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Homework Interventions for Children with ADHD: Teacher  
Choices in Elementary, Middle and High School

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BARRY UNIVERSITY

Homework Interventions for Children with ADHD: Teacher Choices in  
Elementary, Middle and High School

by

Margaret Puebla

A Directed Research Project

Submitted to the Faculty of  
Barry University in partial fulfillment  
of the requirements for the degree of  
Specialist in School Psychology

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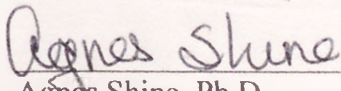
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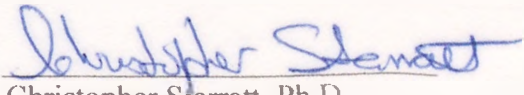
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## Abstract

Children diagnosed with Attention-Deficit/Hyperactivity Disorder display behaviors that impact their academic performance. Homework is an integral part of an educational program but they often do not complete or return their homework. The purpose of this study was to investigate what homework strategies are currently used by elementary, middle, and high school teachers in Miami Dade County within the different school settings. Participants consisted of 120 teachers from public schools within Miami-Dade County, and Catholic schools within the Archdiocese of Miami. Teachers completed an anonymous survey about their use of homework intervention strategies. Results indicated that although the teachers endorsed similar strategies within the elementary, middle, and high school levels, significant differences were noted in the number of endorsements between grade levels for utilizing parental involvement ( $p < .001$ ), teaching organizational skills ( $p = .003$ ), homework strategies ( $p = .001$ ), and returning results ( $p < .001$ ). Years of teaching experience or experience with teaching students diagnosed with ADHD did not significantly influence the strategies teachers chose to endorse. However, as the student's age increased, teachers selected strategies that depended on individual student responsibility rather than on parent assistance. Teacher preferred strategies, effects of experience, and differences among grade level endorsements are discussed. The results of this study can help teachers make decisions regarding appropriate homework strategies for students diagnosed with ADHD across the various grade levels.

## Homework Interventions for Children with ADHD: Teacher Choices in Elementary School, Middle School, and High School

Attention-Deficit/ Hyperactivity Disorder (ADHD) is diagnosed in children during their elementary school years. In the early 1900's ADHD was viewed as a defect in moral character due to the non-compliance reported by parents (Goldstein & Goldstein, 1998). Other names for ADHD were: post-encephalitic disorder, minimal brain dysfunction, hyperkinesis, and attention deficit disorder with and without hyperactivity (Goldstein & Goldstein). ADHD was referred to as Hyperkinetic Reaction of Childhood in the *DSM-II* (American Psychiatric Association, 1968) and, Attention Deficit Disorder in the *DSM-III* (American Psychiatric Association, 1980). It is currently referred to as Attention-Deficit/ Hyperactivity Disorder in the *DSM-IV-TR* (American Psychiatric Association, 2000).

According to the *DSM-IV-TR* (2000, text revision), the fundamental aspect of ADHD is a noted pattern of inattention with, or without hyperactivity and impulsivity. The child diagnosed with attention- deficit/ hyperactivity disorder usually displays these behaviors significantly more frequently than their peers do. The behaviors are observable at home but become more pronounced within the classroom setting, where children are expected to maintain attention for extended periods of time and where there is a structure to be followed. Children tend to exhibit the symptoms of the disorder before they are 7 years old, but in the case of the children who are predominately inattentive and not hyperactive, the disorder may be undetected for several years after the age of 7. The symptoms may manifest in academic, social, and occupational situations according to the *DSM-IV-TR*.

### *Subtype Descriptions*

Because children diagnosed as ADHD, do not display all of the symptoms to the same degree and severity, researchers began to question the diagnostic criteria. ADHD was viewed as a single diagnostic category in the DSM-III (1980) and was reconceptualized in the DSM-IV (Graetz, et. al., 1994), as a two dimensional disorder consisting of symptoms of inattention and hyperactivity/impulsivity. The *DSM- IV-TR*, (2000) provides diagnostic criteria for three subtypes of ADHD; Attention- Deficit/ Hyperactivity Disorder-Combined Type, Attention-Deficit/ Hyperactivity Disorder- Predominately Inattentive Type, and Attention-Deficit Hyperactivity Disorder- Predominately Hyperactive- Impulsive Type. Children with the combined type exhibit behaviors found in both predominately inattentive and the hyperactive types of ADHD. See Appendix A for the diagnostic criteria for each ADHD subtype.

