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ABSTRACT

This thesis surveyed 160 teachers, 61 counselors, and 82 principals from Kansas public schools to determine their knowledge of attention deficit disorder in school-aged children. The independent variables investigated were position, extent of inservice education, gender, size of the participant's school, years of experience in education, and extent of formal education. Results indicated no statistically significant associations between any independent variables and scores on the Knowledge of Attention Deficit Disorder questionnaire. A literature review introducing the thesis discusses descriptors of attention deficit hyperactivity disorder; incidence; legal statutes; the role of teachers, counselors, principals, and other school personnel in identification; the role of inservice education; and consequences of lack of identification. Copies of a demographic questionnaire and the attention deficit disorder questionnaire are appended, along with various administrative materials. (Contains 25 references.) (JDD)

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EDUCATORS' KNOWLEDGE OF  
ATTENTION DEFICIT  
DISORDER

being

A Thesis Presented to the Graduate Faculty  
of the Fort Hays State University in  
Partial Fulfillment of the Requirements for  
the Degree of Master of Science

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## Abstract

The purpose of the researcher was to investigate teachers', counselors', and principals' knowledge of Attention Deficit Disorder in school-aged children. The independent variables investigated were position, amount of inservice attended, gender, size of the participant's school, years of experience in education, and amount of formal education. The dependent variable was scores from the Knowledge of Attention Deficit Disorder Questionnaire. The sample of 303 consisted of 160 teachers, 61 counselors, and 82 principals (91 males, 212 females) from Kansas public school districts. Five composite null hypotheses were tested employing three-way analysis of variance (general linear model) and one composite null hypothesis was tested using a one-way analysis of variance (general linear model). A total of 20 comparisons were made plus 16 recurring. Of the 20 comparisons, 6 were for main effects and 14 were for interactions. Of the 6 main effects, none were statistically significant at the .05 level. Of the 14 interactions, none were statistically significant at the .05 level. The results indicated no statistically significant associations between any independent variables and the dependent variable. The groups appeared to come from a common population pertaining to knowledge of Attention Deficit Disorder.

The results of the present study appeared to support

the following generalizations:

1. no association between position (teacher, counselor, principal) and knowledge of Attention Deficit Disorder;
2. no association between amount of inservice education attended and knowledge of Attention Deficit Disorder;
3. no association between gender and knowledge of Attention Deficit Disorder;
4. no association between size of the participant's school and knowledge of Attention Deficit Disorder;
5. no association between years of experience in education and knowledge of Attention Deficit Disorder; and
6. no association between amount of formal education and knowledge of Attention Deficit Disorder.

x

## Introduction

### Descriptors of Attention Deficit Hyperactivity Disorder

Writers addressing Attention Deficit Hyperactivity Disorder (ADHD) have presented descriptions with some variations. According to Goldstein and Goldstein (1990, p. 18), "ADHD is a disorder in which the severity of the presenting problems results from an interaction of the child with the demands made upon the child by the environment. A multitude of environmental variables can influence ...behavior."

Barkley (1991, p. 1) stated the following:

Attention-deficit Hyperactivity Disorder (ADHD) is the most recent term for a specific developmental disorder of both children and adults that is comprised of deficits in sustained attention, impulse control, and the regulation of activity level to situational demands. This disorder has had numerous different labels over the past century, including hyperkinetic reaction of childhood, hyperactivity or hyperactive child syndrome, minimal brain dysfunction, and Attention Deficit Disorder (with or without Hyperactivity).

The American Psychiatric Association's (1987) Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised, (DSM-III-R) cited 14 characteristics for ADHD and at least 8 of these are required plus onset of

symptoms before age 7 to diagnose ADHD. The following characteristics were cited (DSMIII-R, pp. 52-53):

1. often fidgets with hands or feet or squirms in seat...
2. has difficulty remaining seated when required to do so
3. is easily distracted by extraneous stimuli
4. has difficulty awaiting turn in games or group situations
5. often blurts out answers to questions before they have been completed
6. has difficulty following through on instructions from others (not due to oppositional behavior or failure of comprehension),...
7. has difficulty sustaining attention in tasks or play activities
8. often shifts from one uncompleted activity to another
9. has difficulty playing quietly
10. often talks excessively
11. often interrupts or intrudes on others,...
12. often does not seem to listen to what is being said to him or her
13. often loses things necessary for tasks or activities at school or at home...
14. Often engages in physically dangerous activities

without considering possible consequences...

Barkley's (1991) description of the major features of ADHD provided a detailed picture of the characteristics of the disorder. The ADHD child's behavior manifests the following as cited by Barkley:

1. Poor sustained attention or persistence of effort to tasks, particularly those which are relatively tedious and protracted...
2. Impaired impulse control or delay of gratification...
3. Excessive task-irrelevant activity or activity poorly regulated to situational demands...excessively fidgety, restless, and "on the go"....
4. Deficient rule-following...frequently have difficulty following through on instructions or assignments...
5. Greater than normal variability during task performance...show wide swings...in the quality, accuracy, and speed with which they perform assigned work....(p.1)

#### Legal Statutes Pertaining to Attention Deficit Hyperactivity Disorder

According to Lerner and Lerner (1991), section 504 of the Rehabilitation Act of 1973 required school districts to make accommodations to meet the specific needs of the child (age 3-21) even if the child did not qualify for special

education. This act forced schools to make adjustments in their educational programs to meet the needs of children identified as having Attention Deficit Disorder (ADD). State laws only marginally define the learning needs for these students. Federal law supercedes state law by saying that even though the child may not qualify for special education by state requirements, schools may still have to make accommodations to meet the individual's needs. Therefore, in order to address the needs of all students, it is important for educators to provide more individualization for student's who manifest ADD behavioral characteristics. (Lerner & Lerner, 1991)

Teachers' Role in the Identification of Attention Deficit  
Hyperactivity Disorder

Traditionally, teachers have been the primary referral source of school-age children for evaluation for Attention Deficit Disorder (Brown, 1986). Teachers have the opportunity to observe the behaviors of children and to compare this behavior to that of their peers. Teachers' knowledge and awareness of ADHD was an important element in the diagnostic process. The results of a study by Brown (1986) depicted the importance of teachers' ratings in the diagnosis of ADD in children and emphasized their place in the psychological evaluation. Brown stated that, "to identify ADD children, it certainly would seem useful for the practicing psychologist to elicit, from teachers,

observations of behavioral and conduct disturbances as well as information regarding the child's capacity to sustain attention" (p. 98).

