AN INVESTIGATION TO DETERMINE SCHOOL ADMINISTRATORS' ACQUISITION, USE, AND DISSEMINATION OF APPLIED EDUCATIONAL RESEARCH FINDINGS

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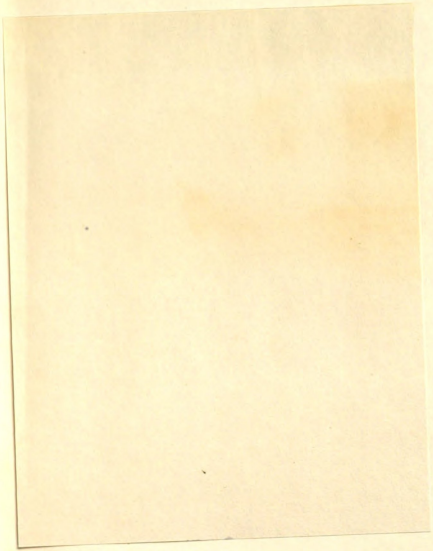

ABSTRACT

AN INVESTIGATION TO ASCERTAIN
ACQUISITION, USE, AND DISSEMINATION OF
EDUCATIONAL RESEARCH

This investigation was undertaken to ascertain the school administrator's relationship to educational research (AER). This relationship revolved around the acquisition of knowledge of AER findings, the use of AER and his dissemination of AER findings to others.

Since the educational inquiry domain includes basic research, applied research, evaluation, and action research, this study purposely limited itself to only one type of research activity, applied educational research (AER). AER is defined as an activity which produces generalizable knowledge of immediate or practical significance. It is mission-oriented and aimed at producing knowledge relevant to solving a general problem.

While the literature fails to differentiate between the various types of educational research activities when speaking of school administrators, it suggests that school administrators have preferences in their methods of acquiring research-related information (discussions with fellow educators and conferences-workshops are highly regarded while personal reading is somewhat downgraded). Moreover,

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This investigation was undertaken to empirically describe the school administrator's relationship to applied educational research (AER). This relationship revolved around the school administrator's acquisition of knowledge of AER findings, his use of AER findings, and his dissemination of AER findings to others.

Since the educational inquiry domain is quite broad (including basic research, applied research, evaluation, and action research), this study purposely limited itself to only one type of research activity, applied educational research (AER). AER is defined as an activity which produces generalizable knowledge of immediate or practical application; it is mission-oriented and aimed at producing knowledge relevant to solving a general problem.

While the literature fails to differentiate between the various types of educational research activities when speaking of school administrators, it suggests that school administrators have preferences in their methods of acquiring research-related information (discussions with fellow educators and conferences-workshops are highly regarded while personal reading is somewhat downgraded). Moreover,

administrators are described as having somewhat less than a favorable attitude towards educational research; plus they only infrequently utilize educational research findings. Finally, there is some indication that few administrators make any effort to disseminate educational research findings to others.

Two distinct populations (a population of Michigan principals and a population of Michigan superintendents) were under consideration in this investigation. Representing K-12 districts with 2,000 plus students, the populations numbered 273 superintendents and 2,832 principals, respectively. Stratified random sampling was employed in selecting subjects from each particular population. One hundred and thirty-six superintendents and two hundred and forty-six principals were sent a specially-prepared, pretested questionnaire. The latter instrument dealt with principals' and superintendents' knowledge, use, and dissemination of AER; principal and superintendent questionnaires were virtually identical. Eighty-five (62.5%) superintendents and one hundred and fifty-six (63.4%) principals ultimately responded.

The results of this study indicated that school administrators familiarize themselves with AER in many ways, but personal reading seems to be the most popular method. Regarding the latter method, most administrators typically read accounts of studies rather than the original studies themselves. They read many more AER studies in, and feel more knowledgeable about, educational administration and curriculum than AER studies in educational psychology, educational sociology, or counseling. Many administrators admit having difficulty

with the language, terminology or the research methods used in AER studies. While few administrators feel that the locating of relevant AER information is a major problem, most administrators only infrequently survey the literature for pertinent AER studies. Most administrators do have AER-oriented publications at hand, however.

School administrators tend to look favorably upon education courses and conferences-workshops which attempt to disseminate AER findings. Nevertheless, they only infrequently discuss AER studies with other educators. Interestingly, administrators perceive that other administrators typically attach more value to AER than do teachers. Also they believe that more attention should be given to the dissemination of AER findings.

School administrators are, in fact, using AER in the performance of their professional roles. Most notably, they were found to use AER in their everyday, operating decisions; in the leadership of their staffs; in the developing of new educational programs; and in the furthering of their professional growth. Superintendents seem to be using AER somewhat more frequently than are principals. While both principals and superintendents have a favorable attitude towards AER, superintendents are even more positive about AER than are principals.

In addition, school administrators are assisting in the dissemination of AER by passing along relevant AER articles to others and insuring that AER materials are at hand. Moreover, most administrators feel that they have a responsibility to keep other groups (educators and non-educators alike) up-to-date on AER findings.

Importantly, one correlate variable was found to be directly related to principals' and superintendents' knowledge, use, and dissemmination of AER. This was the number of AER-related courses which the school administrator had previously taken.

Many of these findings are at odds with the literature; this would suggest further research on the subject.

AN INVESTIGATION TO DETERMINE SCHOOL ADMINISTRATORS' ACQUISITION, USE, AND DISSEMINATION OF APPLIED EDUCATIONAL RESEARCH FINDINGS

By

John Lee Major

A DISSERTATION

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DEDICATION

To my wife, Ruth, whose patience and love were never-ending and to my parents, Mr. and Mrs. John Major, who have provided encouragement and support in all my academic pursuits.

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I am grateful to many individuals who contributed to the successful completion of this study: to the Chairman of my Doctoral Committee, Dr. Philip Cusick, who provided guidance along the way, but most importantly, kept the faith; and to my Committee Members, Dr. Robert Craig, Dr. Louis Romano, and Dr. Wilbur Brookover, whose suggestions proved invaluable.

I would also like to acknowledge the assistance of my wife's parents, Mr. and Mrs. James Hudgens, in the final preparation of this document.

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CHAPTER I

THE PROBLEM

Need

Over the years many resources (time, human energy, and money) have been committed to the conducting of educational research with the hope that such research will prove beneficial to the schools. It is assumed that for educational research to have a positive effect on the schools it must be considered, examined, and utilized by local educators. One type of educator, who by virtue of his position, has an excellent opportunity to take full advantage of educational research findings is the school administrator (local principal and superintendent). Administrators ostensibly occupy the role of change agents and thus are able to bring educational research to bear on problems affecting an entire school or district. Administrators stand between available research on the one hand and its broad implementation on the other.

Great efforts have been made to bring educational research to the attention of principals and superintendents. That is, graduate courses have been devised which promulgate educational research findings or which teach educational research methodology; educational and behavioral science journals have attempted to report studies of relevance to administrators; conferences, workshops, and institutes have been held which attempt to keep the administrator informed of educational research

of interest. However, beyond this attempt to disseminate educational research findings and to provide a basic understanding of research methodology, little has been accomplished in terms of describing how educational research relates to district principals and superintendents. That is, few studies have attempted to investigate how school administrators go about acquiring knowledge of educational research findings, how they try to use research findings, or how they disseminate research findings to others. Moreover, the work which has gone on in this area has typically been concerned with only one aspect--to the detriment of other equally important aspects--of the administrator's relationship to educational research. Consequently, there is a need for a thorough and comprehensive examination of the school administrator's behavior and attitude towards educational research.

Such information would prove valuable to many groups and individuals. For example, it would be useful for researchers to know the attitudes which administrators hold towards educational research and the extent to which administrators use research findings in the schools. Organizations and government agencies attempting to foster and promote educational research would likewise be interested in the methods administrators commonly use in acquiring knowledge of research findings. Individuals responsible for administrator preparation programs would probably like to have some indication of the extent to which research findings should be incorporated into administrator curriculums. Finally, individual administrators could use such information in personally evaluating their relationship to educational research.

Purpose

Educational research, it should be noted, is not a unidimensional activity. Rather, it is multifaceted in nature and subsumes such inquiry activities as basic research, applied research, evaluation, and action research. The latter differ in their objectives, their generalizability, and their immediate usefulness. Consequently, when speaking of educational research, it is important to be precise and specify the particular inquiry activity in mind. Likewise, when investigating school administrators and their relationship to educational research, it is necessary to outline the particular type of educational research involved. This study, therefore, attempts to determine how a particular type of educational research--applied educational research (AER)--relates to a particular group of educational practitioners--school administrators.

Applied educational research (AER) can be defined as an activity which produces generalizable knowledge (unlike evaluation and action research) of immediate or practical application (unlike basic research). It is mission-oriented and aimed at producing knowledge relevant to solving a general problem. AER is characteristically concerned with the prediction and control of educationally significant phenomena. As opposed to basic research, which studies detailed fundamental processes and molecular levels of behavior, AER deals with gross macro processes and molar levels of behavior. AER typically pays only a moderate amount of attention to theoretical considerations. Often called field research, AER is frequently conducted in situations that are similar or identical to those in which the findings are to be applied.

This study then attempts to meet three objectives. First, it examines the different methods school administrators use to acquaint themselves with AER findings. These include personal reading, discussions with other educators, education courses, and conferences-workshops. (The literature suggests that administrators tend to look favorably upon all of these methods, save personal reading.) Second, this study examines school administrators' use of AER in five particular areas: in everyday, operating decisions; in the leadership of staff members; in the developing of new educational programs; in relations with the lay public; and in the furthering of professional growth. At the same time, administrators' attitudes toward AER are explored. (The literature implies that administrators only infrequently utilize educational research findings, plus have somewhat less than a favorable attitude towards educational research.) Third, this study examines the different methods school administrators use to disseminate AER findings. These include discussing AER studies with others, passing along relevant AER articles to others, and insuring that AER materials are readily available for others. (The literature indicates that few administrators make any effort to disseminate educational research findings.) In directing itself to the three described objectives, this study additionally examines a number of variables thought to be related to school administrators' knowledge, use, and dissemination of AER.

Questions

Three general questions are thus considered in this study. They are:

1. How do Michigan principals and superintendents acquire knowledge of AER?
2. How do Michigan principals and superintendents use AER?
3. How do Michigan principals and superintendents disseminate AER to others?

Overview

In the following chapters, there is a full discussion of the scope of this problem, of the attempts to obtain information on the problem, and of the answers that were obtained to the problem.

In Chapter II, AER is further defined and distinguished from other research and research-related activities; articles and studies relevant to the school administrator's relationship to educational research are also examined. In Chapter III, the research method (sample, measures, design, testable questions, and analysis) employed in this study is discussed. Finally, in Chapter IV, there is a full explanation of the results (specific answers to the three research questions) of this investigation.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The following discussion is divided into two parts. The first part attempts to place AER (applied educational research) in perspective with other research activities. That is, it attempts to explicitly define AER plus differentiate it from other educational inquiry activities. In so doing, it can be seen that AER is a distinct and separate activity with its own particular characteristics. The second part of this discussion attempts to review those articles and studies relevant to the school administrator's relationship to educational research. That is, it attempts to provide some background on how principals and superintendents acquire knowledge of educational research, how they use educational research, and how they disseminate educational research to others.

Applied Educational Research (AER)

The educational inquiry domain can be described as consisting of (1) research (basic and applied), (2) evaluation, (3) development, and (4) diffusion. Without a detailed discussion of the philosophy of science and its relation to education, it is necessary to discuss

and delineate these activities. Glass[1] differentiates the latter in the following manner:

> RESEARCH is the activity aimed at obtaining generalizable knowledge. This knowledge, which may result in theoretical models, functional relationships, or descriptions, may be obtained by empirical or other systematic methods and may or may not have immediate application.
>
> EVALUATION is the determination of the worth of a thing. It includes obtaining information to judge the worth of an educational program, product, or procedure.
>
> DEVELOPMENT in education is the production and testing of curriculum materials (including books, films, computer-assisted instruction programs, etc.), organizational or staffing plans (e.g., team teaching, differentiated staffing, modular scheduling), and other applied media or educational innovations.
>
> DIFFUSION encompasses planning, designing, and conducting activities which insure the application in educational programs of knowledge or products of research and development efforts. This may be done by various means, including (a) the use of communication techniques to disseminate information about the product or knowledge, (b) the conducting of demonstrations to establish the utility and applicability of the product or knowledge, and (c) procedures which facilitate adoption or application of the product or knowledge.