Russell Barkley one of the leading authorities on ADHD, questioned the criteria used for a diagnosis of ADHD (Barkley, 1997). He stressed the need for a new theoretical model that does not primarily rely on behavioral observations of the child, but employs a variety of diagnostic methods. For example, the current clinical approach of focusing on the hyperactive and impulsive behaviors does not cover all the aspects of the disorder. Therefore, diagnosing by subtype is not clear as presenting symptoms vary across different age levels as hyperactive behaviors are noted in early childhood, while problems with inattention may not be apparent until later in life. According to Barkley, the primary impairment in ADHD is the inability to inhibit responses not in attention difficulties as noted in the DSM-IV guidelines. The inability to inhibit responses leads to secondary impairments in executive functions (i.e., working memory, the internalization of self-

directed speech, controlling mood, motivation and arousal, and the ability to break down, combine and reconstitute behavior).

### *Prevalence*

The prevalence rate of ADHD differs according to age. In school age children the prevalence rate is between 3- 9 %, (West, Houghton, Graham, & Whiting, 2002) while the prevalence rate among adolescents ranges from .3% (Shaffer, 1994) to about 6 % (Cuffe, et. al., 2001) of the population. Reports indicate that the number of children diagnosed with ADHD in the United States increased from 19.4 out of 1000 in 1990, to 59.0 out of 1000 in 1998 (Robinson ,Skaer, Sclar, & Galin, 2002), however the etiology for the increase remains unknown. According to Cuffe et al., the prevalence rate for males is approximately 3 times higher than that for females. However, there has been a rise in the number of females diagnosed with ADHD from 296,389 in 1991-1992, to 886,798 in 1997 to 1998 (Robinson, et. al.).

### *Federal legislation*

Federal legislation has effected how children with ADHD are diagnosed and accommodated within the school setting. Although Public Law 94-142 (Federal Register, 1975, p. 42478) and Section 504 (Federal Register, 1973,104.3,j) do not specifically mention ADHD, school districts have utilized these laws to provide services to children diagnosed as ADHD. Under Public Law-94-142, all children are entitled to a free and appropriate education. Therefore, many children with ADHD symptoms that impacted their learning or were disruptive in the classroom setting were placed in classes for the learning disabled or emotionally disturbed. School districts interpreted Section 504 of the Rehabilitation Act of 1973 (Federal Register, 1973, 104.3j) to allow them to provide



children with ADHD classroom accommodations, such as having classroom tasks broken down into small segments and giving more time to complete assignments.

The Individuals with Disabilities Education Act of 1990 (Federal Register, 1990, 300.7c9), does not include the label of ADHD as a separate educational category, but children who are diagnosed with ADHD may qualify for special education services under the category of Other Health Impairments(OHI) (Trumbull, Shank, Smith, & Leal, 2002). Children receiving special education services under the label of OHI have chronic health problems that impact their academic progress within the educational environment. School districts consider ADHD a chronic health impairment that can adversely affect the child's school functioning (Trumbull,et.al.).

### *Manifestations in Adolescence*

Research suggests that ADHD characteristics seen in childhood persist into adolescent years and their expression may differ over the course of time (Cuffe et al., 1991). For example, adolescents diagnosed with ADHD tend to have problems in their relationships with the family, they are more likely to fail a grade, and more likely to be expelled from school or drop out of school (Biederman, et. al., 1996) . Adolescents with ADHD presented more problems with conduct, impulsivity, hyperactivity, score higher on self injury scales, and consume a significantly greater amount of alcohol than their peers (Blouin, Bornstein, & Trites, 1978). Many of the symptoms that are observed during childhood develop into more severe antisocial problems, and school difficulties (Weiss & Hechtman , 1993). Adolescents with ADHD are described by Wender (1995) as thrill seekers, and lack empathy, self-control, and awareness of how they affect others. Academic underachievement is the most common manifestation of ADHD in adolescence

as high school places increased demands for organization, attention to detail, concentration, and overall persistence. Their failure to complete assignments, careless mistakes, and poor conduct lead to academic problems for the adolescent.

### *Persistence of symptoms*

The rates for remission and persistence into adolescence vary across research studies. Approximately 37% of children and adolescents diagnosed with ADHD have their symptoms remit or lessen (Barkley & Biederman, 1997). Weiss and Hetchman (1993) found that 50% of ADHD samples continued to manifest symptoms into adulthood, while the other individuals in the clinical sample did not continue to meet the criteria for an ADHD diagnosis. Approximately 1.5 to 2.0% of the general adult population has ADHD symptoms (Hunt, 1997).

Although there is limited information regarding why symptoms remit (Biederman et al., 1996) there are 3 important factors that contribute to the persistence of ADHD symptoms. These factors include family history of ADHD (Farone & Biederman, 1994), psychosocial adversity (Biederman, Milberger, Farone, 1995), and patterns of psychiatric co morbidity (Biederman, Farone, Keenan, 1992). Children diagnosed with ADHD, and who exhibited aggression or conduct problems during youth, usually displayed a persistent pattern of ADHD into adolescence and young adulthood (Gittleman, Mannuzza, Shenker, 1985). ADHD frequently occurs with mood and anxiety disorders (Biederman et al., 1996) including bipolar disorder, major depression and anxiety. Children diagnosed with ADHD who did not display conduct problems, and were not aggressive had higher rates of remission (Barkley, 1991). Regarding treatments, there were no significant correlations between the severity of symptoms and the intensity of the

treatment. The best indicator of persistence of symptoms was the presence of a family history of ADHD. Those children whose parents had ADHD, and were diagnosed with ADHD, had a high rate of symptom persistence. The research indicates that there is no significant relationship between the persistence of ADHD symptoms and the age of onset. (Biederman et al., 1996).