The difficulty in the appraisal of ADHD lies in the fact that all children display the diagnostic criterion behaviors to some extent at various times in their lives (Martin, 1992). Meents (1989) stated that:

Germane to the belief system of the academic community, the etiology of school problems is usually presumed to be attributable to a deficit in the child, and not in the educational system itself. In evaluating the progress of troubled learners, however, the idea that something is wrong with the student takes precedence over possible inadequacies in the instruction. (p. 172)

Therefore, a number of environmental variables may produce provocative behavior in children who then receive the ADHD label inappropriately. Such phenomenon highlight the need for education for those evaluating a child's behavior.

Brown (1986) used the Abbreviated Conners Rating Scale (ACRS) ratings from 158 children involved in an ADD treatment project. Of the 158 subjects, 88 were diagnosed ADHD, 58 ADD, and 12 were placed in a group of uncertain diagnostic type. Each child's teacher completed the ACRS and were uninformed as to the purposes and nature of the study. The teacher ratings were compared with the ratings of two clinical staff members' ratings. The results

indicated that the teachers correctly classified 82.43% as ADD with 17.57% misclassified, and 80.55% were correctly classified ADHD with 19.45% misclassified.

Abikoff, Courtney, Pelham, and Koplewicz (1993) examined how accurately 139 elementary teachers (regular and special education) in the New York public schools rated children's behaviors using rating questionnaires. The teachers viewed two videotapes of a regular fourth grade classroom with a child actor depicting ADHD, Oppositional Defiant Disorder (ODD), or normal behavior. The teachers were not aware that the children were actors following scripts. The teachers evaluated the behaviors exhibited on the tapes. A 73-item questionnaire with a 4-point Likert scale was employed. Results indicated a unidirectional bias in teacher ratings. Regular and special education teachers rated ADHD behaviors with 63% accuracy, but when behaviors associated with ODD were present, 40% rated the ODD child as meeting ADHD and ODD criteria. The results of this research supported the idea that in the appraisal of ADHD, teachers' ratings should not be relied on too heavily. Teachers' ratings should only be one modality in a multidimensional evaluation (Abikoff, et al).

Goldstein and Goldstein (1990) emphasized that teachers must be able to distinguish between noncompliant and incompetent behaviors. "The effects that specific behaviors such as negative reinforcement may have, secondarily, upon

this population of children must also be understood" (p. 312). Thus, teachers must possess a basic knowledge of ADD to provide the appropriate learning atmosphere for these students (Bowley & Walther, 1992).

Büchhoff (1990) addressed the issue of traditional teacher training programs' lack of preparation of elementary education majors concerning ADD. She surmised that only the field of exceptional education dealt with this topic, even though most ADD children were placed in regular classrooms.

Hawkins, Martin, Blanchard, and Brady (1991) investigated teachers' perceptions about their professional training related to assessment and teaching children with ADD. The 115 subjects were teachers and psychological service providers selected randomly from 15 graduate level classes in the College of Education. All participants had prior teacher certification and were currently employed in education. All 115 completed a survey (22 items) which tapped the following information: demographic data, perceptions of ADHD, specific training pertaining to ADHD, medication needs and uses, and interventions for ADHD. The results of this study indicated that 85% of those surveyed had taught a child diagnosed with ADD, but the majority (61%) had received no specific training for this. Of the 39% who had received training to work with ADD children, 33% had attended inservice, 27% coursework, and 24% workshops. The researchers included 3 questions pertaining to each of

the following--characteristics of ADD, teacher training, and interventions used--and 4 questions dealing with knowledge of medications and their uses. No significant associations were found among item responses, and the independent variables (gender, position, and years of experience). The results from a study by Brown (1986) supported that teacher input was important in the diagnosis of ADD. Hawkins, et al (1991) reported that most classroom teachers had not received training in effective assessment methods for ADD children. Yet, if teachers are to meet the needs of the individual children with whom they work, all need training in these areas, since most will encounter students with ADD during their career. According to Hawkins, et al, teachers must be taught and provided time to practice strategies which adapt instruction. These techniques will prove beneficial to all students, not just those with ADD.

#### Counselors' Role in the Identification of Attention Deficit Hyperactivity Disorder

Lavin (1991) discussed the role of the school counselor in working with ADHD children as being a coordinator/consultant responsible for disseminating knowledge of ADD and coordinating the school and home-based interventions. "The counselor should be aware of those successful nonmedical interventions that can be recommended to parents, teachers, and professionals involved with the child's education" (p. 118).

Bowley and Walther (1992) also addressed the role of the elementary school counselor in working with ADD children. They maintained that the counselor needs to become an information resource for teachers and other educators until colleges make knowledge of ADD a part of their education curriculum. The counselor also can help collect information for diagnostic purposes and medical referrals; serve as a link between the school, family, doctor, and psychologist; and assist parents in finding resources in the community.

#### Principals' Role in the Identification of Attention Deficit Hyperactivity Disorder

Essex and Schifani (1992) maintained that school principals need to understand what ADD is to avert improper evaluation and placement of students. The authors stressed the principal's role in leadership developing policies, procedures, and interventions to meet the ADD students' educational needs.

#### The Role of School Personnel in the Identification of Attention Deficit Hyperactivity Disorder

Meents (1989, p. 171) concluded:

...the way in which children are identified and treated may cause justifiable concern...When a high percentage of students are labeled ADD each year, we must question the appropriateness of the identifications being made, just as we should with those students being referred

and placed in any categorical program...As educators, we are aware of school personnel making decisions about individual children that are likely to affect their lives for a very long time.

Messick (1984, p. 5) stated that:

...not only is an assessment of the causes of learning failure deemed incomplete without a systematic examination of the teaching and learning environment, but failures of the educational system should be discounted first, lest they be interpreted invalidly as failures of the child.