In terms of scientific inquiry, Glass views both research and evaluation as primary or direct inquiry activities. "In every case, the specified research or evaluation produces knowledge, however general or specific, not previously available."[2] Because they do

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[1]Gene V. Glass, "Interrelationships Among Research and Research-Related Roles in Education: A Conceptual Framework," American Educational Research Association Technical Papers No. 4: Task Force on Training Research and Research-Related Personnel, June 1970, pp. 3-4.

[2]Ibid., p. 7.

not meet this criterion of producing knowledge, Glass views development and diffusion, on the other hand, as secondary or inquiry-related activities.

Although research and evaluation both fall under the rubric of primary or direct inquiry activities, they are different in very many respects. Glass outlines at least ten viable methods of contrasting these two activities. (It should be said at the outset, however, that the contrasts between research and evaluation are marked and distinct when one thinks of research as basic research; however, these distinctions become somewhat more blurred when one tries to differentiate applied research and evaluation.)

Recognizing that there are always exceptions, Glass[3] offers the following general comparisons between research and evaluation:

1. Motivation of Inquirer

   Research and evaluation appear generally to be undertaken for different reasons. Research is pursued largely to satisfy curiosity; evaluation is done to contribute to the solution of a practical problem.

2. Objective of the Search

   Research and evaluation seek different ends. Research seeks conclusions; evaluation leads to decisions. (Cronbach and Suppes[4] also draw this distinction between conclusion-oriented and decision-oriented inquiry.)

3. Laws versus Descriptions

   Research is the quest for laws (nomethetic) while evaluation seeks to describe a particular thing (ideographic) with respect to one or more scales of value.

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[3]Ibid., pp. 15-28.

[4]Lee J. Cronbach and Patrick Suppes, eds., Research for Tomorrow's Schools: Disciplined Inquiry for Education (New York: The Macmillan Company, 1969), pp. 20-21.

4. Role of Explanation

   Research seeks the "why" and the "how," e.g., why a particular program is good or bad or how it operates to produce its effects; evaluation does not seek to explain, i.e., it is satisfied to know which program meets a particular objective.

5. Properties of the Phenomena which Are Assessed

   Evaluation seeks to assess the worth or social utility of a thing while research is an attempt to assess scientific truth.

6. Universality of the Phenomena Studied

   Research results tend to be generalizable across time, geography, and to similar instances of the phenomenon; evaluation results are of parochial importance.

7. Salience of the Value Question

   In evaluation, value questions are the sine qua non and usually determine what information is sought, whereas they are not the direct object of research.

8. Investigative Techniques

   In the main there are far more similarities than differences between research and evaluation with regard to the techniques used to collect and analyze empirical data.

9. Criteria for Judging the Activity

   The two most important criteria for judging the adequacy of research are internal validity and external validity. For evaluation, the criteria of highest importance are isomorphism of information and credibility of that information.

10. Disciplinary Base

    Research is frequently conducted from the standpoint of a particular discipline while evaluation, by necessity, must attempt multi-disciplinary answers.

Subsumed under research are both basic and applied research. The National Science Foundation has adopted the following definitions of basic and applied research:

BASIC RESEARCH is an activity "primarily motivated by the desire to pursue knowledge for its own sake. Such work is free from the need to meet immediate objectives and is undertaken to increase understanding of natural laws."[5]

APPLIED RESEARCH "is carried out with practical applications in mind and may either be concerned with translating existing knowledge into such applications or creating new knowledge for this purpose. It differs from basic research in that it seeks to show or indicate the means by which a recognized need may be met."[6]

Carroll[7] does an excellent job of comparing and contrasting basic and applied research. He points out that while basic research concerns itself with detailed fundamental processes, applied research directs itself to gross macro processes. In the behavioral sciences, basic research deals with a molecular level of behavior, applied research with a molar level. Carroll explains that basic research in learning, for example, is concerned with the precise combinations of stimulus and responses variables that produce certain effects, whereas applied research might be concerned with the effects, say, of massive doses of positive reward, which for certain groups of school learners might on the average produce significantly beneficial effects.

According to Carroll, basic research depends to a great degree on models of functional relationships that involve small error components; applied research, on the other hand, tends to use models that

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[5]Federal Funds for Research, Development, and Other Scientific Activities, Vol. 16, quoted in Educational Research and Development in the United States (Washington, D.C.: Government Printing Office, 1969), p. 1.

[6]Ibid.

[7]John B. Carroll, "Basic and Applied Research in Education: Definitions, Distinctions, and Implications," Harvard Educational Review 38 (Spring 1968): 271.

are more probabilistic and error-laden. Whereas applied research is often called field research because it is conducted in field settings where the results are to be applicable, basic research is undertaken in highly controlled laboratory situations. Applied research pays little attention to theoretical considerations; basic research is very concerned with the development of theory and models for the explanation of phenomena. While applied research infrequently leads to more basic research on a phenomenon, basic research often spawns applied research on a particular subject.

Applied research is frequently confused with both evaluation and action research. Glass points up the distinction: "Evaluation has sometimes been considered merely a form of applied research which focuses only on one curriculum, one program, or one lesson. This view ignores an obvious difference between the two--the level of generality produced. Applied research is mission-oriented and aimed at producing a solution to a general problem. Evaluation is focused on collecting specific information relevant to a specific problem, program, or product."[8] Borg[9] also differentiates between applied research and action research--action research being highly related to evaluation. Although admitting that action research possesses the highest level of reality possible and is intended to bring the scientific method to bear on classroom practices, Borg believes that applied research exerts

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[8]Glass, p. 9.

[9]Walter R. Borg, Educational Research: An Introduction (New York: David McKay Company, Inc., 1967), pp. 19-21.

considerably more control over extraneous variables and has significantly more generalizability in its results.

Of the primary inquiry activities of basic research, applied research, and evaluation (action research), there is occasional overlap and resulting confusion. However, since in the main there are more differences than similarities between these activities, it appears fruitful to distinguish between them. Thus because AER (applied educational research) can be defined plus differentiated from other activities, the school administrator's relationship to AER can, in fact, be assessed.

School Administrator's Relationship to Educational Research

The remaining discussion directs itself to the relationship of the administrator to educational research. Unfortunately, the articles and studies cited here fail to distinguish between basic research, applied research, and evaluation (action research). Rather they view research as being a global concept encompassing all of these activities. Nevertheless, because these same articles and studies do provide some insight into the administrator's relationship to AER, they have been included here.

Part of a school administrator's relationship to educational research is his acquisition of knowledge of educational research findings. There are certainly different ways a school administrator can acquaint himself with educational research. For example, he can read studies reported in educational and commercial publications; he can learn of studies through discussions with other educators; he can

enroll in education courses which emphasize research findings; and he can attend conferences, workshops, or institutes which disseminate educational research findings.

There apparently is a good deal of dissatisfaction regarding one of these methods--the reading of educational and commercial publications--of acquiring knowledge of educational research findings. Williams[10] reports, for example, that administrators often claim they lack the time to ferret out new ideas from research reports. Steinhoff and Owens[11] have said that journal articles are of little value to practitioners because they are frequently contradictory, too often written in a highly stylized language, and typically devoid of suggestions for the application of research findings. Guba[12] has claimed that for practitioners to acquaint themselves with research they unfortunately must choose between wading through technical reports, which they are ill-equipped to understand, or summaries, which are likely to be too general to be useful. Anderson[13] concurs with Guba by stating that reviews of research rarely say anything of importance to school personnel about educational practice.

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[10] Allan S. Williams, "School Administrators and Research Today," Educational Administration and Supervision 42 (December 1956): 480.

[11] Carl R. Steinhoff and Robert G. Owens, Impact of Research Findings and Recommendations in Urban School Districts: A Case Analysis (Bethesda, Md.: ERIC Document Reproduction Service, ED 042 231, 1971), p. 2.

[12] Egon G. Guba, The Place of Educational Research in Educational Change (Bethesda, Md.: ERIC Document Reproduction Service, ED 028 496, 1969), p. 5.

[13] Richard C. Anderson, "The Role of Educational Engineer," Journal of Educational Sociology 34 (April 1961): 377.

Regarding some of the studies relevant to this subject, one of the earliest was a rather limited survey of administrators by Johnson.[14] His study revealed that many administrators felt that research reports were too formal, limited in scope, or inconclusive. Also he found that the research that did, in fact, reach the administrator underwent a refining process and reached the administrator through his own administrator periodicals. Daly,[15] in a survey of 125 junior high school principals from the Detroit Metropolitan Area, reported that principals felt that some research information was difficult to obtain, read, and understand. Godfrey and Ivor[16] recently questioned 397 superintendents and discovered that the nation's chief school officers believe that research reports should be more easily readable. Also they reported that professional administrator journals far surpassed AERA, ERIC, and NEA research publications and bulletins as sources of information in keeping superintendents abreast of research and development activities. Chorness et al.[17] likewise found, in a

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[14] Loaz W. Johnson, "What Administrators Want and Will Use from Research Workers," American Educational Research Association's Official Report (Washington, D.C., 1949), pp. 10-11.

[15] Francis M. Daly, "A Study of the Utilization of Educational Research by the Junior High School Principals of the Detroit Metropolitan Area," Dissertation Abstracts 27 (February 1967): 2310-A.

[16] Eleanor P. Godfrey and Wayne Ivor, "Educational Research and the School Administrator," in Abstracts/One: 1970 AERA Annual Meeting Paper Sessions, ed: William Pilder (Washington, D.C.: American Educational Research Association, 1970), pp. 4-5. A more detailed discussion of Godfrey and Ivor's study can be found in: Educational Research and Development in the United States (Washington, D.C.: Government Printing Office, 1969), pp. 146-153.

[17] M. H. Chorness, C. H. Rittenhouse, and R. C. Heald, Decision Processes and Information Needs in Education: A Field Survey (Bethesda, Md.: ERIC Document Reproduction Service, ED 026 748, 1969), pp. 49-52.

study of administrators from 65 school districts in the San Francisco Bay Area, that the least used source of new information for administrators were reports from federally funded R & D and information programs.

In an attempt to determine the types of educational publications school superintendents typically read and rely upon, Fulks[18] surveyed 271 of the nation's chief school officers. He found that superintendents typically utilize trade publications like School Management, Nation's Schools, American School Board Journal, and American School and University; they also rely heavily upon general educational periodicals like Education Digest, NEA Journal, and state education association journals. Fulks notes that these types of publications do not contain an abundance of theory or research, but rather have a practical orientation. That is, they concentrate on reports of existing educational practice and miscellaneous happenings in the educational domain. Fulks did find, however, that younger superintendents with the doctorate were more likely to utilize Saturday Review and Phi Delta Kappan; he concluded that the nation's superintendents were not using significant periodicals as a source of ideas and knowledge.

Brown[19] lately conducted a study investigating the particular type of research that is reported in administrator periodicals. Conducting a content analysis on Educational Administration Quarterly and

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[18] D. G. Fulks, "Superintendents and Periodicals," Phi Delta Kappan 50 (September 1968): 47.

[19] Daniel J. Brown, The Poverty of Educational Administration (Bethesda, Md.: ERIC Document Reproduction Service, ED 061 582, 1972) p. 2.

Administrator's Notebook articles from 1966 to 1971, he found that a disproportionate amount of the research reported in these publications utilized the humanistic approach over the scientific approach. The humanistic approach he characterized as emphasizing case studies, participant observation studies, and studies utilizing verbal theory and soft data; the scientific approach, on the other hand, is primarily concerned with experimental studies and studies utilizing formal theory and hard data.

Another method whereby administrators can keep abreast of educational research findings is through discussions with other educators. Godfrey and Ivor[20] found in their study of the nation's superintendents that word-of-mouth techniques were by far the most popular method of acquiring knowledge of R & D activities. Likewise, Chorness et al.[21] learned that the most frequently used research-related information source used by San Francisco area administrators was other administrators in their own school systems. Wolf and Fiorino,[22] in their study of 600 educators, noted that innovative subjects regarded colleague contact to be important in the acquisition of new educational knowledge. Williams[23] has written, however, that administrators depend too much on "bull sessions" with other administrators, to the detriment of other methods of acquiring research-related information.

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[20] Godfrey and Ivor, p. 151.

[21] Chorness, Rittenhouse, and Heald, pp. 49-52.

[22] W. C. Wolf and A. J. Fiorino, A Study of Educational Knowledge Diffusion and Utilization (Bethesda, Md.: ERIC Document Reproduction Service, ED 061 772, 1972), p. 83.

[23] Williams, p. 480.

Enrolling in further education courses is another viable method of acquiring knowledge of research findings which is open to the school administrator. Gregg[24] has stated that 1940 administrator preparation programs greatly emphasized the practical, art aspect of administering the schools; current preparation programs consist of courses stressing administrative concepts, theories, and research.