### *ADHD and Academic Achievement*

Improving academic achievement is one of the most important objectives in the United States. Standardized tests and other methods of monitoring student's progress have been implemented throughout the states. However, children diagnosed with ADHD present with attention and/or behavioral difficulties that impact their academic performance. A study conducted by Sydney Zentall (1993), indicated that children diagnosed with ADHD obtain lower scores on standardized measures of math and reading achievement than their peers. There is a negative correlation between the severity of the behaviors displayed by the ADHD students and their academic achievement (Barry, Lyman, & King, 2002). Some of the behaviors found in ADHD children that impact their academic performance include: selective attention to novelty information in lessons, difficulties with extrapolating important information during lectures, and failure to provide detailed elaborated responses (Zentall). A study that focused on the differences between the academic performances of students diagnosed with ADHD-Predominately Inattentive type, as compared to the ADHD-Predominately Hyperactive-Impulsive Type was conducted. The results indicated that students with ADHD, Predominately Inattentive Type, tend to perform poorly on math tasks in contrast to students diagnosed with ADHD- Predominately Hyperactive- Impulsive Type (Marshall,

Hynd, Handwerk, & Hall, 1997). It was found that the inattention interfered with their ability to master abstract concepts in math.

### *Homework Completion*

Homework is defined as “tasks assigned to students by school teachers that, are meant to be carried out during non-school hours” (Cooper & Nye, 1994, p.471).

Homework serves as a connection between the school and the home and it affords an opportunity for parents to exert influence and offer assistance (Patton, 1994). During the 1980's, the National Reform Commissions was involved in examining the possible factors causing the perceived lower quality of American education. As a result, homework practices were found to be one of the factors that contributed to the problems with American education. Epstein, Polloway, Foley, and Patton (1993) found that teachers indicated non-attention, interdependence, lack of organization and motivation, and assignment difficulties as the primary reasons for the lack of homework completion by students.

The positive effects of homework include an improvement in memorization and understanding of the material, improvement in study skills, promotes learning outside of the classroom as well, promotes responsibility and independence for the student as it provides a way through which parents can be included within the school community (Cooper & Nye, 1994). Some of the perceived negative effects by the general population of homework include: a perception that if too much time is spent on homework; students will become bored; the amount of homework reduces the time available for leisure activities where a child can learn from their environment and community; parents may not understand the assignments and cause more confusion than help; cheating may occur.

children with less resources may have increased problems with completing their assignments (Cooper & Nye).

Research conducted on the effectiveness of homework indicated a positive correlation between homework completion and achievement. The correlation between grades and homework increases from elementary to high school (Truesdell & Abramson, 1992). The average student in high school who completed homework on a regular basis outperformed 69% of the students who did not have a regular homework routine. (Cooper & Nye, 1994).

Various factors contribute to homework completion (Bryan, & Sullivan-Burstein, 1998). Homework begins when the teacher presents the assignment in the classroom. The teacher's method of presentation may affect the way homework is completed. Other factors that contribute to homework completion include: individual student differences, home environment (an atmosphere that can be conducive or counterproductive for homework), and the leisure activities (sports and other types of after school activities) that may occupy the student's time for studying (Copper & Nye, 1994).

The amount of influence homework has upon a student's grade within a subject area varies. The results of a study conducted by Putnam (1993) indicate that in seventh and tenth grade content area classes, as much as 17 to 32 percent of the student's grade is based on homework. A study of current homework practices indicated that the types of homework most often assigned include practice, completion, preparation for exams, and extension (Roderique, Polloway., Cumblad, Epstein, Bursuck., 1994).

Adolescents diagnosed with ADHD often fail to finish their homework due to, disorganization, failure to sustain attention, and to not listening and not following

directions (Wender, 1995). Since homework accounts for approximately 17 to 32% of the junior high school and high school students grade (Putnam, 1993) it is a factor that can significantly affect the student's academic performance.

### *Strategies Teachers Have Implemented*

It was noted that teachers preferred homework strategies that are feasible, economical and effective (Louis & Dentler, 1988). Graphing of homework achievement was identified as the preferred strategy for improving homework completion.

The results of a more recent study indicated that teachers with more experience with ADHD students utilized more homework strategies (Curtis, Piescco, Hamilton, Moore, 2006). It was noted that the teachers with the greatest amount of experience with ADHD students were more accepting of strategies and treatments as long as they perceived that the suggestions were appropriate.

