor Peer Interaction Sorted by Highest Effectiveness Rating (n=97)

	Approach	Intervention	*M*	*SD*
a14	Sit down and join Tommy's group to assist with the task.	Academic	4.09	0.93
a15	Privately remind Tommy that he will earn tickets, treats, and points for working nicely with others.	Antecedent	3.73	0.94
a13	Walk towards Tommy's group and reward the others for working nicely with others.	Consequent	3.72	1.16
a16	Remind Tommy of the class rules.	Antecedent	3.16	1.17
a18	Assign Tommy an individualized task to work on.	Academic	2.64	1.32
a17	Consequence Tommy (time out, office referral, detention).	Consequent	2.46	1.23

X^2 (5, N = 97) = 116.33, p = .001.

Table 10 displays results of the vignette for speaking out. Teachers chose the consequent intervention of rewarding students who are following the rule of raising their hand appropriately as most effective, therefore ignoring the student who is speaking out. The consequent intervention of loss of class points was seen as least effective in shaping the negative behavior of speaking out of turn. Many teachers noted in the "optional' section that the reward of verbal praise for raising their hand appropriately was a successful intervention.

Table 10

	Approach	Intervention	*M*	*SD*
a22	Reward students who are raising their hands to answer the question (verbally or tangibly).	Consequent	4.18	0.98
a21	Thank Tommy for answering the question correctly, but gently remind tommy of the rule of raising his hand.	Antecedent	3.56	1.10
a24	Change your way of instruction by calling on a student first before asking the question: Kelly, can you answer the next question?).	Academic	3.19	1.32

a19	Ignore Tommy and call on a student who has raised their hand.	Antecedent	3.16	1.18
a23	Assign a responsible peer to sit next to Tommy for rule reminders.	Academic	2.87	1.12
a20	Tell the class they've lost class points because a peer broke a rule by shouting out.	Consequent	1.57	0.68

Effectiveness Ratings of Approaches to Address Students Speaking Out Sorted by Highest Effectiveness Rating (n=97).

X^2 (5, (N = 97) = 197.70, p = .001.

Table 11 displays the results between teacher demographics and their opinions on the perceived effectiveness of classroom management interventions used to shape negative ADHD behaviors. A Spearman's test detected two of the 24 correlations to be significant between the 24 intervention ratings and teacher years of experience. None of the 24 correlations were related to teacher's level of education. The relationship between the 24 intervention ratings and teachers grade level yielded a significance of 4 of the 24 correlations.

Table 11

Spearman's Correlations for Inattentiveness, Wandering, Poor Peer Interaction, and Speaking Out Ratings with respondent Demographics (n = 97)

Spearman Correlations for Inattentiveness, Wandering, Poor Peer Interaction, and Speaking Out Ratings with Respondent Demographics (n = 97)

Interventions	Approach[b]	Experience	Education level	Grade level
ANT	1. Move Tommy to a seat away from the windows (IN)	-.08	-.11	.01
ACA	2. Call on Tommy to answer a question related to the lecture (IN)	-.16	-.09	-.17
CON	3. Reward the student next to Tommy (verbal or tangible) for paying attention nicely (IN)	-.06	-.04	-.20*

table continues

Interventions	Approach[b]	Experience	Education level	Grade level
ANT	4. Ignore Tommy at this moment and later change your instructional schedule to teach the most demanding attentional tasks in the morning or at the beginning of a class period. (IN)	-.12	.01	.14
ACA	5. Provide a nearby peer a signal to draw Tommy back on task. (IN)	.08	.16	.06
CON	6. Ask Tommy to redirect his attention to the front of the room. (IN)	.01	-.16	-.05
ANT	7. Remind Tommy that students must remain seated during instruction. (W)	.17	.11	-.18
CON	8. Ignore Tommy's behavior and provide tickets, tokens, or treats to other students who have continued to stay on task. (W)	-.20*	-.01	.07
ANT	9. Provide Tommy the choice to either return to his seat or earn a consequence. (W)	-.05	.03	.22*
CON	10. Assign Tommy a consequent (time out, referral, or detention). (W)	-.09	-.07	.09
ACA	11. Give a responsible peer the cue to redirect Tommy back to his desk. (W)	.11	-.09	.03
ACA	12. Enhance your math lesson at that moment to draw Tommy's attention back (speak in a different tone, walk around the room). (W)	.11	.10	-.24
CON	13. Walk towards Tommy's group and reward others for working nicely together. (PPI)	-.09	-.08	-.23*
ACA	14. Sit down and join Tommy's group to assist with the task (PPI)	.03	.09	-.26**
ANT	15. Privately remind Tommy that he will earn tickets, treats, and points for working nicely with others. (PPI)	-.04	.01	.09
ANT	16. Remind Tommy of the class rules. (PPI)	.01	-.15	-.10