Apart from courses which disseminate educational research findings, further courses in educational research methodology are thought to be of benefit to the school administrator. Turner[25] has said that for the school administrator to be a true consumer of research, he should acquire a knowledge of statistics and research design. Greer[26] concurs in the importance of research design and analysis methods, but also feels that the school administrator should be familiar with educational measurement and instrumentation. Goetz[27] found, in a study of 203 elementary school principals from seventy-four suburban Detroit school districts, that the preparation of school administrators is often weak in the area of statistics and research methods. Daly,[28] however, noted in his survey of junior high school principals in the Detroit

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[24] Encyclopedia of Educational Research, 4th ed., sv. "Preparation of Administrators," by Russel T. Gregg.

[25] Harold E. Turner, "The Principal--Moving Toward Research," Education 89 (February 1969): 232-233.

[26] John T. Greer, "Administrator's Responsibility Toward Research," High School Journal 48 (January 1965): 239.

[27] Francis R. Goetz, "Innovation and the Public Elementary School Principal," Dissertation Abstracts 26 (March 1966): 5156.

[28] Daly, p. 2310-A.

Metropolitan Area that principals did, in fact, desire more training in research activities.

Yet a final method whereby administrators can acquaint themselves with educational research is through attending conferences, workshops, and institutes which attempt to disseminate educational research findings and techniques. Johnson[29] found in his early study that research that eventually reached the administrator was frequently conveyed through the mechanism of administrator conferences. Godfrey and Ivor's[30] study indicated that the nation's superintendents have a favorable attitude toward workshops that disseminate R & D information. Chorness et al.[31] concluded that San Francisco administrators frequently used contacts with other administrators and curriculum specialists at professional meetings as sources of research-related information. Wolf and Fiorino's[32] study indicated that personal, direct involvement type diffusion strategies like workshops and institutes were very popular with innovative educators.

Even with the different methods of acquiring knowledge of educational research findings, some administrators evidently feel that certain research is not reaching them. Godfrey and Ivor[33] discovered that the nation's superintendents believe that more attention should be

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[29] L. W. Johnson, p. 11.

[30] Godfrey and Ivor, p. 152.

[31] Chorness, Rittenhouse, and Heald, pp. 49-52.

[32] Wolf and Fiorino, p. 83.

[33] Godfrey and Ivor, p. 152.

given to the feedback and dissemination of R & D results. In a nation-wide study, Coladarci et al.[34] surveyed 169 large city superintendents and asked them what administrative problem areas were most crucial and deserving of research priority. The five listed areas, in order of importance, were: research on the school staff; research on the educational program; research on public relations; research on plant planning and school finance; and, finally, research on the role and responsibility of the American public school system. Rittenhouse,[35] in a more recent national survey, asked administrators and other educational practitioners in 528 districts to identify the types of substantive and methodological information they needed most in making educational decisions. In order of importance, the top twelve areas where research-related information was most needed were: (1) drugs and health, (2) flexible scheduling, (3) sex education, (4) individualized instruction, (5) new social services, (6) non-graded procedures, (7) increasing vocational awareness, (8) program budgeting, (9) differential staffing, (10) establishing educational goals, (11) program evaluation, and (12) system analysis.

Integral to the administrator's relationship to educational research is his attitude toward, and use of, educational research.

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[34] A. P. Coladarci, E. Brooks, and W. R. Odell, "Research Priorities in Educational Administration," Journal of Educational Research 47 (April 1954): 626-628.

[35] Carl Rittenhouse, Innovation Problems and Information Needs of Educational Practitioners (Bethesda, Md.: ERIC Document Reproduction Service, ED 040 976, 1970), p. 28.

Regarding attitudes towards educational research, Kerlinger[36] has stated that educators frequently have an ignorance of, and a negative attitude toward, science and research. Ludlow[37] has said that although school administrators have read research journals, have been exposed to courses in research methodology, and have attended conferences and conventions where research is disseminated, they typically feel quite apart from the mysterious world of research. Greer[38] reports that it is important for administrators to have a positive attitude toward research because such an attitude will likely rub off on staff members. Williams[39] concurs by stating that a favorable attitude towards research can go a long way in establishing a positive research climate in an administrator's school or district.

Concerning those studies relevant to the school administrator's attitude toward educational research, Daly[40] studied Detroit junior high principals and found only one-third of these had a strong belief in research. Goetz,[41] in a study of elementary principals from suburban Detroit districts, discovered that a principal's attitude toward research was positively related to his innovativeness. Goetz also observed that

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[36] Fred N. Kerlinger, "The Mythology of Educational Research: The Methods Approach," School and Society 88 (March 1960): 149.

[37] H. Glenn Ludlow, "Alice in Wonderland: Elementary School Administrators in the Jungle of Research," National Elementary Principal 40 (December 1960): 30.

[38] Greer, p. 241.

[39] Williams, p. 487.

[40] Daly, p. 2310-A.

[41] Goetz, p. 5156.

Detroit suburban principals believe their superiors are favorably oriented towards research. In a study of Kentucky superintendents, Varland[42] found that superintendents with little experience as superintendents saw educational research to be of significantly less value to school practice than superintendents with more experience. Johnson[43] learned that Washington state administrators were generally cautious about placing confidence in educational research findings; however, he also found that once administrators participated in local research and experimental projects, they became more interested in research. Johnson,[44] in a British study, gave some support to the contention that an administrator's attitude towards research may "rub off" on staff members. She observed that there was a significant positive correlation between the attitudes of headmasters (principals) and the attitudes of their staffs (teachers) regarding educational research.

Regarding the use of educational research, different writers have pointed out the benefits which can accrue to research-oriented administrators. Williams[45] has written that research can increase an administrator's professional security, can help the administrator avoid professional stagnation, and can preclude the wasting of money and

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[42] Gerald L. Varland, "Accessibility of the Public Schools in Kentucky for Research Purposes," Dissertation Abstracts 31 (February 1971): 3850-A.

[43] Clifford W. Johnson, "A Study of the Use of Research and Experimental Techniques in School Districts of the State of Washington," Dissertation Abstracts 23 (February 1963): 2769-2770.

[44] Margaret Johnson, "Teachers' Attitudes to Educational Research," Educational Research (British) 9 (November 1966): 77.

[45] Williams, pp. 481-482.

resources in an administrator's school system. Ludlow,[46] in addition, has said that research can aid the administrator in making more rational changes in educational programs and practices, plus enhance the administrator's probability of reaching the best decisions on controversial issues. While Turner[47] believes that research can help keep an administrator in the mainstream of innovative instructional activity, Stratton[48] feels that research can help in explaining present and future educational programs to the board of education and community at large.

While some have discussed the benefits of using educational research findings, other writers have noted that there is little use of research in today's schools. Guba[49] has said that current educational practice is not based on research, that virtually none of today's predominant practices (e.g., the length of the school day, the nature of the curriculum, the grading practices, etc.) have any foundation in research findings. Brickell[50] has written that although one cannot say that research has no influence on school practice, one can say that as

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[46] Ludlow, p. 31.

[47] Turner, p. 231.

[48] Vinton Stratton, "The Role of the Future Elementary Administrator in Carrying on Research," California Elementary School Administrators' Association Twenty-Fifth Yearbook (California, 1953), pp. 144-145.

[49] Guba, pp. 5-6.

[50] Henry M. Brickell, quoted in Egon G. Guba, The Place of Educational Research in Educational Change (Bethesda, Md.: ERIC Document Reproduction Service, ED 028 496, 1969), pp. 5-6.

of 1967 school practice in the nation cannot be understood as based primarily on research.

Stratton[51] has said that there is a chasm of immense proportion between what is known and what is done in education. He estimates there is a time lag of 15 to 30 years in translating research into common practice. Van Dalen[52] concurs and estimates the time lag to be in the neighborhood of 25 years. Ludlow,[53] however, is less conservative as he believes 50 to 100 years is a more accurate figure.

Many individuals have set forth reasons for the little use of research by practitioners. Guba,[54] for example, believes that there are at least four major reasons. First, research has not been cumulative; that is, the practitioner who goes to the literature finds either a paucity of research on his topic of interest or competing, conflicting research which leaves him in an equivocal position. Second, research has not been programatically oriented, with major problem areas being systematically explored; too much research has been of an ad hoc nature. Third, research has not typically been oriented toward practical problems but rather to problems of a theoretical nature, amenable to experimental methods, and consistent with the psycho-statistical tradition. Fourth, there are no adequate mechanisms to link the worlds of the researcher and practitioner; that is, few educational

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[51] Stratton, p. 145.

[52] D. B. Van Dalen, Understanding Educational Research (New York: McGraw Hill Book Company, 1962), p. 14.

[53] Ludlow, p. 30.

[54] Guba, pp. 15-16.

middleman (e.g., educational developers, engineers, evaluators, diffusers, and demonstrators) exist. On this fourth point, Ward[55] is in agreement and calls for the establishment of a particular middleman, a research utilization specialist who would serve to package research findings for delivery to the practitioner. On this same point, Steinhoff and Owens[56] note that it will take some time before the middleman suggested by Guba is available; consequently, they propose that in the interim, the university professor assume the responsibility of transmitting research findings to practitioners.

Van Dalen[57] also suggests some reasons for the low utilization of educational research findings by practitioners. He believes the latter condition frequently results from a lack of knowledge (educators are unaware of studies conducted by researchers), a lack of commitment (educators are unwilling to apply the outcomes of research), or a lack of support (educators are faced with inadequate facilities and restrictive policies).

Schmuck,[58] on the other hand, posits that unproductive researcher-administrator relationships greatly account for the little use of research findings. Such research-administrator relationships

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[55] William G. Ward, Research Utilization Specialist: Review and Synthesis of Selected Literature on Research Development (Bethesda, Md.: ERIC Document Reproduction Service, ED 056 171, 1972), pp. 13-14.

[56] Steinhoff and Owens, pp. 2-3.

[57] Van Dalen, p. 14.

[58] Richard Schmuck, Social Psychological Factors in Knowledge Utilization as Applied to Educational Administration (Bethesda, Md.: ERIC Document Reproduction Service, ED 017 041, 1968), pp. 39-40.

are characterized by poor communication, negative stereotypes, and distrust and suspicion supported by the inconsistent norms of each other's reference group. Some psychological processes contributing to those difficulties in interpersonal relations include selective perception of each other's behavior, distortions of memory, a tendency to place low value on each's work, and the possibility of collaboration threatening the self-concepts of both researcher and administrator. Steinhoff and Owens[59] have also noted that a social psychological gulf separates the researcher and administrator with the latter viewing the researcher as an "ivory-tower" academician or dilettante who need not face the "nitty-gritty" problems of running the schools.

Egermeier and Wallace[60] conducted a rather recent study which gives evidence of the perceived differences between researchers and administrators. When forty-six Oklahoma administrators were asked to rate research personnel plus themselves on 49 psychological characteristics, administrators judged themselves different on over half (25) of the characteristics. On these same characteristics, teachers interestingly did not feel that they differed from research personnel in as many ways as did administrators. Egermeier and Wallace concluded that, compared to teachers, administrators were not especially suited for research.

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[59] Steinhoff and Owens, pp. 4-5.

[60] John C. Egermeier and Gaylen R. Wallace, Norms and Expectations for "Research-Oriented" Public School Personnel (Bethesda, Md.: ERIC Document Reproduction Service, ED 011 251, 1967), p. 9.

Concerning other studies, Johnson[61] found that administrators in his survey believed that research was of small value in helping them improve their school programs. These same administrators admitted, however, that they were not utilizing the research relevant to their problems. Johnson noted that the administrators desired brief, simplified, conclusive research which suggested practices that have tested beyond question. In Godfrey and Ivor's[62] national survey of superintendents, it was established that superintendents could see little connection between educational research activities and innovative classroom practices or school system operations. These superintendents felt that research should be oriented more towards application and development than to theory; that is, research should provide programs and models of implementation. Godfrey and Ivor noted that superintendents believe that most researchers are more interested in refining their research than in seeking the implementation of their results. Since these investigators also found that superintendents are not conducting significant amounts of research themselves, save an occasional curriculum development project, superintendents should rightfully be considered consumers, as opposed to producers, of research. In Daly's[63] study, junior high school principals in the Detroit Metropolitan Area felt that researchers did not fully understand the problems school practitioners have to contend with, nor the difficulty

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[61] L. W. Johnson, pp. 10-11.

[62] Godfrey and Ivor, pp. 146, 151-152.

[63] Daly, p. 2310-A.

that exists in applying research to the school program. Much like Godfrey and Ivor, Daly discovered that few principals are producers of research; only one in seven principals personally conducted any type of research activity in his school. Daly did conclude, however, that there is a readiness on the part of Detroit junior high school principals to utilize research results in their schools.