#### Attention Deficit Hyperactivity Disorder and Inservice

##### Education

A report to the Iowa State Department of Education by the Attention Deficit Disorder Study Group of the Mountain Plains Regional Resource Center (1991) was the culmination of the 1990-91 year's study of the issues surrounding ADD and how the state of Iowa was meeting the educational needs of these students. The report did not include information about individual studies which led them to make the recommendations they arrived at. The following recommendations were made:

1. the Iowa Department of Education needs to accept the leadership role in establishing the expectations that the school systems meet the educational needs of ADD students;

2. require that all school personnel receive preservice training concerning ADD;
3. make ADD information a required component for license renewal for all school personnel;
4. include ADD information in their requirements for licensure and certification for health and mental health providers;
5. form an Advisory Committee to oversee the implementation of the above mentioned recommendations; and
6. to establish comprehensive support structures for schools and families by tapping other state level agencies to help provide these services.

A report to the Texas legislature (1992) emphasized the importance of training in ADHD for school personnel. Teachers play a role in assessment and generally are responsible for implementing classroom strategies; therefore, they need, "a general awareness of ADHD, basic information about identification and assessment, and knowledge of accepted techniques for intervention" (p. 24). Counselors often serve as consultants to teachers and must possess a greater knowledge of the disorder as they are often involved in assessment, intervention, and deal with the emotional and social difficulties of the child. They also serve as the liason between the family and school. The authors of the report stressed the need for inservice for instructional personnel, as well as ADD education at the

university level for teacher, administrator, and consultant (counselor) training programs.

In a report of the Council for Exceptional Children's Task Force on children with ADD (1992), a positive educational environment was described as one in which the teacher possesses the skills and knowledge required to adjust the curriculum to meet the individual's needs; provides appropriate consequences for behavior; and displays a caring, supportive attitude towards the child. However, the task force recognized that many schools were not providing positive learning environments for children with ADD due to lack of resources and appropriate education needed to do the job. The authors further stressed that administrators played a vital role in creating a positive educational climate by the distribution of resources, allocating time for collaboration between educators, and providing staff continuing education. "Effective professional preparation and staff development programs for the training of educators will help teachers develop realistic social and academic expectations for the child...and reduce inappropriate punishment of children for 'non-compliance'" (p. 21).

#### Incidence of Attention Deficit Hyperactivity Disorder

Barkley (1990) indicated that ADHD was one of the most common reasons children are referred for mental health services. Approximately 3 to 5 percent of children have

ADHD and it occurs in boys 3 times as often as in girls. On the average, every school classroom in the country will have at least 1 ADHD child (Martin, 1992).

Martin (1992) explained that most ADHD children were identified after entering school because the classroom environment requires the child to "sit still, attend, listen, obey, inhibit impulsive behavior, cooperate, organize actions, and be pleasant with other children" (p.28). This inability to restrain inappropriate behavior can create a large amount of distress for the ADHD child and his/her family.

Consequences of Lack of Identification of Attention Deficit  
Disordered Children

Lavin (1991) stated the following:

Our failure to provide the educational and psychosocial interventions needed to help ADHD children is, ... largely responsible for their academic, behavioral, and emotional difficulties. Simply medicating or leaving ADHD children in the regular classroom without assistance is detrimental to them and to the community over the long run. (p. 116)

When educators have a poor understanding of the causes, manifestation, and outcome of ADHD, as well as misconceptions about the treatment and appropriate interventions, the impact on the child is great (Earkley, 1990). According to Bowley and Walther (1992), "For many

attention deficit children who are left unidentified, the cumulative effects of low self-esteem, chronic school failure, and inadequate social skills lead to adolescent antisocial behavior, alcohol and drug abuse, dropouts, and even suicide" (p. 39). Barkley (1990) stressed that the first step in intervention on the ADD child's behalf was to provide information to educators about ADHD.

At a seminar at the Menninger Clinic in Topeka, KS concerning ADHD in adults and adolescents, Murphy (1994) indicated that individuals with ADD run a 40% risk for associated disorders co-morbid with ADD--especially Oppositional Defiant Disorder (40%) and Conduct Disorder (25%). Individuals with ADHD also are at risk for secondary behavioral problems--anxiety disorder (30-50%) and major depression (10-30%), aggression, and 50% or more will have social skill deficits. Most ADD adolescents experience academic underachievement, 30 to 50% have been retained, run a greater chance of dropping out of high school, and are not as apt to go on to college (Anastopoulos, 1994).

Silver (cited in Lerner & Lerner, 1991) indicated that 15-20% of learning disabled children and adults will also have ADD. Bowley and Walther (1992) stated that:

because the education community has been slow to understand or acknowledge the implications of ADD and ADHD, parents have been frustrated in their attempts to obtain an education appropriate to the unique needs of

their attention deficit children. Although many ADD and ADHD children also qualify for special education programs, their qualifications are based on specific learning disabilities rather than on an attention deficit. (p. 41)

### Summary

The literature reviewed indicated the complexity of Attention Deficit Disorder and the discrepancies in identification of this disorder. The role of educators in the identification of individuals with ADD has been emphasized as well as their inadequate preparation pertaining to this disorder. The results found in the literature supported that educators knowledge of ADD directly effects the services provided, intervention techniques utilized, and the classroom atmosphere created for the ADD child.

### Statement of the Problem

The purpose of the researcher was to investigate teachers', counselors', and principals' knowledge of Attention Deficit Disorder in school-aged children.

### Rationale and Importance of the Research

The results of the present study could be beneficial to classroom teachers, counselors, principals, school board members, parents, as well as others, to bring to the forefront the importance of knowledge of educators in identification, treatment, and education of students with

Attention Deficit Disorder (ADD). With the information generated by this study, educators should be able to draw conclusions pertaining to the present knowledge of Kansas educators concerning Attention Deficit Disorder, and use this information to determine the appropriate steps to provide more training and education on the identification of this disorder. The counselor's role as consultant/coordinator demands a level of expertise concerning ADD above that of the classroom teacher. Lavin (1991), Bowley and Walther (1992), and the report to the Texas legislature (1992) supported the need for counselor knowledge of ADD. The review of literature revealed that very little research has been done pertaining to counselors and ADD; therefore, the results of the study will add to the existing knowledge regarding the counselor's role.