Currently there is a little research regarding children with ADHD and homework strategies; therefore the research for homework interventions included in this paper is based on studies done in regular education settings and with children diagnosed as learning disabled. Two studies on the use of homework strategies and the impact of homework completion on academic performance of students with and without a learning disability were conducted by Bryan and Sullivan-Burstein (1998) over the course of two years. The first study included a total of 11 elementary teachers (both regular and special education teachers) and 123 students from regular and special education. Some of the participating students had no homework problems, while others did. The three homework strategies were analyzed: (a) assigning real life assignments to the students, (b) using homework planners, and (c) graphing the amount of homework completion.

During the first year of the study, teachers implemented homework that applies to real life, and reinforcement for homework completion. In the second year, participants included ten of the eleven original teachers, and three additional teachers who chose to participate. The one hundred and twenty three students chosen to participate in the second study were selected by random sampling, and included some of the original participants. The teachers focused on using homework planners, and self-graphing of homework completion. Results indicated that the student's academic performance increased significantly and teachers preferred using self-graphing to track homework completion (Bryan & Sullivan- Burstein). The use of homework planners, increased the mean homework completion rate for learning disabled students both with and without homework related problems from 64 to 75 -83 percent respectively, for spelling , and 63-68 to 77-83 percent respectively, for math. The use of homework planners, increased the mean homework completion rate for regular education students with and without homework completion difficulties from 59 -91, to 65-91 percent respectively for spelling and from 61-91 to 61-93 percent respectively, for math. For the second study, since all of the interventions were introduced systematically, and no data was collected as to the effectiveness of each isolated intervention, the effectiveness of each separate intervention could not be assessed. In general, the results of the study indicate that teachers prefer strategies which are feasible, economical and valuable.

Homework completion was further studied by Salend and Garjria (1995). They examined what factors contributed to improving the homework completion rate in regular education classrooms. Based on their findings, the authors formulated the following guidelines for teachers when assigning homework. They found that the one of the

primary indicators for completion of homework was the perception the student had of the value of homework, and the value of the assignment. The authors indicated the importance of varying the amount and type of homework the students had to complete. In order to determine the amount of assigned homework the child should receive, the authors suggested that the teachers take into consideration the student's abilities and adjust the homework accordingly. In assigning the type of homework, the teachers should consider if the homework they are assigning will be completed, if the purpose of the homework is for proficiency or maintenance, and that new skills should never be taught through homework. Teachers should provide motivation for the completion of the homework. Classroom discussions regarding the importance of homework completion, evaluating the homework in class, providing praise and rewards, and the using contracts could motivate students. Peer mediated strategies such as peer tutoring, peer checking, and cooperative homework groups should be used (Salend & Garjria, 1995). The authors suggested establishing a set homework routine. The routines should include regular routines for assignment of homework, collection of the work, correcting and grading procedures, and the prompt return of homework assignments. In addition teacher explanation of the homework was cited as an important part of the homework routine.

The final strategy which the authors recommend for teachers to implement is the instruction of organizational strategies to students (Salend & Garjria, 1995) where students can receive instruction in learning and metacognitive strategies that serve to improve their homework skills. The use of metacognitive strategies serve to help the student learn the material. Types of parent involvement in regard to homework are discussed and the authors suggested, depending upon the background of the parents, a



homework monitoring role as the primary role for the parents as indicated by Salend, and Garjria, (1995) and Epstein et. al., (1993).

### *Purpose of Current Study*

Few studies if any have investigated the utility of homework strategies with children diagnosed with ADHD. The purpose of this study was to investigate what homework strategies are currently used by elementary, middle and high school teachers in Miami-Dade County. The first hypothesis is that high school teachers utilized the same homework strategies as elementary and middle school teachers. A second hypothesis was that teachers with more experience with children identified as ADHD utilized more homework strategies than teachers with less experience. Finally, a third hypothesis was that as the child's age increases, the number of parent assisted homework strategies will decrease and the number of self monitoring homework strategies will increase.

### Method

A survey was developed based on homework strategies cited in Bryan and Sullivan-Burstein, (1998), and Salend and Garjria, (1995). A pilot study was conducted in order to assure that the questions on the survey were thorough and clearly stated. Five teachers (elementary, middle and high school) completed and reviewed the survey and provided feedback on readability and appropriateness of survey questions

All of the elementary, middle and high schools within Miami-Dade County, and Catholic schools within the Archdiocese of Miami were included as possible participating schools. The random number table was used to assign a number to each school, the numbers were placed in a box, and twenty numbers representing schools were picked out

of the box. For the selected schools, a letter requesting permission to conduct the survey was sent to the principal (See Appendix B). After the letters were sent to the schools, the principals were contacted and permission to distribute the surveys was obtained.