Cook and Damico[64] conducted a study which sheds some light on the ways school superintendents and educational researchers perceive their responsibility toward implementing research findings. These investigators surveyed 222 administrators and 260 AERA researchers and asked them to respond (by answering "strongly agree," "agree," "disagree," and "strongly disagree") to each of the following four summarized position statements:

(1) separate-functionalist the researcher's job is to generate workable solutions to educational problems, while the implementation of new techniques is solely the responsibility of the administrator; neither of these professionals must understand the processes, objectives, or environment of the other.

(2) communicator the onus of responsibility in implementing educational research findings is the administrator's; the administrator must have a thorough understanding of the methods and language used by the researcher; however, it is neither required nor necessary for the researcher to have a detailed understanding of the administrator.

(3) persuader the onus of responsibility in implementing educational research findings is the researcher's; the researcher must have a thorough

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[64] Desmond Cook and Sandra Damico, Role Perceptions of Educational Administrators and Researchers Relative to Implementation of Research Findings (Bethesda, Md.: ERIC Document Reproduction Service, ED 027 610, 1969), pp. 5-8, 14-15.

understanding of the administrator and his methods; however, it is neither required nor necessary for the administrator to have a detailed understanding of the researcher.

(4) mutual-understanding administration and research cannot be separated; in order to have effective implementation of educational research, the primary condition is a mutual understanding of the needs, means, objectives, and restrictions which affect both administrators and researchers.

The results of the study indicated that administrators and researchers were very similar in their perceptions on all four positions. More specifically, the majority of both groups tended to strongly agree with the mutual-understanding position and strongly disagree with the separate-functionalist position. Cook and Damico felt that this indicates that administrators and researchers do have a deep awareness of the need for communication in effectively implementing educational research findings in the schools. Contrary to what others have written, there does appear to be at least some common agreement between these two groups.

Another vital aspect of the school administrator's relationship to educational research is the administrator's dissemination of research to others. Greer[65] has written, for example, that an administrator should have research literature readily available for staff members within his school or district; also he should, on occasion, dispense relevant research articles to such staff members. Regarding principals, Stratton[66] has said that myriad teachers stand ready and willing to

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[65] Greer, p. 240.

[66] Stratton, p. 146.

utilize new methods and techniques, but administrators frequently fail to pass on relevant research to them or give these teachers the support they need to make use of such research. Smittle[67] learned in his study that research-related information is not effectively communicated to the classroom teacher and that institutionalized arrangements for communication are generally poor.

There is some evidence, however, that administrators may fail to adequately perform this disseminating function because they do not view the classroom teacher as being as concerned about research as some may say. Egermeier and Wallace[68] discovered that administrators from ten of the larger school systems in Oklahoma felt that their teachers were definitely not as research-oriented in their behavior as they should be. Three of the more noteworthy ways in which administrators felt teachers were deficient were: teachers only infrequently sought the administrator's assistance in locating research findings relevant to the teacher's particular area of specialization; teachers only infrequently consulted privately with the administrator regarding new educational approaches; and, finally, teachers only infrequently attempted to bring up, or discuss, the subject of new educational approaches in staff meetings.

There are other forms of dissemination besides the school administrator's disseminating educational research findings to teachers.

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[67] George B. Smittle, "A Study of the Perceptions of Teacher Involvement in Critical and Routine Decisions in Selected Schools of Ohio," Dissertation Abstracts 23 (March 1963): 3213-3214.

[68] Egermeier and Wallace, pp. 1-5.

For example, principals and superintendents alike can disseminate relevant research information to other administrators or the lay public; superintendents also can pass along research findings to board of education members. Unfortunately, the literature does not appear to speak to these points.

Summary

The educational inquiry domain can be described as consisting of (1) research (basic and applied), (2) evaluation (action research), (3) development, and (4) diffusion. Research and evaluation are considered primary or direct inquiry activities and differ from development and diffusion by producing knowledge, however general or specific, which was not previously available. Research and evaluation also differ: evaluation, for example, seeks to assess the worth or social utility of a thing while research attempts to assess scientific truth; research results tend to be generalizable across time, geography, and to similar instances of the phenomenon, while evaluation results typically are of parochial importance. Research itself can be subdivided into basic and applied research. Basic research is often called pure research or fundamental research because it pursues knowledge for its own sake; applied research, on the other hand, is an activity which is carried out with practical applications in mind and is characteristically concerned with creating new knowledge for this purpose. Thus it is possible to define AER (applied educational research) and distinguish it from other research and research-related activities.

The school administrator's relationship to AER revolves around three vital questions: (1) how do principals and superintendents acquire knowledge of AER, (2) how do they use AER, and (3) how do they disseminate AER to others? Since unfortunately the literature fails to differentiate between basic research, applied research, and evaluation (action research) when speaking of school administrators, the articles and studies reviewed must be concerned with the administrator's relationship to the global concept of educational research. However, these same articles and studies do provide some insight into the school administrator's relationship to AER.

There are certainly a number of ways a school administrator can acquire knowledge of educational research findings. For example, this can be accomplished through reading different publications; through discussions with fellow educators; through enrolling in further education courses; and through attending conferences, workshops, and institutes. Administrators apparently favor some methods over others.

Regarding the method of reading, administrators seem to feel that much of the research which is reported in educational journals is somewhat difficult to read and understand. Consequently, the research that does, in fact, reach the administrator often goes through a refining process and reaches him through his own administrator periodicals. Unfortunately, one study has shown that the more popular administrator periodicals devote much more attention to reports of existing educational practice than to research findings. Administrators make little of formal research publications like American Educational Research Journal, ERIC, and NEA research bulletins.

Discussions with other educators appears to be a popular method among administrators of acquiring research-related information. That is, administrators tend to look very favorably upon this word-of-mouth technique.

The literature suggests that education courses stressing educational research findings are increasingly more evident in administrator preparation programs; such courses provide a means whereby the school administrator can familiarize himself with current research findings. Regarding formal courses in educational research methodology, administrators typically feel they are weak in statistics and research methods but evidently desire more training in these areas.

Administrators apparently look favorably upon conferences, workshops, and institutes which attempt to disseminate educational research findings and techniques. Administrators seem to like the personal, direct involvement which is inherent in this particular method of research diffusion.

Integral to the school administrator's use of educational research findings is his attitude towards educational research. It appears that many administrators do not have a strong belief in research. However, administrators with more years of experience and those previously involved in different research activities have been found to view research more favorably. There is some evidence that the school administrator's attitude toward research can effect his staff's attitude toward this same subject.

It is posited in the literature that there is little use of educational research in today's schools; there evidently are myriad reasons for this. One study has shown that school administrators are not utilizing the research relevant to their problems as they view research to be of small value in helping them improve their school programs. Another study has demonstrated that administrators can see little connection between educational research activities and innovative classroom practices or school system operations. A third study has shown, however, that administrators and researchers realistically perceive that they have an equal responsibility in implementing educational research findings in the schools.

The literature is far from replete regarding the administrator's dissemination of educational research findings to others (teachers, other administrators, school board members, the lay public). However, one study suggests that research-related information is not effectively communicated to the classroom teacher and institutionalized arrangements for communication are generally poor.

Although the literature typically refers to the administrator's relationship to the global concept of educational research, some insight can be obtained, nevertheless, into how the administrator might acquire knowledge of AER, how he might use AER, and how he might disseminate AER to others.

CHAPTER III

RESEARCH METHOD

The following discussion is concerned with the methodological aspects of this investigation. That is, it covers--in full detail--the sample, measures, design, testable questions, and analysis of the study.

Sample

Two separate and independent populations were under consideration in this investigation: a population of Michigan school principals (elementary, junior high, and senior high principals) and a population of Michigan school superintendents. These populations consisted of Michigan principals and superintendents from K-12 districts with enrollments of 2,000 plus students. Administrators from non K-12 districts or districts with less than 2,000 enrollment were purposely excluded for three specific reasons. First, non K-12 districts are quickly disappearing and eventually will cease to exist in the state; second, many administrators in small districts are not truly principals or superintendents but, in reality, head teachers; third, it would have been costly to have included in this study principals and superintendents from the entire state of Michigan.

A sampling frame or list was obtained of Michigan principals and superintendents from K-12 districts of 2,000 plus enrollment. There were 273 superintendents and 2,832 principals from 273 such districts.

To determine the size of the samples to be drawn from these populations, it was first necessary--according to Stuart[1] and Slonim[2]--to specify the error which would be tolerated, the confidence level desired, and the proportion of agreement to the attribute felt to exist in the population. A tolerated error of .05 and a confidence level of .90 were felt to be reasonable; the proportion of agreement to the attribute was commonly and conservatively set at .50. Making use of the formula[3]

$$\text{tolerated error} = Z_{\alpha/2}\sqrt{\frac{pq}{n-1}\left(\frac{N-n}{N}\right)}$$

where "$Z_{\alpha/2}$" is the Z value for a confidence level of .90, "p" is the proportion of agreement ("q" is the proportion of disagreement) to the attribute, "N" is the population size, and "n" is the sample size to be determined, it was concluded that a sample size of 136 was necessary for the population of superintendents and a sample size of 246 was required for the population of principals. The operational formulas were:

$$\text{for superintendents, } .05 = 1.64\sqrt{\frac{(.5)(.5)}{n-1}\left(\frac{273-n}{273}\right)}$$

$$n = 136$$

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[1]A. Stuart, Basic Ideas of Scientific Sampling (New York: Hafner Publishing Company, 1968), pp. 42-44.

[2]Morris J. Slonim, Sampling (New York: Simon and Schuster, 1960), pp. 72-87.

[3]Maryellen McSweeney, "Unpublished Survey Research Class Notes" (Education 967, Michigan State University, Summer, 1969).

for principals, $$.05 = 1.64\sqrt{\frac{(.5)(.5)}{n-1}\ \frac{2832-n}{2832}}$$

$$n = 246$$

For the desired level of precision and confidence, it was necessary to survey 50% of the superintendent population and 8.7% of the principal population. Table 3.1 summarizes population sizes, sample sizes, and sample sizes as percentages of population sizes for both superintendents and principals.

TABLE 3.1--Superintendent and Principal Population Sizes, Sample Sizes, and Sample Sizes as Percentages of Population Sizes

	Population Size	Sample Size	Sample Size as Percentage of Population Size
Superintendents	273	136	50.0%
Principals	2,832	246	8.7%

To increase the precision of this study, stratified random sampling was chosen as the method of selecting subjects. One stratifying variable was employed: district enrollment size. This particular stratifying variable was chosen because there was some evidence--Godfrey and Ivor[4]--that responses in this area were related to district size. Each population was consequently divided into three strata; these strata

[4]Eleanor P. Godfrey and Wayne Ivor, "Educational Research and the School Administrator," described in Educational Research and Development in the United States (Washington, D.C.: Government Printing Office, 1969), p. 146.

were based on district enrollment sizes of 2,000 to 5,000, 5,001 to 10,000, and 10,001 plus. Proportional sampling--each stratum was sampled at the same proportion--was followed for each population. Tables 3.2 and 3.3 describe the strata, the strata population sizes, the strata sample sizes, and the strata sample sizes as percentages of strata population sizes for superintendents and principals, respectively.

Thus two separate and independent stratified random samples were chosen. Principals and superintendents--not schools or school districts--were the units sampled.

TABLE 3.2--Superintendent Strata Population Sizes, Strata Sample Sizes, and Strata Sample Sizes as Percentages of Strata Population Sizes

Strata	Strata Population Sizes	Strata Sample Sizes	Strata Sample Sizes as Percentages of Strata Population Sizes
2,000-5,000	174	87	50.0%
5,001-10,000	65	32	50.0%
10,001+	34	17	50.0%
Total	273	136	50.0%

TABLE 3.3--Principal Strata Population Sizes, Strata Sample Sizes, and Strata Sample Sizes as Percentages of Strata Population Sizes

Strata	Strata Population Sizes	Strata Sample Sizes	Strata Sample Sizes as Percentages of Strata Population Sizes
2,000-5,000	937	82	8.7%
5,001-10,000	670	58	8.7%
10,001+	1,225	106	8.7%
Total	2,832	246	8.7%

Measures

In an attempt to obtain information on how Michigan principals and superintendents acquire knowledge of applied educational research (AER), how they use AER, and how they disseminate AER to others, a special questionnaire was constructed and pretested for this study. Apart from seven questionnaire items, principal and superintendent questionnaires were identical. (See Appendix A for principal and superintendent questionnaires.)