The results of the present study provided information pertaining to the following questions:

1. Is there an association between position and knowledge of Attention Deficit Disorder?
2. Is there an association between the amount of inservice education attended pertaining to Attention Deficit Disorder and the individual's knowledge of Attention Deficit Disorder?
3. Is there an association between gender of the individual surveyed and knowledge of Attention Deficit Disorder?

4. Is there an association between size of the participant's school and knowledge of Attention Deficit Disorder?
5. Is there an association between the years of experience in education and knowledge of Attention Deficit Disorder?
6. Is there an association between the amount of formal education and knowledge of Attention Deficit Disorder?

#### Composite Null Hypotheses

Each null hypothesis was tested at the .05 level of significance.

1. The differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to position, inservice attended, and gender will not be statistically significant.
2. The differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to position, inservice attended, and size of participant's school will not be statistically significant.
3. The differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to inservice attended, gender, and size of participant's school will not be statistically significant.

4. The differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to position, gender, and size of participant's school will not be statistically significant.

5. The differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to size of the participant's school, inservice attended, and years of experience in education will not be statistically significant.

6. The differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to formal education will not be statistically significant.

#### Independent Variables and Rationale

The following independent variables were investigated: position, inservice, gender, size of the participant's school, years of experience in education, and amount of formal education. Little research was found pertaining to the independent variables: position, gender, formal education, size of school, and years of experience in education. The independent variables were selected for the following reasons:

1. the present researcher found limited studies pertaining to these independent variables,
2. the studies found were not highly related, and

3. the results of the studies found were inconclusive.

#### Definition of Variables

##### Independent Variables

The independent variables came from self-reported information obtained from a demographic sheet. The following independent variables were investigated:

1. position - three levels,  
level 1 - classroom teacher,  
level 2 - counselor, and  
level 3 - principal;
2. inservice attended - levels determined post hoc,  
level 1 - 1-3 hours,  
level 2 - 4-6 hours, and  
level 3 - 7 + hours;
3. gender - two levels,  
level 1 - male, and  
level 2 - female;
4. size of the participant's school - levels determined post hoc,  
level 1 - 1A-2A schools,  
level 2 - 3A-4A schools, and  
level 3 - 5A-6A schools;
5. years of experience in education - levels determined post hoc,  
level 1 - 1-3 years,  
level 2 - 4-10 years, and

- level 3 - 11 + years;
6. level of formal education - levels determined post hoc,
- level 1 - Bachelor's degrees,
- level 2 - Master's degrees, and
- level 3 - PHD/EDS degrees.

#### Dependent Variable

The dependent variable was scores from the Knowledge of Attention Deficit Disorder Questionnaire, possible points 0-15.

#### Limitations

The following may have affected the results of the study:

1. school districts were identified randomly, but not the individual subjects,
2. the subjects were taken from 1 state in the Midwest,
3. all information was self-reported, and
4. the researcher did not have total control of the data collection procedure beyond the instruction sheet provided.

#### Delimitations

The following were not implemented in the current study:

1. pilot study for the Knowledge of Attention Deficit Disorder Questionnaire,

2. reliability studies for the Knowledge of Attention Deficit Disorder Questionnaire, and
3. validity studies for the Knowledge of Attention Deficit Disorder Questionnaire.

### Methodology

#### Setting

The setting for the present study was the Kansas Public School System (elementary schools). Kansas is a sparsely populated state with most of the population in the eastern third of the state. According to the United States Bureau of the Census (1991), Kansas ranked 15th in total area among the 50 states, but only 32nd in population with 1% of the United States population living in Kansas. Large portions of the state have very little population with great distances between population centers. The population density per square mile in the western third of the state averages only 4 persons per square mile. The main source of income for most of the state is agriculture related industries, with wheat production ranking number one in the U.S. and cattle slaughtered number two (Helyar, 1991-92).

#### Subjects

The Kansas Educational Directory (1993) contains a list of 305 unified school districts. The school districts' locations span the spectrum from rural to urban districts. A stratified sample was employed. Stratification was by unified school district classification. The 305 school

districts are divided into 6 classifications for participation in extra-curricular activities. School districts are categorized based upon school enrollment in grades 10, 11, and 12. The 32 schools with the largest enrollments as of September 20, 1993, were designated as Class 6A Schools. The next 32 largest schools were designated as Class 5A Schools. Class 4A, 3A, and 2A each contain 64 schools. The remaining school districts in the state were designated as Class 1A. This category included the smallest 110 school districts in the state.

Fifteen schools were identified from each district classification by using a table of random numbers. School districts from each classification were identified and numbered using the Kansas State Activities Association Membership Directory (1993). After identifying the school districts, the first elementary school (non-rural) listed in the Kansas Educational Directory (1993) for each district was selected. Packets of materials were mailed in the Spring of 1994 to the building principal of the elementary schools selected. Sixty-three packets were returned of the 90 mailed. Of the 517 copies of the questionnaires mailed, 303 were completed according to instructions and useable for a 59% return. The sample consisted of 160 teachers (160/225, 71% returned), 61 counselors (61/141, 43% returned), and 82 principals (82/151, 54% returned) from Kansas school districts varying in size. The sample of 303

consisted of 91 males and 212 females. The individuals' years of experience in education were: 30 had 1-3 years experience; 65 had 4-10 years; and 208 had 11 or more years of experience.

#### Instrumentation

Two instruments were employed in the study. They were a demographics questionnaire and the Knowledge of Attention Deficit Disorder Questionnaire.

Demographic Questionnaire. The researcher developed the Demographic Questionnaire (Appendix A). It contained 6 items. The items addressed the following: position held, gender, highest level of formal education completed, amount of Attention Deficit Disorder related inservice attended, size of the school, and years of experience in education.

Knowledge of Attention Deficit Disorder Questionnaire. The Knowledge of Attention Deficit Disorder Questionnaire (Appendix B) was developed by the researcher and consisted of 35 items. The 35 items were taken from the DSM III-R. Fifteen items were the diagnostic criteria for ADD, 11 items were diagnostic criteria for Conduct Disorder (CD), and 9 items were diagnostic criteria for Oppositional Defiant Disorder (ODD). Participants were asked to identify the 15 statements which best characterized a child as having Attention Deficit Hyperactivity Disorder by making a checkmark on the line before the characteristics. The instruments were scored on a scale of 0-15. The number

identified correctly determined the score. If the individual marked more than 15 items, the first 15 items marked were scored.