table continues

Interventions	Approach[b]	Experience	Education level	Grade level
CON	17. Consequence Tommy (time out, office referral, detention). (PPI)	.09	-.11	.09
ACA	18. Assign Tommy an individualized task to work on. (PPI)	-.11	-.03	.16
ANT	19. Ignore Tommy and call on a student who raised their hand. (SP)	-.10	-.15	-.01
CON	20. Tell the class they've lost class points because a peer broke a rule by shouting out. (SP)	-.20*	-.10	.11
ANT	21. Thank Tommy for answering the question correctly, but gently remind Tommy of the rule of raising his hand. (SP)	.02	.04	.12
CON	22. Reward students who are raising their hands to answer the question (verbally or tangibly). (SP)	-.06	.15	.19
ACA	23. Assign a responsible peer to sit next to Tommy for rule reminders. (SP)	.04	-.10	-.03
ACA	24. Change your way of instruction by calling on a student first before asking the question (Kelly, can you answer the next question?). (SP)	-.17	-.05	.08

[a] Type of intervention: CON= *Consequent,* ANT = *Antecedent*, ACA = *Academic;* [b] Type of Vignette: IN=Inattentiveness, W=Wandering, PPI=Poor Peer Interaction, SP=Speaking Out; * = ; ** = .

Implications

Since the Education for All Handicapped Children Act (P.L. 94-142) was instated, the focus on Least Restrictive Environments for students was increased and ensured for students regardless of the level of severity. IDEA (1997) encouraged special education in the general education environment. Students with ADHD in the general education environment often demonstrate negative behaviors that can interfere with the learning of the ADHD student and can also affect the learning of peers. Although ADHD has received much attention in recent years, little of that attention has been specifically directed towards ADHD classroom interventions for successful classroom management (Dupaul, Weyandt, & Janusis, 2011).

Many teachers express ineffective means to successfully shape negative ADHD behaviors and due to frustration approximately 17% of teachers quit within the first five years of teaching (Oliver & Reschley, 2007; Quartz, 2003; Brown, E., 2015). A teacher's ability to implement a classroom management plan that is successful is crucial to providing the ADHD student and his

or her peers an environment that is beneficial to learning, increased academic achievement, and positive social interactions.

The meaning and the potential value of this study is to provide educators with information and suggestions, as recognized by their peers, the types of interventions that may be used to create a positive and productive learning environment for the ADHD student in the inclusive elementary and middle school classroom.

Results of the study provide educators evidence-based information on interventions perceived to be successful in shaping the commonly recognized negative ADHD behaviors of inattentiveness, speaking out of turn, wandering and poor peer interactions. Teachers who were once hesitant to take students with ADHD into their classroom may feel more adequately prepared to start the year without the fear of trial and error.

Limitations

The Study sample was limited to a sample of 97 educators from four elementary schools and two middle schools from one urban, middle- class school district in southern California. Educators from other school populations, regions and higher grade levels may differ in their perceived efficacy of antecedent, academic and consequent interventions.

Another limitation can be recognized in the way the data were collected. Although a survey is a valid tool for the study, having a Likert-type scale limits participants to only the choices available. This survey did allow for comments regarding interventions, but it was optional and limited only to the interventions within the survey. Due to the choice of optional, few teachers provided comments on the survey, limiting the amount of information to be added to the results. Also, the researcher was not present when participants completed surveys, so it is unknown to what extent distractions may have influenced individual responses.

Recommendations

Although the results of this study have been informational regarding classroom-management interventions perceived successful in shaping negative ADHD behaviors, there is still a vast amount of information lacking in the research. First, there is a plethora of information regarding intervention strategies for shaping the behaviors of students in the primary grades, but limited information regarding successful interventions for upper grades, therefore continued research is needed. This study includes students with ADHD in grades Kindergarten through 8; future studies could include students in grades 9 through 12. Secondly, this study was limited to three interventions: antecedent, consequent, and academic. Future studies could include more interventions such as self-monitoring or the effects of medication and interventions combined. Similarly, a qualitative or experimental design could be employed. A qualitative design using interviews, personal experiences, and observations would likely provide more comprehensive information as to why particular interventions are perceived as most successful in shaping negative ADHD behaviors. An experimental design that includes a control and experimental group of students demonstrating similar negative behaviors could provide the results of interventions used in one environment and withheld from another.

Finally, this study was conducted within one small urban, middle-class Orange County school district in southern California, yielding a sample size of only 97 teachers. A study conducted in larger cities and larger school districts of varying demographics and teacher experience creates potential for more variation in perceived effectiveness of classroom interventions.

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