Besides the cover letter and a reference page, the questionnaire designed for this study had five major parts. The first part (questionnaire items 1-22) attempted to elicit information on how the school administrator acquires knowledge of AER; the second part (items 23-33) was devoted to obtaining information on how the school administrator uses AER and the types of attitudes he holds toward AER; the third part (items 34-42) sought information on how the school administrator

disseminates AER to others. In the fourth part (items 43-47), a particular AER subject--class size and its relation to student achievement--was chosen and questions were framed regarding the school administrator's knowledge, use, and dissemination of AER on this subject. (The thrust of this fourth section was twofold: (1) to build a validity check into the questionnaire, and (2) to bring together, in one practical example, the major facets--knowledge, use, and dissemination--of the school administrator's relationship to AER.) Finally, the fifth part of the questionnaire (items 48-56) attempted to secure information on a number of correlate variables which were thought to be related to the administrator's responses in the knowledge, use, and dissemination areas.

Regarding the cover letter to the questionnaire, an effort was made to cogently and succinctly describe the purpose of the study. The importance of this information to different individuals and groups was also pointed out. To make the questionnaire as personal as possible, with the hope that this would increase the response rate, each respondent's name was typed on the cover letter and every cover letter closed with a personal signature.

Following the cover letter and preceding the different questionnaire sections was a reference page. In the latter, AER was defined and distinguished from basic research, evaluation, and action research. To make the subject of AER even more concrete for the respondent, the titles of ten AER studies (two each from educational administration, educational psychology, educational sociology, curriculum, and counseling) were extracted from professional educational journals and

magazines and included in this reference page. By defining AER and giving examples of certain AER studies, it was hoped that this would preclude the respondent's lumping such activities as library research, data processing and accounting, teacher classroom evaluation, and the like, under the rubric of AER.

Although the questionnaire designed for this study contained both behavior and attitude (opinion) items, greater emphasis was given to behavior items. Mager's[5] perspective was taken into consideration in the selection of the types of items to be used in the questionnaire. Mager has contended that an individual's attitude toward an object is best reflected in his behavior toward that object. That is, an individual with a positive attitude toward an object displays approach behaviors toward that object, while an individual with a negative attitude toward an object displays avoidance behaviors. Thus, by relying quite heavily on behavior items, this study attempted to determine the extent to which principals and superintendents "move toward" or "move away" from AER.

Three types of questionnaire items were employed in the questionnaire designed for this study: (1) objective, forced-choice items, (2) open-ended items requiring a numerical response, and (3) open-ended items requiring a verbal response. Because objective, forced-choice items facilitate data analysis, allow more questions to be asked, and present little problem in evaluating responses, greater emphasis was given to these items.

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[5]Robert F. Mager, Developing Attitude Toward Learning (Belmont, Calif.: Fearon Publishers, 1968), pp. 14-15.

A special type of objective, forced-choice item utilized in the questionnaire was the Likert-type item (questionnaire items 33A-33Q); the Likert-type items attempted to measure the attitudes principals and superintendents hold toward AER. Unlike typical Likert items which have a response continuum ranging from "strongly agree" to "strongly disagree," the Likert-type items used in this study purposely consisted only of "agree," "uncertain," "disagree" response categories. This was done because frequently the more extreme response categories are not used by subjects; plus, in an already rather lengthy questionnaire, finer discriminations would have required subjects to invest even more time and energy. In line with Edward's[6] suggestion for attenuating subject response sets, approximately half (8 items) of the attitude items were written to be favorable to AER while approximately half (9 items) were written to be unfavorable. These favorable and unfavorable items were randomly distributed throughout the set of attitude items.

In the construction of the questionnaire, great care was taken to assure that the language used was readily understandable to school administrators. Since the latter are typically not researchers, specialized research vocabulary was avoided. The suggestions of Backstrom and Hursh,[7] Oppenheim,[8] and Payne[9] were especially important

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[6]Allen Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, Inc., 1957), p. 155.

[7]Charles Backstrom and Gerald Hursh, Survey Research (Evanston, Ill.: Northwestern University Press, 1963), pp. 67-128.

[8]A. N. Oppenheim, Questionnaire Design and Attitude Measurement (New York: Basic Books, Inc., 1966), pp. 24-80.

[9]Stanley L. Payne, The Art of Asking Questions (Princeton, N.J.: Princeton University Press, 1951), pp. 32-99.

in the wording of questions, writing of directions, determination of item response foils, and general layout and design of the questionnaire.

Of the 56 questionnaire items, 49 items were common to both principal and superintendent questionnaires. Seven items (items 9, 10, 11, 14, 15, 41, and 42) differed between the two questionnaires. These differences stemmed from the fact that principals work basically at the school level while superintendents perform their duties at the district level. Although these seven items differed in their wording in the principal and superintendent questionnaires, there was, however, a general one to one correspondence in the types of information sought.

Because there frequently are hidden, undisclosed problems in the initial form of a questionnaire, a pretesting of this measuring instrument was carried out on March 4, 1972. The pretesting was conducted on a group of 26 principals and 6 superintendents; these were administrators involved in a Michigan State University, College of Education Extern Program. Since the ultimate target group of the questionnaire was Michigan principals and superintendents, it was important to pretest the instrument on a select number of these same individuals.

These 32 Michigan administrators were asked to complete the questionnaire plus an attached evaluation sheet. The accompanying evaluation sheet asked the pretest subjects (1) if the purpose of the study was sufficiently clear from the cover letter of the questionnaire, (2) if they were able to "get a grip" on the subject of AER from the reference page of the questionnaire, (3) if the directions to the questionnaire were sufficiently clear, (4) if the language used in the questionnaire was in any way esoteric or difficult to understand,

(5) if any questionnaire items were especially confusing, ambiguous, or redundant, (6) if there were any shortcomings specific to multiple-choice items or open-ended items used in the questionnaire, (7) if they would object to giving their name if they received this questionnaire in the mail, and (8) the length of time needed to complete the questionnaire.

The responses to this evaluation sheet indicated that the vast majority of pretest subjects felt that the purpose of the study was sufficiently clear from the cover letter of the questionnaire; that they could, in fact, "get a grip" on the subject of the AER from the reference page of the questionnaire; that the questionnaire's directions were sufficiently clear; that the questionnaire's language was not typically esoteric or difficult to understand; that the questionnaire's items were not confusing, ambiguous, or redundant; that there weren't any apparent shortcomings to either multiple-choice or open-ended items used in the questionnaire; that they would not object to giving their name if they received the questionnaire in the mail; and that, on the average, it took from fifteen to twenty minutes to complete the questionnaire.

In the pretested form of the questionnaire, the Likert type items (items 33A-33Q) had dichotomous response categories of "agree" and "disagree." Many pretest subjects indicated on the evaluation sheet, however, that they did not like, or felt uncomfortable with, such an arrangement. What they desired was a middle or neutral category. Consequently, because of this pretesting, the final questionnaire had "agree," "uncertain," "disagree" categories for the Likert type items.

Besides scrutinizing pretest subject answers to the questionnaire's evaluation sheet, responses to the individual questionnaire

items were also tallied and examined. This was necessary in order to determine the variance of responses, or the ability of individual questionnaire items to discriminate. Many of the items in the pretested form of the questionnaire had a "Yes," "No" response format; pretesting indicated that frequently there was a disproportionate number of "Yes" or disproportionate number of "No" responses. Responses categories of finer gradations were obviously necessary. Consequently, because of the pretesting, questionnaire items 1, 3, 23, 25, 27, 29, 31, 34A, 34B, and 34C were changed from a "Yes," "No" format to a "frequently," "occasionally," "seldom," "never" format. It would have to be concluded that the pretesting of the questionnaire proved to be extremely valuable.

Design

A typical survey design was employed in this investigation. That is, after defining certain populations and sampling from these populations, a questionnaire was sent to sample members and subsequent follow-ups were made to non-respondents.

As the first stage of this design, 382 questionnaires were mailed on March 30, 1972. These went to the original samples of 136 superintendents and 246 principals. By April 16, (2 1/2 weeks after the original mailing), only 88 of the 382 administrators had responded. Consequently, a reminder letter[10] (see Appendix A) was sent out to the 294 non-respondents (91 superintendents, 203 principals) urging them to complete

[10] Each reminder letter and subsequent questionnaire opened with the subject's name and closed with a personal signature. It was hoped that by making the communication as personal as possible, a greater response rate would result.

and forward the questionnaire. The latter was the second stage of this survey design.

As of May 2 (4 weeks after the original mailing) 154 administrators had responded; however, 228 other administrators had failed to mail back their questionnaires. On this date, telephone calls were begun to 107 (24 superintendents, 83 principals) of these non-respondents. These were administrators who could be contacted through the Michigan State University telephone centrex system; such administrators represented districts in the Detroit, Ann Arbor, Pontiac, and Grand Rapids metropolitan areas. Administrators reached by telephone were asked if they had received the original questionnaire and, if so, would they please complete and forward it. At least thirty of these administrators requested that another copy of the questionnaire be sent to them; this naturally was done. By May 15 (6 weeks after the original mailing) 183 administrators had responded while 199 had failed to return their questionnaire. A second questionnaire was then mailed to 104 administrators (44 superintendents, 60 principals) who had not been contacted by telephone and who had not yet responded. These were non-respondents who could not be contacted by telephone because they were located outside of the regions serviced by the university's centrex system. The telephone contacts and the second mailing of the questionnaire to those located outside of the centrex system constituted the third stage of this survey design.

Thus there were three stages of this survey design. Stage one was the original mailing of the questionnaire; stage two was the mailing of the reminder letter; and stage three was the telephone contacts and

second mailing of the questionnaire to those located outside of the centrex system. These survey design stages brought a return from 241 of the original 382 administrators. The last questionnaire was returned on June 9 (9 weeks after the original mailing).

Table 3.4 chronologically outlines the mailings of the first questionnaire and the reminder letter, the telephone contacts, and the mailing of the second questionnaire; it also summarizes the rates of response.

By June 9, 85 of the original sample of 136 superintendents had responded; this was a return rate of 62.5%. By this date 156 (63.4%) of the original sample of 246 principals had responded. Tables 3.5 and 3.6 describe the respective responses of the stratified samples of superintendents and principals.

Two things might be noted from Tables 3.5 and 3.6. First, for both superintendents and principals, there is some variance in the percentage response rates of the different strata. Second, there is little difference in the overall response rates of superintendents (62.5%) and principals (63.4%).

Appendix A contains further information identifying the superintendents and principals who responded to the questionnaire. More specifically, superintendents and principals are described by sex, age, years of educational experience, and highest college degree obtained; principals are also described in terms of whether they administer an elementary, junior high, or senior high school.

TABLE 3.4--Chronological Schedule of Mailings of First Questionnaire and Reminder Letter, Telephone Contacts, and Mailing of Second Questionnaire; Plus Rates of Response

Date	Action Taken	Number of Administrators Who Had Responded by This Date	Number of Administrators Who Had Failed to Respond by This Date
March 30, 1972	382 questionnaires (136 supts., 246 prins.) sent out	...	...
April 16 (2 1/2 weeks after original mailing)	Reminder letter sent out to 294 non-respondents (91 supts., 203 prins.)	88	294
May 2 (4 weeks after original mailing)	Telephone calls begun to 107 non-respondents (24 supts., 83 prins.) in the Detroit, Ann Arbor, Pontiac, and Grand Rapids metropolitan areas	154	228
May 15 (6 weeks after original mailing)	A second questionnaire sent out to 104 non-respondents (44 supts., 60 prins.) who were located outside of telephone regions	183	199
June 9 (9 weeks after original mailing)	Last questionnaire received	241	141

TABLE 3.5--Responses of Superintendents by Strata

Strata	Strata Sample Sizes	Number of Superintendents Responding	Percentage of Superintendents Responding
2,000-5,000	87	50	57.5%
5,001-10,000	32	24	75.0%
10,001+	17	11	64.7%
Total	136	85	62.5%

TABLE 3.6--Responses of Principals by Strata

Strata	Strata Sample Sizes	Number of Principals Responding	Percentage of Principals Responding
2,000-5,000	82	57	69.5%
5,001-10,000	58	38	65.5%
10,001+	106	61	57.5%
Total	246	156	63.4%

Testable Questions

The three broad research questions which this study directs itself to (see Chapter I) may be broken down into somewhat more specific questions:

1. How do Michigan principals and superintendents acquire knowledge of AER?
   a. Do school administrators read AER studies which are reported in educational or commercial publications?
   b. Do school administrators discuss AER studies with other educators (other administrators, teachers)?
   c. Are school administrators interested in enrolling in education courses which stress AER studies, or educational research methodology courses?
   d. Are school administrators interested in attending conferences or workshops which attempt to disseminate AER findings?
   e. Do school administrators favor some methods of learning of AER findings over other methods?
   f. Do school administrators feel that the appropriate amount of attention is being given to the dissemination of AER?
   g. How knowledgeable do school administrators perceive they are on AER findings?
   h. What variables seem to be important in school administrators' knowledge of AER findings?
   i. How knowledgeable are school administrators on AER findings in a particular subject (class size and its relation to student achievement)?