### Design

A status survey factorial design was employed. The following independent variables were investigated: position held in education, inservice, gender, level of formal education, size of the participant's school, and years of experience in education. The dependent variable was scores from the Knowledge of Attention Deficit Disorder Questionnaire. Five composite null hypotheses were tested employing a three-way analysis of variance (general linear model), and one composite null hypothesis was tested employing a single factor design. The following design was used with each composite null hypothesis:

composite null hypothesis number one, a 3 x 4 x 2 factorial design,

composite null hypothesis number two, a 3 x 4 x 3 factorial design,

composite null hypothesis number three, a 4 x 2 x 3 factorial design,

composite null hypothesis number four, a 3 x 2 x 3 factorial design,

composite null hypothesis number five, a 3 x 4 x 3 factorial design, and

composite null hypothesis number six, a single factor

design.

McMillan and Schumacher (1989) cited 10 threats to internal validity. In the present study, these 10 threats were dealt with in the following ways:

1. history - did not pertain because the present study was status survey;

2. selection - results were used from all subjects who returned useable copies of the instruments;

3. statistical regression - did not pertain because the present study was status survey;

4. testing - did not pertain because the present study was status survey;

5. instrumentation - did not pertain because the present study was status survey;

6. mortality - did not pertain because the present study was status survey;

7. maturation - did not pertain because the present study was status survey;

8. diffusion of treatments - did not pertain because the present study was status survey;

9. experimenter bias - did not pertain because no treatment was implemented, data were collected in the same manner for all participants, and no value judgment was elicited on the part of the researcher; and

10. statistical conclusion - violated 2 mathematical assumptions (the selection of individual subjects was not

random--school districts were randomly identified, and the assumption of equal numbers of subjects in cells was not met). Lack of equal number of subjects in cells was corrected by using the general linear model, and the researcher did not project beyond the statistical procedures employed.

McMillan and Schumacher (1989) cited 2 threats to external validity. These 2 threats were dealt with in the following ways:

1. population external validity individual subjects were not selected randomly (school districts were randomly identified); therefore, the results should be generalized to similar groups only; and

2. ecological external validity - no treatment was implemented and data were collected under standard procedures.

#### Data Collection Procedures

The data were collected from a stratified random sample of teachers, counselors, and administrators from the public elementary schools of Kansas. Instructions (Appendix C), the demographic questionnaire (Appendix A), the Knowledge of Attention Deficit Disorder Questionnaire (Appendix B), and a letter to the building principals (Appendix D) enlisting their cooperation with the research and detailing the directions for participation in the study were mailed to participants at the elementary level for each district

randomly selected. Three counselors, three teachers, and three building principals were asked to complete the survey in Class 6A, 5A, and three Class 4A schools. Five schools in Class 4A and five schools in Class 3A received packets containing materials for two principals, one counselor, and three teachers. Seven schools in Class 4A, ten in Class 3A, and all 15 schools in both Class 2A and Class 1A received packets containing materials for one principal, one counselor, and three teachers. The packets were mailed to the building principal of the elementary school selected for each participating school district. The difference in the number of materials in the packets was determined by the number of elementary schools in the school district--the assumption was made that the more elementary schools in the district, the more likely the possibility of more principals and counselors to survey.

Prior to marking the instruments, the participants were to read the same prepared set of instructions (Appendix C) to ensure consistency and to prevent confusion. Results were then returned to the building principal for placement in the enclosed manilla envelope and mailed back to the researcher.

After examination for completion, the instruments were scored, the data sheet compiled, and the data analyzed by mainframe computer at Fort Hays State University.

#### Research Procedures

The following steps were implemented:

1. the topic was selected,
2. the researcher utilized the Educational Resources Information Center (ERIC), Psychological Abstracts, Sociology Abstracts, and Educational Index,
3. the instruments were developed,
4. a research proposal was written,
5. the proposal was defended,
6. the data were collected,
7. the data were analyzed,
8. the thesis was completed,
9. the thesis was defended, and
10. the final editing of the thesis was completed.

#### Data Analysis

The following were compiled:

1. appropriate descriptive statistics,
2. three way analysis of variance (general linear model),
3. one-way analysis of variance (general linear model),
4. Bonferroni (Dunn) t-test for means, and
5. Duncan's multiple range test for means.

#### Results

The purpose of the researcher was to investigate teachers', counselors', and principals' knowledge of Attention Deficit Disorder in school-aged children. The

independent variables were position, inservice attended, gender, size of the participant's school, years of experience in education, and level of formal education. The dependent variable was scores from the Knowledge of Attention Deficit Disorder Questionnaire. Six composite null hypotheses were tested employing analysis of variance using the following designs:

composite null hypothesis number one, a  $3 \times 4 \times 2$  factorial design,

composite null hypothesis number two, a  $3 \times 4 \times 3$  factorial design,

composite null hypothesis number three, a  $4 \times 2 \times 3$  factorial design,

composite null hypothesis number four, a  $3 \times 2 \times 3$  factorial design,

composite null hypothesis number five, a  $3 \times 4 \times 3$  factorial design, and

composite null hypothesis number six, a single factor design.

The results section was organized according to composite null hypotheses for ease of reference. Information pertaining to each hypothesis was presented in a common format for ease of comparison.

It was hypothesized in composite null hypothesis number one that the differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for

educators according to position, inservice attended, and gender would not be statistically significant. Information pertaining to composite null hypothesis number one was presented in Table 1. The following were cited in Table 1: variables, group sizes, means, standard deviations, F values, and p levels.