Principals or designee placed an envelope containing the survey inside of each teacher's mailbox. These measures were taken to ensure the anonymity of the teachers completing the surveys. In the letter enclosed with each survey, the teachers were given instructions on how to complete the survey, were informed that if they return the completed survey, they have agreed to participate in the research, and to return the survey by placing the completed surveys in box located in the teachers' lounge marked "ADHD Research". (Please see Appendix C for a copy of the letter to the teachers). The researcher collected completed surveys once a week from each participating school. These procedures were repeated until 120 useable surveys were collected.

### *Participants*

Two hundred and fifty surveys were distributed among the participating schools. One hundred and thirty six were returned, from which 120 were useable. This represents approximately a 54% return rate. Based on the responses to the demographic questions, the final sample consisted of 82 public school teachers and 58 private school teachers with a group means of 25.07 ADHD students taught and 11.37 years of teaching experience (see Table 1 for demographic characteristics).

Table 1

*Demographic Characteristics of Participants (N=120)*

Characteristic	N	%
<b>Ethnicity</b>		
African American	19	15.8
Hispanic	59	49.2
White	35	29.2
Canadian/English	1	0.8
U.S.	1	0.8
Asian	1	0.8
Missing	4	3.4
<b>Gender</b>		
Male	48	40.0
Female	71	59.2
Missing	1	0.8
<b>Degree</b>		
B.A.	22	18.3
B.S.	46	38.3
Master	42	35.0

(Table 1 continues)

(Table 1 continued)

Characteristic	N	%
Ph.D.	2	2.5
Psy.D.	2	1.7
Missing	2	0.9

After each weekly collection, the responses to the surveys were coded. A chi-square analysis was used to analyze the frequencies of endorsement for each variable by grade level. An ANOVA was performed in order to analyze the differences in the number of endorsements by the number of ADHD students taught and the number of years taught.

### Results

A chi-square analysis was computed to test hypothesis 1 that high school teachers utilized the same homework strategies as elementary and middle school teachers. There was no significant difference between the groups ( $\alpha = .05$ ). However, when the alpha level was increased to .10, the groups differed on five items. In addition, because 23 analyses were conducted, a Bonferroni correction was utilized. Therefore, an alpha level of  $p = .004$  ( $10/23$ ) was used for each individual analysis. Table 2 presents the percentage of teacher endorsement per strategy by grade level for statistically significant ( $p = <.004$ ) items. The individual strategies are listed in Appendix D.

Table 2

*Percentage of Endorsement of Strategy Use by Teachers at Different Grade Levels*

Item #	Strategy	Elementary	Middle	High	<i>p</i> value
16d	Returning results	92.5	61.5 <sup>a</sup>	90.0	.000
17	Strategies to complete	97.5	100.0	78.9 <sup>a</sup>	.001
18	Organizational Skills	97.5	100	82.5	.003
19a	Parental Suggestions	95.0	82.5	50.0	.000
19b	Praise and rewards	92.5	55.0 <sup>b</sup>	20.0	.000

<sup>a</sup> this percentage is different from the other two which do not differ from each other

<sup>b</sup> all percentages differ from one another

A significant difference was found between the number of endorsements for establishing a homework routine by strategy 16d, having a set pattern for returning the results of homework between elementary and middle school levels ( $p = <.001$ ) and the middle and high school levels ( $p = .003$ ). A significant difference was noted in the number of teacher endorsements between middle school and high school levels for strategy 17, teaching strategies which will help the student complete their homework ( $p = .001$ ). In addition a significant difference was in the number of endorsements between elementary and middle school levels was noted for strategy 18, teaching organizational skills ( $p = .003$ ). A significant difference in the number of endorsements was noted between high school teachers in comparison to elementary and middle school

teachers for strategy 19a, giving parents recommendations to help their children with their homework ( $p < .001$ ). There was a significant difference between teacher endorsements between all grade levels for strategy 19b, teaching parents the effective use of praise and rewards ( $p < .001$ )

The second hypothesis was that teachers with more experience with children identified as ADHD utilized more strategies than teachers with less experience. Two analyses were conducted. The first one-way ANOVA was conducted using the number of strategies used “often” and “sometimes” as the dependent variable and teacher’s experience as the independent variable. For comparison purposes, teachers were grouped by the number of ADHD students taught. Teachers who had taught between 1 and 14 ADHD students were the least experienced. Teachers who had taught 15 to 24 students were the more experienced. Teachers who had taught 25 or more ADHD students were considered the most experienced. No significant difference among the three groups was found,  $F(2,117) = 2.705, p = .07$ .

For the second analysis, experience was defined as the number of students taught combined with the number of years teaching. Teachers were divided into groups based on their years of teaching experience. A weighted score was then calculated that additively combined the number of years of teaching and the number of ADHD students taught. The number of strategies used “often” and “sometimes” were used as the dependent variable. The hypothesis was that teachers with more experience with ADHD students and more years of teaching experience would endorse more homework strategies than teachers with less experience. A one-way ANOVA was conducted and no significant difference was found among the groups  $F(8,111) = 1.65, p = .11$ .