2. How do Michigan principals and superintendents use AER?
   a. Do school administrators use AER in their everyday, operating decisions?
   b. Do school administrators use AER in leading and directing their staffs?
   c. Do school administrators use AER in the developing of new educational programs?
   d. Do school administrators use AER in their relations with the lay public?
   e. Do school administrators use AER in the furthering of their professional growth?
   f. Do school administrators use AER more frequently in some areas than in other areas?
   g. What attitudes do school administrators have toward AER and how do these attitudes relate to their use of AER?
   h. What variables seem to be important in school administrators' use of AER findings?
   i. Do school administrators use the AER findings available on the particular subject of class size and its relation to student achievement?

3. How do Michigan principals and superintendents disseminate AER to others?
   a. Do school administrators discuss AER with other educators (other administrators, teachers) or non-educators (lay public, school board members)?

b. Do school administrators pass along relevant AER articles to others (teachers, other administrators, school board members)?

c. Is AER literature readily available for others within school administrators' schools or school districts?

d. Do school administrators feel it is part of their professional responsibility to keep others (teachers, other administrators, school board members, lay public) up-to-date on AER?

e. What variables seem to be important in school administrators' dissemination of AER to educators (other administrators, teachers)?

f. Do school administrators disseminate the AER findings available on the particular subject of class size and its relation to student achievement to others (teachers, other administrators, school board members, lay public)?

Analysis

Almost all of the items making up the questionnaire were included in one or more statistical analyses. A questionnaire item was excluded from analysis (1) if many subjects failed to respond to the item, (2) if individual subjects frequently checked two or more of the item's response categories, or (3) if it was subsequently determined that the item was not of crucial importance. In the principal and superintendent forms of the questionnaire in Appendix A, frequency and percentage breakdowns are provided for objective, forced-choice items; means and standard

deviations are also given for open-ended questions requiring a numerical response.

Before discussing the statistical tests used in this study, mention must be made of two special measures formed from particular questionnaire items. These two special measures were (1) the AER Knowledge Index, and (2) the AER Use Index. The AER Knowledge Index was based on questionnaire item 19 and was a measure of the extent to which the school administrator perceives he is knowledgeable on AER findings in the overall areas of educational administration, educational psychology, educational sociology, curriculum, and counseling. The AER Use Index, on the other hand, was formed from questionnaire items 23, 25, 27, 29, and 31 and was a measure of the extent to which the school administrator perceives he uses AER in five critical areas: in everyday, operating decisions; in the leadership of staff; in the developing of new educational programs; in relations with the lay public; and in the furthering of one's professional growth.

As mentioned previously, the AER Knowledge Index was based on questionnaire item 19 which is presented below:

Item 19) "In your estimation, how knowledgeable are you on AER findings in <u>each</u> of the following areas? Please place a check in each row."

	Very knowledgeable	Moderately knowledgeable	Slightly knowledgeable	Not knowledgeable
Ed. Administration	_____	_____	_____	_____
Ed. Psychology	_____	_____	_____	_____
Ed. Sociology	_____	_____	_____	_____
Curriculum	_____	_____	_____	_____
Counseling	_____	_____	_____	_____

By taking each particular area and assigning a weight of 4 for a "very knowledgeable" response, a weight of 3 for a "moderately knowledgeable" response, a weight of 2 for a "slightly knowledgeable" response, and a weight of 1 for a "not knowledgeable" response, and then summing over the areas, an overall self-perception AER Knowledge Index score was available for each individual. The maximum score that an individual could have received was 20 (answering "very knowledgeable" for all areas); the minimum score was 5 (answering "not knowledgeable" for all areas). It was expected, of course, that the vast majority of individuals would have scores somewhere between 5 and 20. The higher the individual's AER Knowledge Index score, the more knowledgeable he considered himself regarding AER findings in the overall areas of educational administration, educational psychology, educational sociology, curriculum, and counseling.

Short of an actual "achievement test" (which would have measured how knowledgeable the school administrator <u>really was</u> on AER findings in educational administration, educational psychology, educational sociology, curriculum, and counseling), the AER Knowledge Index (which asked the administrator how knowledgeable he <u>perceived he was</u> on AER findings in these areas) was considered the best guide to a principal's or superintendent's state of knowledge on AER findings.

A reliability coefficient was calculated for the AER Knowledge Index for both principals and superintendents. Using the Hoyt analysis of variance method[11] of computing a reliability coefficient, this

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[11] Cyril J. Hoyt, "Test Reliability Estimated by Analysis of Variance," in <u>Principles of Educational and Psychological Measurement</u>, eds., William A. Mehrens and Robert L. Ebel (Chicago, Ill.: Rand McNally and Company, 1967), pp. 108-115.

particular index had a reliability coefficient of .84 for principals (n = 147) and .86 for superintendents (n = 82).

The second special measure, the AER Use Index, was constructed from questionnaire items 23, 25, 27, 29, and 31; these items are presented below:

Item 23) "Are you able to utilize AER in the everyday, operating decisions an administrator must make when conducting an ongoing educational program?"

____frequently ____occasionally ____seldom ____never

Item 25) "Are you able to utilize AER in the leadership of your staff?"

____frequently ____occasionally ____seldom ____never

Item 27) "Are you able to utilize AER in the developing of new educational programs?"

____frequently ____occasionally ____seldom ____never

Item 29) "Are you able to utilize AER in your relations with the lay public?"

____frequently ____occasionally ____seldom ____never

Item 31) "Are you able to utilize AER in the furthering of your professional growth?"

____frequently ____occasionally ____seldom ____never

The AER Use Index was constructed by combining each of the five AER use areas (everyday, operating decisions--item 23; leadership of staff--item 25; developing of new educational programs--item 27; relations with the lay public--item 29; and furthering of professional growth--item 31).

By taking each particular use area and assigning a weight of 4 for a "frequently" response, a weight of 3 for an "occasionally" response, a weight of 2 for a "seldom" response, and a weight of 1 for a "never" response and then summing over the use areas, an overall AER Use Index score was available for each individual. Like the AER Knowledge Index, the maximum score that an individual could have received on the AER Use Index was 20 (answering "frequently" for all five use areas), the minimum score was 5 (answering "never" for all five use areas). The higher a principal's or superintendent's AER Use Index score, the more he believed he used AER in these particular areas.

Using the Hoyt analysis of variance method again to compute reliability coefficients, the AER Use Index was calculated to have a reliability coefficient of .88 for principals (n = 145) and .82 for superintendents (n = 77).

The unit of analysis in this study, it will be remembered, was the school administrator. That is, principals were randomly sampled from a defined population of Michigan principals; likewise, superintendents were randomly selected from a Michigan superintendent population. Consequently, results were meant to be generalizable to these respective populations and not to a population of schools or school districts.

To be able to generalize to these principal and superintendent populations, it was necessary to construct confidence intervals for population proportions based on a range of possible sample proportions. With a return of 85 questionnaires from a population of 273 superintendents plus a return of 156 questionnaires from a population of 2,832 principals, Table 3.7 provides a set of 90% confidence intervals (for

superintendent and principal population proportions) based on sample proportions ranging from .10 to .90.

TABLE 3.7--90% Confidence Intervals for Superintendent and Principal Population Proportions (P) Based on a Range of Possible Sample Proportions (p)

	90% Confidence Interval for P	
p	Superintendents	Principals
.10	.06 < P < .14	.06 < P < .14
.20	.15 < P < .25	.15 < P < .25
.30	.24 < P < .36	.24 < P < .36
.40	.33 < P < .47	.34 < P < .46
.50	.43 < P < .57	.44 < P < .56
.60	.53 < P < .67	.54 < P < .66
.70	.64 < P < .76	.64 < P < .76
.80	.75 < P < .85	.75 < P < .85
.90	.86 < P < .94	.86 < P < .94

Regarding the different inferential statistical analyses run on the data, one of the more basic tests utilized was the chi-square test of homogeneity. The latter test examines the similarity of two or more frequency distributions.[12] In this study, the chi-square test of homogeneity was frequently used to test the similarity of principals' and superintendents' responses to a particular forced-choice item; also it was used to compare a particular group's (principals or superintendents) responses to two completely different forced-choice items. A contingency

[12] Maryellen McSweeney, "Unpublished Survey Research Class Notes."

coefficient, which Siegel[13] describes as a non-parametric measure of the extent of association between two sets of attributes, was run in conjunction with all significant chi-square tests. Unlike the Pearson r, the upper limit of the contingency coefficient, it might be added, is not 1 but varies in relation to the size of the contingency table (upper limit for a 2 X 2 table is .707, for a 3 X 3 table is .816, and so on). Chi-square and contingency coefficient values were obtained through the use of the Computer Institute for Social Science Research's (CISSR) ACT computer program and the M.S.U. CDC 6500 computer.

One way analysis of variance tests were also conducted on certain data. Since this test permits the comparison of two or more group means,[14] it was possible to contrast the responses of principals and superintendents (1) to the AER Knowledge and the AER Use Indexes and, (2) to certain open-ended questions requiring numerical responses. These analyses were made possible through the use of CISSR's UNEQ 1 computer program and the CDC 6500 computer.

Another statistical analysis employed was the repeated measure design analysis of variance. The latter test is valuable in comparing the responses of the same individuals to two or more measures as it takes into account the dependency which exists between observations.[15]

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[13] Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw Hill Book Company, Inc., 1956), p. 196.

[14] William L. Hays, Statistics for Psychologists (New York: Holt, Rinehart, and Winston, 1966), pp. 356-373.

[15] Paul A. Games and George R. Klare, Elementary Statistics: Data Analysis for the Behavioral Sciences (New York: McGraw Hill Book Company, Inc., 1967), pp. 540-549.

In this study it was thus possible to examine a particular group's (principals or superintendents) responses to two or more open-ended questions requiring a numerical response. The Michigan State University College of Education, Office of Research Consultation's PROFILE computer program and the CDC 3600 computer were utilized in these analyses.

A stepwise delete multiple linear regression analysis was also frequently used in this study. (Draper and Smith[16] have described this as the backward elimination regression procedure.) An attempt is made in this analysis to estimate a "best" relationship between a dependent variable and a set of independent variables. That is, this technique chooses for inclusion in the regression equation only those variables which appear to be most significant. Operationally, a series of regression equations are computed in steps with one independent variable deleted per step. Independent variables are deleted when they fail to meet a specified criterion; this criterion is the significance probability of the F statistic for the least square coefficient of a variable. The process is terminated when all remaining variables in the regression equation meet the specified criterion. Thus a set of independent variables are reduced to a somewhat smaller set of variables which correlate well with the dependent variable but have small intercorrelations amongst themselves.

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[16] N. R. Draper and H. Smith, Applied Regression Analysis (New York: John Wiley and Sons, Inc., 1966), pp. 167-168.

This particular type of regression analysis was used to examine principals' and superintendents' scores on the AER Use Index in concert with their responses to the Likert-type attitude items. The objective was to determine possible reasons school administrators might have for using, or not using, AER. Using this same statistical technique, an attempt was made to relate certain correlate items to principals' and superintendents' responses to the AER Knowledge Index, the AER Use Index, and two particular dissemination of AER items. This was valuable in investigating possible variables important in the school administrator's knowledge, use, and dissemination of AER.

With the use of CISSR's LSSTEP computer program and the CDC 6500 computer, partial correlation coefficients, multiple correlation coefficients, and F values for the analysis of variance for the overall regression were obtained. The specified criterion utilized in determining whether independent variables should be deleted during this regression analysis was consistently set at .10.

All inferential statistical tests used in this study (the chi-square test of homogeneity, the one way analysis of variance, the repeated measure design analysis of variance, and the stepwise delete multiple linear regression analysis) were conducted at the .05 level of significance.

Summary

Two distinct populations were considered in this study: a population of Michigan principals and a population of Michigan superintendents. These populations consisted of Michigan principals and

superintendents from K-12 districts with enrollments of 2,000 plus students; there were 273 such superintendents and 2,832 such principals. With a tolerated error of .05 and a desired confidence level of .90, two separate and independent random samples were drawn. For this degree of precision and confidence, it was necessary to sample 136 superintendents (50% of the superintendent population) and 246 principals (8.7% of the principal population). Stratified random sampling was employed to increase the precision of the study. Because district enrollment size was felt to be a sound stratifying variable, three strata (based on district enrollment sizes of 2,000-5,000; 5,001-10,000; 10,001 plus) were formed in each population. Proportional sampling was followed across strata. Principals and superintendents, not schools or school districts, were the units sampled in this study.