Table 1: A Comparison of Mean Knowledge of Attention Deficit Disorder Questionnaire Scores According to Position, Inservice Attended, and Gender Employing a Three-way Analysis of Variance (General Linear Model)

Variable	<u>n</u>	<u>M*</u>	<u>S</u>	<u>F</u> value	<u>p</u> level
<u>Position (A)</u>					
Teacher	160	12.4	2.04		
Counselor	61	13.2	1.94	1.37	.2551
Principal	82	12.3	2.15		
<u>Inservice Attended (B)</u>					
None	120	12.2	2.12		
1-3	99	12.3	2.28		
				1.54	.2045
4-6	48	12.9	1.44		
7 +	36	13.5	1.78		
<u>Gender (C)</u>					
Male	91	12.3	2.33		
Female	212	12.6	1.95	0.47	.4927
<u>Interactions</u>					
	A x B			0.77	.5968
	A x C			0.49	.6127
	B x C			0.90	.4392
	A x B x C			0.60	.7001

\*The larger the value, the greater the knowledge of Attention Deficit Hyperactivity Disorder (possible scores 0-15).

None of the 7 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 1 indicated no associations between any independent variables and the dependent variable.

It was hypothesized in composite null hypothesis number two that the differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to position, inservice attended, and size of the participant's school would not be statistically significant. Information pertaining to composite null hypothesis number two was presented in Table 2. The following were cited in Table 2: variables, group sizes, means, standard deviations, F values, and p levels.

Table 2: A Comparison of Mean Knowledge of Attention Deficit Disorder Questionnaire Scores According to Position, Inservice Attended, and Size of the Participant's School Employing a Three-way Analysis of Variance (General Linear Model)

Variable	<u>n</u>	<u>M*</u>	<u>S</u>	<u>F</u> value	<u>p</u> level
<u>Position (A)</u>					
Teacher	160	12.4	2.04		
Counselor	61	13.2	1.94	2.79	.0634
Principal	82	12.3	2.15		
<u>Inservice Attended (B)</u>					
None	120	12.3	2.12		
1-3	99	12.3	2.28		
4-6	48	12.9	1.44	1.11	.3436
7 +	36	13.5	1.78		
<u>Size of Participant's School (D)</u>					
1A-2A	101	12.4	2.00		
3A-4A	116	12.3	2.27	1.75	.1769
5A-6A	86	13.0	1.81		
<u>Interactions</u>					
	A x B			1.15	.3344
	A x D			0.14	.9677
	B x D			0.41	.8737
	A x B x D			0.88	.5701

\*The larger the value, the greater the knowledge of Attention Deficit Hyperactivity Disorder (possible scores 0-15).

None of the 7 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 2 indicated no associations between any independent variables and the dependent variable.

It was hypothesized in composite null hypothesis number three that the differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to inservice attended, gender, and size of the participant's school would not be statistically significant. Information pertaining to composite null hypothesis number three was presented in Table 3. The following were cited in Table 3: variables, group sizes, means, standard deviations, F values, and p levels.

Table 3: A Comparison of Mean Knowledge of Attention Deficit Disorder Questionnaire Scores According to Inservice Attended, Gender, and Size of the Participant's School Employing a Three-way Analysis of Variance (General Linear Model)

Variable	<u>n</u>	<u>M*</u>	<u>S</u>	<u>F</u> value	<u>p</u> level	
<u>Inservice Attended (B)</u>						
None	120	12.3	2.12			
1-3	99	12.3	2.28			
4-6	48	12.9	1.44	2.43	.0657	
7 +	36	13.5	1.78			
<u>Gender (C)</u>						
Male	91	12.3	2.33			
Female	212	12.6	1.95	1.38	.2410	
<u>Size of Participant's School (D)</u>						
1A-2A	101	12.4	2.00			
3A-4A	116	12.3	2.27	1.13	.3246	
5A-6A	86	13.0	1.81			
<u>Interactions</u>						
				B x C	1.32	.2683
				B x D	0.88	.5132
				C x D	0.23	.7935
				B x C x D	1.09	.3689

\*The larger the value, the greater the knowledge of Attention Deficit Hyperactivity Disorder (possible scores 0-15).

None of the 7 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 3 indicated no associations between any independent variables and the dependent variable.

It was hypothesized in composite null hypothesis number four that the differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to position, gender, and size of the participant's school would not be statistically significant. Information pertaining to composite null hypothesis number four was presented in Table 4. The following were cited in Table 4: variables, group sizes, means, standard deviations, F values, and p levels.

Table 4: A Comparison of Mean Knowledge of Attention Deficit Disorder Questionnaire Scores According to Position, Gender, and Size of the Participant's School Employing a Three-way Analysis of Variance (General Linear Model)

Variable	<u>n</u>	<u>M*</u>	<u>S</u>	<u>F value</u>	<u>p level</u>
<u>Position (A)</u>					
Teacher	160	12.4	2.04		
Counselor	61	13.2	1.94	2.02	.1346
Principal	82	12.3	2.15		
<u>Gender (C)</u>					
Male	91	12.3	2.33		
Female	212	12.6	1.95	0.50	.4793
<u>Size of Participant's School (D)</u>					
1A-2A	101	12.4	2.00		
3A-4A	116	12.3	2.27	1.27	.2833
5A-6A	86	13.0	1.81		
<u>Interactions</u>					
	A x C			0.28	.7576
	A x D			0.50	.7329
	C x D			0.51	.5995
	A x C x D			0.41	.8021

\*The larger the value, the greater the knowledge of Attention Deficit Hyperactivity Disorder ( possible scores 0-15).

None of the 7 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 4 indicated no associations between any independent variables and the dependent variable.

It was hypothesized in composite null hypothesis number five that the differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to size of the participant's school, inservice attended, and years of experience in education would not be statistically significant. Information pertaining to composite null hypothesis number five was presented in Table 5. The following were cited in Table 5: variables, group sizes, means, standard deviations, F values, and p levels.

Table 5: A Comparison of Mean Knowledge of Attention Deficit Disorder Questionnaire Scores According to Size of the Participant's School, Inservice Attended, and Years of Experience in Education Employing a Three-way Analysis of Variance (General Linear Model)

Variable	<u>n</u>	<u>M*</u>	<u>S</u>	<u>F</u> value	<u>p</u> level
<u>Size of Participant's School (D)</u>					
1A-2A	101	12.4	2.00		
3A-4A	116	12.3	2.27	1.86	.1577
5A-6A	86	13.0	1.81		
<u>Inservice Attended (B)</u>					
None	120	12.3	2.12		
1-3	99	12.3	2.28		
4-6	48	12.9	1.44	2.33	.0751
7 +	36	13.5	1.78		
<u>Years of Experience in Education (E)</u>					
1-3	30	12.1	2.24		
4-10	65	12.7	1.72	0.16	.8485
11 +	208	12.5	2.15		
<u>Interactions</u>					
				D x B	1.17 .3240
				D x E	0.83 .5043
				B x E	0.72 .6373
				D x B x E	0.24 .9880

\*The larger the value, the greater the knowledge of Attention Deficit Hyperactivity Disorder (possible scores 0-15).