The third hypothesis was that as the student's age increases, the number of parent assisted strategies decreases and the number of strategies that are the student's responsibility increases. A chi-square analysis with the strategies as the dependent variables and the teacher level as the independent variable was computed. For the first analysis, the number of parent assisted strategies used "often" and "sometimes" represented the dependent variable. Table 3 indicates the difference in number of teacher endorsements of parent assisted strategies noted at all grade levels.

Table 3

*Percentage of "Often" and "Sometimes" Endorsements of Strategies with Parental Involvement*

Item #	Strategy	Elementary	Middle	High	$\chi^2$	<i>p</i> value
11	HW Planner w/parent	67.5	65.0	61.5	00.31	.860
19a	Parent recommendations	95.0	82.5	50.0 <sup>a</sup>	23.5	<.001
19b	Praise and rewards	92.5	55.0 <sup>b</sup>	20.0	42.6	<.001
19c	Expectations	97.4	87.2	82.5	4.7	.096

<sup>a</sup> significant difference  $p < .004$

<sup>b</sup> significant difference between high school, middle school and elementary levels

Note: Homework strategies are fully described in Appendix D.

At the high school level, there was a significant difference in the number of endorsements for providing recommendations to parents for helping their child (19 a), and instructing parents on the effective use of praise and rewards (19 b). In addition,

there was a significant difference in the number of endorsements for the use of praise and rewards between all the levels (19 b). No significant difference was found between the number of endorsements within the different grade levels for homework planner which include parental communication (11) and for telling parents the expectations for class (19 c).

For the second analysis, a chi-square analysis was computed using the number of student independent strategies used “often” and “sometimes” was used as the dependent variable. The grade level was the independent variable. Table 4 represents the results.

Table 4

*Percent of Endorsement of “Often” and “Sometimes” Endorsements of Student Independent Strategies*

Item #	Strategy	Elementary	Middle	High	$\chi^2$	<i>p</i> value
10	Planners	90.0	97.4	82.5	4.86	.088
12	Graphing	12.8	10.0	<1.0	5.16	.076
14a	Review HW	95.0	92.5	90.0	.72	.700
14b	Reinforcers	95.0	77.5	74.4	6.77	.034
14c	Contracts	17.5	12.8	10.3	.91	.630
17	Strategies	97.5	100.0	78.9	14.13	.001
18	Organization	97.5	100.0	82.5	11.52	.003

a significant difference  $p < .004$

Note: Homework strategies are fully described in appendix D



There was a significant difference in the number of endorsements for teaching homework strategies (17) and organizational skills (18) at the high school level. No significant difference was found between the number of endorsements within the different grade levels for suggesting that students use homework planners (10), having students chart the amount of completed homework on a graph (12), motivating students by reviewing the homework (14 a), providing social or tangible reinforcers (14 b), and homework contracts (14 c).

### Discussion

The purpose of this study was to investigate what homework strategies are currently used by elementary, middle and high school teachers. It was hypothesized that high school teachers utilized the same homework strategies as elementary and middle school teachers. A second hypothesis was that teachers who had more experience with children identified as ADHD utilized more homework strategies than teachers with less experience. Finally, a third hypothesis is that as the child's age increases, the number of parent assisted homework strategies will decrease and the number of self monitoring homework strategies will increase.

The first hypothesis, that teachers in high school would endorse similar strategies to those in elementary and middle school, was only partially supported. Significant differences were noted in the number of endorsements by grade level for establishing a pattern for returning the results of graded homework, teaching students strategies which will help them complete their homework, and in teaching organizational skills. In addition, significant differences in endorsements by grade level were noted in strategies

regarding parental involvement including providing recommendations for helping their child; and instructing parents on the effective use of praise and rewards. The results are supported by the work of Salend and Garjria (1995) who suggested that effective homework strategies include: varying amount and type of homework, using peer mediated strategies, following set routines, teaching organizational skills.

For the second hypothesis it was predicted that teachers with more experience with ADHD students would endorse more homework strategies. In a previous study conducted by Curtis, Pescco, Hamilton, and Moore, (2006) it was found that teachers with the greatest amount of experience with ADHD students were more accepting of strategies and treatments as long as they perceived that the suggestions are appropriate (Curtis et.al., 2006). The first analysis compared the teachers by the number of ADHD students taught. The result indicated that the hypothesis was not supported. A second analysis was done which combined the amount of years taught with the number of ADHD students taught. The results of this second analysis indicated that the hypothesis was not supported. One possible reason for the lack of differences may be that many of the less experienced teachers have had more education regarding strategies and are currently implementing strategies which have been proven as effective by more experienced teachers. This practice can lead to similar endorsements causing the number of often and sometimes endorsed strategies to be similar.