To obtain the desired information, it was necessary to design a special questionnaire. The questionnaires ultimately constructed for the principal and superintendent samples were identical on all but seven items. Besides a cover letter (which outlined the purpose and scope of the study) and a reference page (which defined Applied Educational Research and gave examples of particular AER studies), the questionnaire designed for this study had five major parts: part one attempted to elicit information on how the school administrator acquires knowledge of AER; part two was devoted to obtaining information on how the school administrator uses AER and the types of attitudes he holds toward AER; part three sought information on how the school administrator disseminates AER to others; part four attempted to obtain information on the

school administrator's knowledge, use, and dissemination of AER on a particular subject (class size and its relation to student achievement); part five, finally, was concerned with securing information on a number of correlate variables which were thought to be related to the administrator's responses in the knowledge, use, and dissemination areas.

To uncover any hidden defects in the questionnaire, a pretesting of the measuring instrument was conducted on a select group of both principals and superintendents. Some alterations (for example, changes in the response categories of certain items) were found to be necessary. The final questionnaire consisted of objective, forced-choice items; open-ended items requiring a numerical response; and open-ended items requiring a verbal response. The greatest emphasis was given to objective, forced-choice items.

A typical survey design was employed in this study. That is, after defining certain populations and sampling from these populations, a questionnaire was mailed to sample subjects and subsequent follow-ups were made to non-respondents. Follow-up techniques included a reminder letter, telephone contacts, and a second mailing of the questionnaire.

The first mailing of the questionnaire occurred on March 30, 1972; approximately nine weeks later (June 9) the last questionnaire was returned. Eighty-five superintendents (62.5%), out of an original sample of 136 superintendents, responded; one hundred and fifty-six principals (63.4%), from the original sample of 246 principals, returned the questionnaire.

The three broad research questions which this study directs itself to (1. How do Michigan principals and superintendents acquire

knowledge of AER; 2. How do Michigan principals and superintendents use AER; and 3. How do Michigan principals and superintendents disseminate AER to others?) were ultimately subdivided into more specific, testable questions. The data were then analyzed in terms of these latter questions.

To aid in this analysis, two special measures (an AER Knowledge Index and an AER Use Index) were formed from particular questionnaire items. The AER Knowledge Index was based on questionnaire item 19 and was a measure of the extent to which school administrators perceive they are knowledgeable on AER findings in the overall areas of educational administration, educational psychology, educational sociology, curriculum, and counseling. The AER Use Index, on the other hand, was formed from responses to questionnaire items 23, 25, 27, 29, and 31 and was a measure of the extent to which school administrators perceive they use AER in five critical areas: in everyday, operating decisions; in the leadership of staff; in the developing of new educational programs; in relations with the lay public; and in the furthering of one's professional growth.

Because principals and superintendents were the units sampled in this study, all results were generalizable to these respective populations. Ninety percent confidence intervals for superintendent and principal population proportions were constructed based on a range of possible sample proportions. Other inferential statistical techniques utilized in this study were the chi-square test of homogeneity, the one way analysis of variance, the repeated measure design analysis of variance, and the stepwise delete multiple linear regression analysis. All such tests were conducted with alpha set at the .05 level.

CHAPTER IV

PRESENTATION OF RESULTS

The three broad research questions of Chapter I were subdivided into somewhat more specific, testable questions in Chapter III. In this chapter, the broad research questions are again presented together with the more specific questions. The data obtained relevant to these latter questions are then set forth.

Question 1: How do Michigan principals and superintendents acquire knowledge of AER?[1]

Question 1a: Do school administrators read AER studies which are reported in educational or commercial publications?

In the questionnaire designed for this study, a distinction was made between administrators reading AER studies which are reported in educational versus commercial publications. When principals and superintendents were asked whether they read AER studies which are reported in educational journals or magazines (questionnaire item 1), 75% of the responding principals and 85% of the responding superintendents answered "occasionally" or "frequently." Regarding those administrators who do, in fact, read AER studies from educational publications, it was found that principals and superintendents read an average of 3.46 and 3.93

[1]AER--Applied Educational Research.

studies per month, respectively (questionnaire item 2b). When these same administrators were also asked in questionnaire item 2a if they typically read the original study (as reported by the researcher) or an account of the study (as reported by someone other than the researcher), 88% of these principals and 86% of these superintendents answered "an account of the study."

Concerning the reading of AER studies from commercial publications, it was observed that 75% of the principals and 81% of the superintendents said they occasionally or frequently read such studies from commercial magazines or newspapers (questionnaire item 3). Principals and superintendents making use of such commercial publications were found to read an average of 4.56 and 3.75 AER studies per month, respectively (questionnaire item 4).

In comparing the mean number of AER studies administrators read from educational (questionnaire item 2b) versus commercial (questionnaire item 4) publications, it was discovered that principals tend to read significantly more AER studies from commercial magazines or newspapers than from educational journals or magazines (see Table B1). However, it could not be shown that superintendents read significantly more AER studies from one source than from the other (see Table B2).

It was also deemed important to establish in what areas school administrators tend to read AER studies. In questionnaire item 6, administrators were asked if they read AER studies in educational administration, educational psychology, educational sociology, curriculum, and counseling. In comparing principals' and superintendents' responses in these different areas, only in the area of educational

administration were principals and superintendents found to differ (see Tables B3, B4, B5, B6, and B7). That is, although many principals (81%) read AER studies in the area of educational administration, almost all of the responding superintendents (98%) read AER in this same area.

In addition, the responses to questionnaire item 6 were helpful in determining whether principals and superintendents tend to read more AER studies in some areas than in other areas. Principals and superintendents were both found to be selective in the reading of AER studies (see Tables 4.1 and 4.2). Principals, for example, evidently regard curriculum (83% of responding principals said they read in this area) and educational administration (81%) as high priority areas, with educational psychology (38%) being somewhat less than a medium priority area, and counseling (22%) and educational sociology (19%) being rather low priority areas. With superintendents, educational administration holds a very high priority (98% of the responding superintendents said they read in this area) with curriculum (88%) rather close behind. Educational psychology (39%), educational sociology (28%), and counseling (12%) are distant third, fourth, and fifth priority items, respectively.

In questionnaire item 5, an attempt was made to determine if school administrators sometimes have difficulty with either the language, terminology used in AER studies or the research methods employed in these studies. Over half of the responding principals (52%) and almost half of the responding superintendents (47%) felt that the language, terminology used in AER studies is at least occasionally, and sometimes frequently,

TABLE 4.1--Chi-Square Comparison of Principals' Responses to the Different Subject Areas Listed in Item 6[a]

Subject Area	Reading	Not Reading	Total
Educ. Administration	125 (81%)	30 (19%)	155 (100%)
Educ. Psychology	59 (38%)	96 (62%)	155 (100%)
Educ. Sociology	29 (19%)	126 (81%)	155 (100%)
Curriculum	129 (83%)	26 (17%)	155 (100%)
Counseling	34 (22%)	121 (78%)	155 (100%)

$\chi^2 = 244.51$, $P < .001$; contingency coefficient = .49

[a]Item 6 read, "In which area(s) do you tend to read applied educational research studies? Please check one or more."

TABLE 4.2--Chi-Square Comparison of Superintendents' Responses to the Different Subject Areas Listed in Item 6

Subject Area	Reading	Not Reading	Total
Educ. Administration	83 (98%)	2 (2%)	85 (100%)
Educ. Psychology	33 (39%)	52 (61%)	85 (100%)
Educ. Sociology	24 (28%)	61 (72%)	85 (100%)
Curriculum	75 (88%)	10 (12%)	85 (100%)
Counseling	10 (12%)	75 (88%)	85 (100%)

$\chi^2 = 196.14$, $P < .001$; contingency coefficient = .57

difficult to understand (questionnaire item 5a). Likewise, almost three-quarters of the principals (71%) and superintendents (74%) were of the opinion that the research methods (research design, instrumentation, and statistical analysis) employed in AER studies are occasionally or frequently difficult to understand (questionnaire item 5b).

To discover whether it is the language, terminology or the research methods which presents the greater problem for school administrators, the responses to questionnaire items 5a and 5b were compared for each group (see Tables 4.3 and 4.4). When reading AER studies, principals and superintendents alike tend to view the research methods employed as somewhat more difficult to understand than the language, terminology used in the studies.

Relevant to the school administrator's reading of AER studies is his ability to locate AER on topics of interest. When asked in questionnaire item 7 how much difficulty they would typically encounter in trying to locate AER on a given educational topic, 75% of the principals and 80% of the superintendents said they would have from small to a medium amount of difficulty.

Also judged significant was the number of times the school administrator was found to go to the literature in an attempt to obtain AER on topics of interest. When asked, in questionnaire item 8, on how many occasions during the past year they found it necessary to survey the literature for AER on particular educational topics, principals and superintendents responded with 1.95 and 3.32 mean number of occasions per year, respectively. In comparing the means for these two groups of

TABLE 4.3--Chi-Square Comparison of Principals' Responses to Items 5a and 5b[a]

Difficulty with the	Frequently	Occasionally	Seldom	Never	Total
Language, terminology (5a)	9 (6%)	72 (46%)	68 (44%)	6 (4%)	155 (100%)
Research methods (5b)	25 (16%)	83 (55%)	42 (28%)	2 (1%)	155 (100%)

$\chi^2 = 16.58$, $P < .001$; contingency coefficient = .22

[a]Item 5 read, "When reading applied educational research studies which are reported in either educational journals and magazines or commercial newspapers and magazines: a) Do you find the language or terminology used in these studies somewhat difficult to understand? b) Do you find the research methods (for example, research design, instrumentation, and statistical analysis) used in these studies somewhat difficult to understand?"

TABLE 4.4--Chi-Square Comparison of Superintendents' Responses to Items 5a and 5b

Difficulty with the	Frequently	Occasionally	Seldom	Never	Total
Language, terminology (5a)	5 (6%)	35 (41%)	41 (48%)	4 (5%)	85 (100%)
Research methods (5b)	10 (12%)	53 (62%)	20 (24%)	2 (2%)	85 (100%)

$\chi^2 = 13.22$, $P < .01$; contingency coefficient = .26

administrators, superintendents were somewhat more likely than were principals to survey the literature for AER (see Table B8).

An attempt was made in questionnaire item 9 to determine the number of administrators who personally subscribe to educational journals, magazines, or publications which emphasize AER studies. Fifty-five percent of the responding principals and forty-five percent of the responding superintendents said they personally subscribe to AER-oriented publications. When asked in questionnaire item 10 if their schools (principals) or school districts (superintendents) subscribe to educational publications emphasizing AER studies, 84% of the principals said their schools subscribe to such publications while 83% of the superintendents said their school districts subscribe to these publications. Apparently, both principals and superintendents are more likely to have their school or school district subscribe to educational publications with an AER bent than to personally subscribe to such publications themselves. Nevertheless, the vast majority of principals and superintendents have such materials at hand.

In questionnaire items 11a and 11b, administrators were asked to list the AER-oriented publications which they personally subscribe to, plus the AER-oriented publications which their schools (principals) or school districts (superintendents) subscribe to. It was found that while principals were likely to personally subscribe to Phi Delta Kappan, The Education Digest, and The National Elementary Principal, superintendents subscribed most frequently to Phi Delta Kappan. The periodicals which principals said their schools were most likely to subscribe

to were The Education Digest, Grade Teacher, and The Instructor. Superintendents' school districts, on the other hand, subscribed most frequently to The Education Digest, School Management, and Nation's Schools (see Table B9). Although there are some differences between the types of publications principals and superintendents have around them, it is noteworthy that both groups seem to make great use of Phi Delta Kappan and The Education Digest. It might also be noted that there is a great variance in the AER orientation of the periodicals which school administrators make use of.

Question 1b: Do school administrators discuss AER studies with other educators (other administrators, teachers)?

Besides reading AER studies, another method whereby administrators can learn of AER findings is through discussions with fellow educators (other administrators and teachers). When principals and superintendents were asked in questionnaire item 12 how frequently, on the average, they discussed AER studies with other administrators (administrators either within or outside their school district), the modal response for each group was once per month. Nevertheless, superintendents were somewhat more apt than were principals to discuss AER with other administrators (see Table B10). This latter finding is possibly a reflection of the fact that superintendents, by virtue of their position, tend to interact somewhat more frequently with other administrators than do principals. When these same principals and superintendents were asked if other administrators generally value

AER (questionnaire item 13), the majority of principals (55%) and superintendents (64%) felt that other administrators attach medium to great value to AER.