None of the 7 p values were statistically significant at the .05 level; therefore, the null hypotheses for these comparisons were retained. The results cited in Table 5 indicated no associations between any independent variables and the dependent variable.

It was hypothesized in composite null hypothesis number six that the differences among the mean Knowledge of Attention Deficit Disorder Questionnaire scores for educators according to formal education would not be statistically significant. Information pertaining to composite null hypothesis number six was presented in Table 6. The following were cited in Table 6: variables, group sizes, means, standard deviations, F values, and p levels.

Table 6: A Comparison of Mean Knowledge of Attention Deficit Disorder Questionnaire Scores According to Formal Education Employing a One-way Analysis of Variance (General Linear Model)

Variable	<u>n</u>	<u>M</u> *	<u>S</u>	<u>F</u> value	<u>p</u> level
<u>Formal Education</u>					
B.S. degree	110	12.4	2.01		
Master's degree	179	12.5	2.15	1.34	.2644
PHD/EDS degree	14	13.4	1.39		

\*The larger the value, the greater the knowledge of Attention Deficit Hyperactivity Disorder (possible scores 0-15).

The p value was not statistically significant at the .05 level; therefore, the composite null hypothesis was retained. The results cited in Table 6 indicated no association between amount of formal education and knowledge of Attention Deficit Disorder.

#### Discussion

##### Summary

The purpose of the researcher was to investigate teachers', counselors', and principals' knowledge of Attention Deficit Disorder in school-aged children. The independent variables investigated were position, amount of inservice attended, gender, size of the participant's

school, years of experience in education, and amount of formal education. The dependent variable was scores from the Knowledge of Attention Deficit Disorder Questionnaire. The sample of 303 consisted of 160 teachers, 61 counselors, and 82 principals (91 males, 212 females) from Kansas public school districts. Five composite null hypotheses were tested employing three-way analysis of variance (general linear model) and one composite null hypothesis was tested using a one-way analysis of variance (general linear model). A total of 20 comparisons were made plus 16 recurring. Of the 20 comparisons, 6 were for main effects and 14 were for interactions. Of the 6 main effects, none were statistically significant at the .05 level. Of the 14 interactions, none were statistically significant at the .05 level. The results indicated no statistically significant associations between any independent variables and the dependent variable. The groups appeared to come from a common population pertaining to knowledge of Attention Deficit Disorder.

#### Review of Literature and Results of the Present Study

The results of the present study appeared to support those reported by Brown (1986) and Abikoff, et al (1993) concerning teachers' knowledge of Attention Deficit Disorder. Brown found that teachers in his study correctly identified 82.43% of the children in the project as ADD with 17.57% misclassified, and 80.55% were correctly classified

ADHD with 19.45% misclassified. The results of the present study reported an average score of approximately 80% on the Knowledge of Attention Deficit Disorder Questionnaire. Results of a study by Abikoff, et al indicated that regular and special education teachers rated ADHD behaviors with 63% accuracy, but when behaviors associated with ODD were present, 40% rated the ODD child as meeting ADHD and ODD criteria. However, the teachers in the present study averaged 80% or better at identifying the criteria for Attention Deficit Disorder.

#### Generalizations

The results of the present study appeared to support the following generalizations:

1. no association between position (teacher, counselor, principal) and knowledge of Attention Deficit Disorder;
2. no association between amount of inservice education attended and knowledge of Attention Deficit Disorder;
3. no association between gender and knowledge of Attention Deficit Disorder;
4. no association between size of the participant's school and knowledge of Attention Deficit Disorder;
5. no association between years of experience in education and knowledge of Attention Deficit Disorder; and
6. no association between amount of formal education

and knowledge of Attention Deficit Disorder.

### Recommendations

The results of the present study appeared to support the following recommendations:

1. the study be replicated using a different instrument for obtaining information;
2. the study be replicated investigating in greater detail counselor and principal knowledge of Attention Deficit Disorder;
3. the study be replicated looking in more detail at the teacher, counselor, and principal roles in the identification of individuals with Attention Deficit Disorder; and
4. the study be replicated studying the school psychologists' and medical doctors' knowledge of Attention Deficit Disorder.

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Appendix A  
Demographic Questionnaire

## DEMOGRAPHICS QUESTIONNAIRE

Please answer each of the following questions by checking the appropriate space. Please give only one response for each item. All questions must be answered for the instrument to be useable for this study.

1. What position do you now hold as an educator?
  - elementary principal
  - elementary counselor
  - elementary teacher
  
2. What is your gender?
  - male                       female
  
3. Highest level of formal education completed. Check only one.
 

<input type="checkbox"/> B.S.	<input type="checkbox"/> Master's	<input type="checkbox"/> EDS
<input type="checkbox"/> B.S.+15	<input type="checkbox"/> Master's + 15	<input type="checkbox"/> PHD/EDD
<input type="checkbox"/> B.S.+30	<input type="checkbox"/> Master's + 30	<input type="checkbox"/> other (specify)
  
4. How much inservice have you attended pertaining to Attention Deficit Disorder? (Please specify the number of inservice hours of credit or continuing education credit.)
 

<input type="checkbox"/> none	<input type="checkbox"/> 4-6 hrs.	<input type="checkbox"/> 10-12 hrs.
<input type="checkbox"/> 1-3 hrs.	<input type="checkbox"/> 7-9 hrs.	<input type="checkbox"/> greater than 12
  
5. What is the size of the school where you are employed?
 

<input type="checkbox"/> Class 1A	<input type="checkbox"/> Class 2A	<input type="checkbox"/> Class 3A
<input type="checkbox"/> Class 4A	<input type="checkbox"/> Class 5A	<input type="checkbox"/> Class 6A
  
6. Years of experience in education.
 

<input type="checkbox"/> 1-3 years	<input type="checkbox"/> 4-10 years	<input type="checkbox"/> 11+ years
------------------------------------	-------------------------------------	------------------------------------

Appendix B

Knowledge of Attention Deficit Disorder Questionnaire

## KNOWLEDGE OF ATTENTION-DEFICIT DISORDER QUESTIONNAIRE

Read each of the following 35 statements. Check the 15 statements which best characterizes a child as having Attention Deficit Hyperactivity Disorder.