Homework is considered to be a means to promote students responsibility and independence (Cooper & Nye, 1994). It was predicted that as student age increases, the

number of parent assisted strategies will decrease, and the student's responsibility will increase. These results indicate that teachers in the high school level expect the students to be more independent, and to already understand and apply strategies that will help them complete their work. Students with ADHD function better within an organized system, however the results indicate that as the grade levels progress, there is less structure provided by the teacher and more responsibility expected from the student. Early teaching of organizational strategies would be beneficial to students with ADHD. It was predicted that as student age increases, the number of parent assisted strategies will decrease, and the student's responsibility will increase.

The present study identified effective strategies for helping ADHD diagnosed students with homework completion by grade levels. Further research may want to focus on the grade point impact of using these strategies. In addition, it may be useful to identify the effectiveness of these strategies on ADHD diagnosed students who have additional impairments such as speech and language, or learning disabilities.

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## Appendix A

**ADHD Subtypes**

There are three subtypes of ADHD. The subtypes for ADHD include Attention-Deficit/ Hyperactivity Disorder, Combined Type, Attention-Deficit/ Hyperactivity Disorder, Predominately Inattentive, and Attention-Deficit Hyperactivity Disorder, Predominately Hyperactive- Impulsive Type (DSM -IV-TR, 2000, p.92-93). The DSM – IV- TR (2000) cites that a diagnosis of Attention Deficit Disorder, Predominately Inattentive Type requires 6 of the following characteristics:

- (a) a general failure to pay close attention to details in work resulting in careless mistakes,
- (b) difficulty with maintaining attention on tasks or during play,
- (c) a general appearance of not listening when spoken to
- (d) a lack of follow through for chores and duties,
- (e) difficulty organizing tasks and activities,
- (f) avoids participating in tasks which require sustained mental effort,
- (g) loses things easily,
- (h) is distracted easily

In order to meet the criteria for the Attention Deficit Disorder, Predominately Hyperactive- Impulsive Type, 6 of the following characteristics must be present. According to the DSM IV TR, these characteristics are:

- (a) often moving about in their seat
- (b) leaving seat often during activities in the classroom or in other situations where sitting is required,
- (c) running and climbing about in situations where it is not appropriate,
- (d) demonstrating problems with participating in leisure activities quietly,
- (e) often appearing to be on the go,
- (f) excessive talking, blurting out answers,
- (g) and not being able to wait for turns, and interrupting on others.

In order for a child to meet the criteria for Attention Deficit/ Hyperactivity Disorder, Combined Type they have to meet the criteria for Predominately Inattentive and Hyperactive- Impulsive Type. In the cases of adolescents and adults, the behaviors may manifest in the forms of:

- a) impatience
- b) feelings of restlessness
- c) difficulty engaging in activities
- d) problems with delaying responses
- e) frequently interrupting and intruding upon others
- f) failure to listen to others
- g) initiating conversations where it is not appropriate.

## Appendix B

**Principal's Letter**

Dear Principal,

Your school has been selected to participate in a research project, and your permission to conduct this project is requested. The research is being conducted by Margaret Puebla a graduate student in the School Psychology Program at Barry University. This research project is one component of the requirements for completion of the Specialist degree. The research topic is homework strategies that are helpful for students with ADHD. The focus of the research is to determine what homework strategies teachers are using with children displaying ADHD behaviors

Research in the area of ADHD has focused primarily on the problematic behaviors and drug therapy. However, few researchers have focused on the topic of homework. Your participation in this study will help expand the research on homework strategies for ADHD students. It will also provide an actual account of which strategies are more commonly used in the classrooms today, and possibly suggest new strategies.

Your role as the Principal, if you choose to participate, will be to place a survey inside each teacher's mailbox. The purpose of this is to protect the anonymity of the teachers. The teacher's participation in this research project is completely voluntary. Neither names nor identifying information will be requested. Any information provided by the teachers will be held in confidence to the extent permitted by law. There are no known risks for your involvement in this study. Although there is no direct benefit to you, your school's participation in this study will help our understanding of how to help children with ADHD, in the area of homework. The teachers who participate will complete the enclosed short survey and return it to the box marked "ADHD Research" in the teachers' lounge. The surveys should take approximately 10 minutes to complete, and will be collected on a weekly basis by the researcher.

If you have any questions regarding the study or your participation in the study, you may contact me or my supervisor through the Barry University Psychology Department.

Thank you for your participation.

<u>Margaret Puebla, M.S.</u>	<u>(305)899-3270</u>	<u>Dr. Agnes Shine, PhD.</u>	<u>(305)899-3270</u>
<i>Researcher</i>	<i>Phone</i>	<i>Supervisor</i>	<i>Phone</i>

Ms. Avril Brenner (305)899-3020  
*Institutional Review Board*

## Appendix C

**Cover Letter**

Dear Teacher,

Your participation in a research project is requested. The title of the research is "Homework Interventions for Children with ADHD: Teacher Choices in Elementary School, Middle School and High School". The research is being conducted by Margaret Puebla, a graduate student in the School Psychology Program at Barry University. Completion of this research project is one of the requirements for graduation.