- \_\_\_\_\_ 1. Often loses temper
- \_\_\_\_\_ 2. Often fidgets with hands or feet or squirms in seat
- \_\_\_\_\_ 3. Often initiates physical fights
- \_\_\_\_\_ 4. Has difficulty remaining seated when required to do so
- \_\_\_\_\_ 5. Onset of symptoms before the age of seven
- \_\_\_\_\_ 6. Often lies
- \_\_\_\_\_ 7. Often argues with adults
- \_\_\_\_\_ 8. Often does not seem to listen to what is being said to him or her
- \_\_\_\_\_ 9. Often talks excessively
- \_\_\_\_\_ 10. Often deliberately does things that annoy other people
- \_\_\_\_\_ 11. Has difficulty sustaining attention in tasks or play activities
- \_\_\_\_\_ 12. Often shifts from one uncompleted activity to another
- \_\_\_\_\_ 13. Often blames others for his or her own mistakes
- \_\_\_\_\_ 14. Has difficulty playing quietly
- \_\_\_\_\_ 15. Is often angry and resentful
- \_\_\_\_\_ 16. Is easily distracted by extraneous stimuli
- \_\_\_\_\_ 17. Often loses things necessary for tasks or activities at school or at home
- \_\_\_\_\_ 18. Often actively defies or refuses adult requests or rules

- \_\_\_\_\_ 19. Has difficulty awaiting turn in games or group situations
- \_\_\_\_\_ 20. Often blurts out answers to questions before they have been completed
- \_\_\_\_\_ 21. Is often spiteful or vindictive
- \_\_\_\_\_ 22. Often interrupts or intrudes on others
- \_\_\_\_\_ 23. Has been physically cruel to people
- \_\_\_\_\_ 24. Has difficulty following through on instructions from others
- \_\_\_\_\_ 25. Often engages in physically dangerous activities without considering possible consequences
- \_\_\_\_\_ 26. Has stolen from a victim on more than one occasion
- \_\_\_\_\_ 27. Is often truant from school
- \_\_\_\_\_ 28. Is often touchy or easily annoyed by others
- \_\_\_\_\_ 29. Has run away from home overnight at least twice while living in parental or parental surrogate home
- \_\_\_\_\_ 30. Has deliberately engaged in fire-setting
- \_\_\_\_\_ 31. Has broken into someone else's house, building, or car
- \_\_\_\_\_ 32. Has deliberately destroyed others' property
- \_\_\_\_\_ 33. Has been physically cruel to animals
- \_\_\_\_\_ 34. Has used a weapon in more than one fight
- \_\_\_\_\_ 35. Often swears or uses obscene language

Note. From Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised by American Psychiatric Association, 1987, Washington, D.C.: American Psychiatric Association. Copyright 1987 by The American Psychiatric Association. Adapted by permission.

Appendix C  
Instruction Sheet

## INTRODUCTION:

My name is Nancy Riley. I am a graduate student majoring in Counseling. By completing this questionnaire, you will be helping me complete the requirements for a Master's thesis. The purpose of my study is to investigate the knowledge of Attention Deficit Disorder that Kansas public school teachers, counselors, and administrators have.

## INSTRUCTIONS:

You will find three pages following this instruction sheet: a Demographics Questionnaire, and a 2-page Knowledge of Attention Deficit Disorder Questionnaire. Please follow the instructions at the top of each questionnaire to complete the instruments. The instruments should take no more than 5 minutes to complete. Please do not write your name anywhere on the questionnaires. The individual's responses will be kept confidential. When you have completed the instruments, please place them in the enclosed envelope and return them to your building principal. I thank you for your help.

Appendix D

Letter to the Building Principals

Nancy Riley  
HCR 1, Box 155  
Minneola, KS 67865

Dear Building Principal:

I am a graduate student at Fort Hays State University majoring in Counseling. In order to complete the requirements for my Master's thesis, I am surveying teachers, counselors, and principals concerning their knowledge of Attention Deficit Disorder. I would appreciate your help in this endeavor.

Please distribute one copy of the enclosed instruments to one counselor and three teachers in your building, keeping one copy for yourself. Try to distribute the instruments to teachers of various experience levels (1-3 yrs., 4-10 yrs., and 11+ yrs.) if possible. Please encourage them to take a few minutes to complete the questionnaires, place them in the enclosed envelopes, and return them to you. After you have completed the instruments, please place all the envelopes in the large manilla envelope and return them to me. The postage has been paid. The instruments should take approximately 5 minutes to complete.

Please return the packet by May 1. I thank you for your cooperation and speedy response.

Sincerely,

Nancy Riley

Appendix E

Permission to use DSMIIR

Nancy G. Riley  
HCR 1, Box 155  
Minneola, KS 67865  
April 1, 1994

Division of Publication and Marketing  
American Psychiatric Association  
1400 K Street, N.W.  
Washington, DC 20005

Dear Sirs:

I am writing to request permission to use your criteria for diagnosing Attention Deficit Hyperactivity Disorder, Conduct Disorder, and Oppositional Defiant Disorder. As part of my master's thesis, I would like to use your criteria to survey teachers, counselors, and principals in Kansas public schools concerning their knowledge of Attention Deficit Disorder. The criteria for all three disorders will be listed with those surveyed being asked to distinguish which characteristics are indicative of A.D.D. The proposed survey is enclosed, as well as the instructions which will be sent with the questionnaire.

I would appreciate a reply as quickly as possible, as the school year is nearing an end. I wish to collect my data before the close of this school year.

Sincerely,

*Nancy G. Riley*  
Nancy G. Riley

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*Arnold E. McMillan* 4/3/94 *N/C*  
Date Fee

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