In general, research in the area of ADHD has focused primarily on problematic behaviors and the use of drug therapy, with few researchers focusing on the topic of homework strategies to help improve academic performance. Your participation in this study may help expand the research on homework strategies for students with ADHD, and similar behaviors. It may also provide an account of which strategies are commonly being used in the classrooms today, and possibly suggest new strategies. Enclosed is a survey, and a list of the behaviors typically seen in children with ADHD. The purpose of the list is to help you better understand the behaviors that children with ADHD tend to display. We anticipate 120 teachers will be surveyed.

Your participation in this research project, by completing a 10 minute survey, is completely voluntary. Neither names nor identifying information will be requested. Any information provided by you will be held in confidence to the extent permitted by law. There are no known risks for your involvement in this study. Although there is no direct benefit to you, your participation in this study may help our understanding of helpful homework strategies for children with ADHD like behaviors. If you choose to participate, please complete the enclosed short survey and place the completed survey in the box marked "ADHD Research" in the teachers' lounge. The surveys will be collected weekly. Your returned survey indicates consent to use the information provided. The published results of the study will refer to group averages, and neither names nor school names will be used. Data will be kept in a locked file in the researcher's office for 5 years following the study and will be destroyed after that time has elapsed. By returning the survey, you give permission to use the data.

If you have any questions regarding the study or your participation in the study, you may contact me or my supervisor through the Barry University Department of Psychology.

Thank you for your participation.

<u>Margaret Puebla, M.S.</u>	<u>(305)899-3270</u>	<u>Dr. Agnes Shine, PhD.</u>	<u>(305)899-3270</u>
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## Appendix D

## Teacher Survey

### Homework Interventions for Students with ADHD and Similar Behaviors

The purpose of the following survey is to rate various homework strategies which can be used to help children who have ADHD, or display behaviors similar to those described as ADHD.

Demographic information: Please respond to following questions:

Number of years teaching in: Regular Education Setting \_\_\_\_\_ Public School \_\_\_\_\_  
 Special Ed Setting \_\_\_\_\_ Private School \_\_\_\_\_  
 High School Setting \_\_\_\_\_  
 Junior High School Setting \_\_\_\_\_  
 Elementary School Setting \_\_\_\_\_

\* Total years teaching \_\_\_\_\_

Current teaching assignment is in (Please check one) Elementary School \_\_\_\_\_

Middle School \_\_\_\_\_ High School \_\_\_\_\_

Number of hours per day spent teaching in the following settings

Regular Ed: \_\_\_\_\_ Special Ed: \_\_\_\_\_

Circle one : Male      Female

Approximately the number of students taught who displayed behaviors similar to those of ADHD or are diagnosed as ADHD \_\_\_\_\_ (please state as a number, not a percent nor as a fraction)

Degree (circle only one which corresponds to the highest degree attained):

B.A      B.S.      Master      Specialist      Ph.D.      PsyD.

Ethnicity:

Number of workshops, conferences, and/ or training in ADHD \_\_\_\_\_

If you use the strategy often, circle A.

If you use the strategy sometimes, circle B

If you use the strategy rarely, circle C

If you never use the strategy, circle D

- A B C D     1. Adapt assignments to real life and provide reinforcement for the Completion of assignments.
- A B C D     2. Suggest that the student use homework planners for organizing The assignments.
- A B C D     3. Suggest that the student use homework planners for organizing the Assignments and include communication with the parents.
- A B C D     4. Have the students chart their completed homework on a graph.
5. Varying the amount of homework by any of the following:
- A B C D             a. reducing length of homework
- A B C D             b. extending the timeline for due date of homework
- A B C D             c. modifying how the student has to present their homework
- A B C D             d. allowing alternative ways ( Orally, or other ways) for the Student's responses.
6. Motivating students to complete their homework by emphasizing it's importance through any of the following
- A B C D             a. review of completed homework.
- A B C D             b. providing social or tangible reinforcers
- A B C D             c. providing homework contracts.
7. Utilizing peer mediated strategies such as the following:
- A B C D             a. peer checking
- A B C D             b. peer tutoring
- A B C D             c. cooperative homework groups
8. Establishing and following a homework routine by having a set

pattern for :

- A B C D            a. assigning homework (i.e. at a specific time in class or placed in a specific area)
- A B C D            b. collecting homework
- A B C D            c. grading homework
- A B C D            d. returning the results of the homework
- A B C D    9. Teaching strategies which will help the student complete the homework.
- A B C D    10. Teaching organizational skills.
- 11. Parent involvement in any of the following areas
  - A B C D            a. providing parents with recommendations for helping their child
  - A B C D            b. Instructing the parents on the effective use of praise and rewards
  - A B C D            c. generally explaining the expectations for homework completion

Please list three strategies you have used, which have been most effective in your classroom.

1:

2:

3:

Please list three strategies which you previously implemented and were ineffective.

1.

2.

3.