Principals and superintendents were also asked how frequently they discussed AER studies with teachers (questionnaire item 14), While principals had a modal response of once a month for teachers in their schools, superintendents had a bimodal response of zero times a month and once a month for teachers in their school systems. In questionnaire item 15, principals and superintendents were questioned on the amount of value teachers assign to AER. Less than a majority of principals (43%) felt that teachers in their particular schools attach medium to great value to AER; likewise, less than a majority of superintendents (42%) perceived that teachers within their school systems place medium to great value on AER.

In an attempt to discover whether school administrators discuss AER studies equally often with teachers and other administrators, the responses to questionnaire items 12 and 14 were compared for each group (see Tables B11 and B12). While principals apparently discuss AER studies equally often with teachers and other administrators, superintendents were much more apt to discuss AER studies with other administrators than with teachers.

Also in an attempt to determine whether school administrators perceive that teachers and other administrators place the same amount of value on AER, the responses to questionnaire items 13 and 15 were compared for each group (see Tables 4.5 and 4.6). It was observed that

TABLE 4.5--Chi-Square Comparison of Principals' Responses to Items 13 and 15[a]

Value Placed on AER by	Great Value	Medium Value	Small Value	No Value	Total
Other Administrators (13)	8 (6%)	66 (49%)	60 (45%)	0 (0%)	134 (100%)
Teachers (15)	1 (1%)	59 (42%)	76 (54%)	5 (3%)	141 (100%)

$\chi^2 = 14.56$, $P < .01$; contingency coefficient = .22

[a]Item 13 read, "Do you feel that other administrators (administrators within or outside your school district) generally value applied educational research?" Item 15 read, "Do you feel that teachers in your particular school generally value applied educational research?"

TABLE 4.6--Chi-Square Comparison of Superintendents' Responses to Items 13 and 15[a]

Value Placed on AER by	Great Value	Medium Value	Small Value	No Value	Total
Other Administrators (13)	7 (9%)	45 (55%)	28 (35%)	1 (1%)	81 (100%)
Teachers (15)	1 (1%)	30 (41%)	41 (55%)	2 (3%)	74 (100%)

$\chi^2 = 10.08$, $P < .02$; contingency coefficient = .25

[a]Item 13 read, "Do you feel that other administrators (administrators within or outside your school district) generally value applied educational research?" Item 15 read, "Do you feel that teachers in your school system generally value applied educational research?"

principals and superintendents alike felt that other administrators assign somewhat more value to AER than do teachers.

Question 1c: Are school administrators interested in enrolling in either education courses which stress AER studies, or educational research methodology courses?

Yet another method whereby school administrators can increase their knowledge of AER findings is through the taking of further education courses. When principals and superintendents were asked, in questionnaire item 16, how inclined they would be to enroll in courses which strongly emphasized AER studies, over one-half of the responding principals (57%) and over two-thirds of the responding superintendents (69%) said that they were moderately to very inclined. When these same administrators were asked, in questionnaire item 17, how inclined they would be to enroll in educational research methodology courses (that is, courses emphasizing measurement, statistics, and research design), less than a majority of principals (37%) and superintendents (40%) replied that they were moderately inclined or very inclined.

To determine whether school administrators were equally interested in enrolling in education courses which emphasized AER findings and educational research methodology courses, the responses to questionnaire items 16 and 17 were compared for each group (see Tables 4.7 and 4.8). It was observed that both principals and superintendents were much more interested in enrolling in AER findings courses than in educational research methodology courses. That is, these administrators were much more interested in knowing the results of AER studies than in knowing the methods whereby such studies can be carried out.

TABLE 4.7--Chi-Square Comparison of Principals' Responses to Items 16 and 17[a]

Courses Involving	Very Inclined	Moderately Inclined	Slightly Inclined	Not Inclined	Total
AER Findings (16)	22 (14%)	67 (43%)	50 (32%)	17 (11%)	156 (100%)
Educational Research Methodology (17)	13 (8%)	45 (29%)	50 (32%)	48 (31%)	156 (100%)

$\chi^2 = 21.40$, $P < .001$; contingency coefficient = .24

[a]Item 16 read, "In taking further education courses, how inclined would you be to enroll in courses which strongly emphasize applied educational research studies?" Item 17 read, "In taking further education courses, how inclined would you be to enroll in educational research methodology courses (that is, courses emphasizing measurement, statistics, and research design)?"

TABLE 4.8--Chi-Square Comparison of Superintendents' Responses to Items 16 and 17

Courses Involving	Very Inclined	Moderately Inclined	Slightly Inclined	Not Inclined	Total
AER Findings (16)	18 (21%)	41 (48%)	17 (20%)	9 (11%)	85 (100%)
Educational Research Methodology (17)	14 (16%)	20 (24%)	30 (35%)	21 (25%)	85 (100%)

$\chi^2 = 16.10$, $P < .01$; contingency coefficient = .30

Question 1d: Are school administrators interested in attending conferences or workshops which attempt to disseminate AER findings?

Finally another method by which school administrators can acquaint themselves with AER findings is through attending conferences or workshops which attempt to disseminate AER findings. In questionnaire item 18, principals and superintendents were asked whether they felt that, given the opportunity, they would be interested in attending a conference or workshop devoted primarily to the explanation and discussion of AER findings. Roughly six out of every ten principals (59%) and superintendents (63%) replied that they were moderately interested or very interested.

Question 1e: Do school administrators favor some methods of learning of AER findings over other methods?

In questionnaire item 20, principals and superintendents were asked to rank the different methods (education courses; discussions with other educators; reading of education and commercial publications; conferences, workshops, conventions; television, radio) by which they learn of AER. There were observed differences in the popularity of these methods for both groups (see Tables 4.9 and 4.10). In the case of principals, the reading of education and commercial publications; discussions with other educators; and conferences, workshops, conventions were found to rank a very close first, second, and third, respectively, as methods of learning of AER findings. Education courses were a distant fourth, while television, radio was a dismal fifth. For

TABLE 4.9--Chi-Square Comparison of Principals' Responses to the Different Methods Listed in Item 20[a]

Method	Rank One	Rank Two	Rank Three	Rank Four	Rank Five	Total
Education courses	26 (17%)	28 (18%)	29 (19%)	49 (32%)	22 (14%)	154 (100%)
Discussions with other educators	42 (27%)	43 (28%)	36 (23%)	30 (20%)	3 (2%)	154 (100%)
Reading of educ. and comm. publications	48 (31%)	40 (26%)	37 (24%)	28 (18%)	1 (1%)	154 (100%)
Conferences, workshops, conventions	37 (24%)	41 (27%)	44 (28%)	26 (17%)	6 (4%)	154 (100%)
Television, radio	1 (1%)	2 (1%)	8 (5%)	21 (14%)	122 (79%)	154 (100%)

$\chi^2 = 468.62$, $P < .001$; contingency coefficient = .61

[a]Item 20 read, "Please rank (by indicating first, second, third, etc.) the following in terms of the extent to which they help you learn of applied educational research. (First is most helpful, second is somewhat less helpful, third is even less helpful, etc.)."

superintendents, on the other hand, the reading of education and commercial publications was certainly the most popular method utilized in learning of AER findings. Tied for the second and third most popular methods were discussions with other educators and conferences, workshops, conventions. As was true with principals, superintendents considered education courses to be a somewhat distant fourth. Television, radio was again an extreme fifth.

TABLE 4.10--Chi-Square Comparison of Superintendents' Responses to the Different Methods Listed in Item 20[a]

Method	Rank One	Rank Two	Rank Three	Rank Four	Rank Five	Total
Education courses	10 (12%)	16 (19%)	13 (15%)	30 (36%)	15 (18%)	84 (100%)
Discussions with other educators	18 (21%)	24 (29%)	27 (32%)	15 (18%)	0 (0%)	84 (100%)
Reading of educ. and comm. publications	38 (45%)	18 (21%)	19 (23%)	9 (11%)	0 (0%)	84 (100%)
Conferences, workshops, conventions	18 (21%)	26 (31%)	25 (30%)	15 (18%)	0 (0%)	84 (100%)
Television, radio	0 (0%)	0 (0%)	0 (0%)	15 (18%)	69 (82%)	84 (100%)

$\chi^2 = 326.94$, $P < .001$; contingency coefficient = .66

[a]Item 20 read, "Please rank (by indicating first, second, third, etc.) the following in terms of the extent to which they help you learn of applied educational research. (First is most helpful, second is somewhat less helpful, third is even less helpful, etc.)."

Question 1f: Do school administrators feel that the appropriate amount of attention is being given to the dissemination of AER?

In order for school administrators to acquire knowledge of AER findings, certain efforts must first be made to disseminate these findings. In questionnaire item 21, principals and superintendents were asked if "more attention," the "same amount of attention," or "less attention" should be given to the dissemination of AER. Sixty percent of the responding principals and sixty-one percent of the responding

superintendents answered "more attention." When those principals and superintendents who answered in the latter fashion were asked in what way more attention should be given to the dissemination of AER (questionnaire item 22), examples of disseminating AER in both its verbal and written forms were provided (see Tables B13 and B14). Although principals and superintendents suggested similar ways of giving more attention to the dissemination of AER, the groups differed in regard to those ways they viewed as most important. For example, in disseminating AER in its verbal form, principals felt that greater emphasis should be given to AER in college courses and seminars; superintendents, on the other hand, opted for emphasizing AER in professional meetings and conferences. In disseminating AER in its written form, principals felt that greater efforts should be made to disseminate AER through popular, frequently-read educational journals and magazines; superintendents, however, called for the increased dissemination of AER findings through Michigan Department of Education publications.

Question 1g: How knowledgeable do school administrators perceive they are on AER findings?

In questionnaire item 19, principals and superintendents were asked how knowledgeable they perceived they were on AER findings in the areas of educational administration, educational psychology, educational sociology, curriculum, and counseling. Only in the area of educational administration were principals and superintendents found to differ (see Tables B15, B16, B17, B18, and B19). That is, while superintendents felt they were quite knowledgeable about AER findings in educational

administration, principals were somewhat less confident about their knowledge in this area. (Interestingly, it was previously observed in questionnaire item 6--Table B3--that superintendents were somewhat more likely than principals to read AER studies in the area of educational administration.)

To determine if principals and superintendents perceived they were somewhat more knowledgeable about AER findings in certain areas, the responses to the five different areas of questionnaire item 19 were examined for each group (see Tables 4.11 and 4.12). It was discovered that both principals and superintendents felt they were quite knowledgeable about AER findings in the areas of educational administration and curriculum but considerably less knowledgeable about such findings in the areas of educational psychology, educational sociology, and counseling. (It was also previously noted in questionnaire item 6--Tables 4.1 and 4.2--that both principals and superintendents were much more likely to read AER studies in educational administration and curriculum than to read such studies in educational psychology, educational sociology, or counseling.)

As was pointed out in Chapter III (Analysis Section), an AER Knowledge Index was constructed on the basis of principals' and superintendents' responses to questionnaire item 19. This index was a measure of the extent to which a school administrator perceived he was knowledgeable about AER findings in the overall areas of educational administration, educational psychology, educational sociology, curriculum, and counseling. The AER knowledge Index was considered the best

TABLE 4.11--Chi-Square Comparison of Principals' Responses to the Different Subject Areas Listed in Item 19[a]

Subject Area	Very Knowl-edgeable	Moderately Knowl-edgeable	Slightly Knowl-edgeable	Not Knowl-edgeable	Total
Ed. Admin.	9 (6%)	90 (58%)	46 (30%)	10 (6%)	155 (100%)
Ed. Psy.	10 (7%)	47 (31%)	64 (42%)	30 (20%)	151 (100%)
Ed. Soc.	4 (3%)	36 (24%)	69 (46%)	40 (27%)	149 (100%)
Curriculum	20 (13%)	83 (54%)	47 (30%)	5 (3%)	155 (100%)
Counseling	13 (9%)	40 (27%)	70 (47%)	27 (18%)	150 (100%)

χ^2 = 102.04, P < .001; contingency coefficient = .35

[a]Item 19 read, "In your estimation, how knowledgeable are you on applied educational research findings in <u>each</u> of the following areas? Please place a check in each row."

TABLE 4.12--Chi-Square Comparison of Superintendents' Responses to the Different Subject Areas Listed in Item 19

Subject Area	Very Knowl-edgeable	Moderately Knowl-edgeable	Slightly Knowl-edgeable	Not Knowl-edgeable	Total
Ed. Admin.	18 (22%)	54 (64%)	12 (14%)	0 (0%)	84 (100%)
Ed. Psy.	5 (6%)	25 (29%)	37 (44%)	18 (21%)	85 (100%)
Ed. Soc.	2 (2%)	28 (33%)	35 (42%)	19 (23%)	84 (100%)
Curriculum	19 (23%)	47 (55%)	18 (21%)	1 (1%)	85 (100%)
Counseling	4 (5%)	21 (25%)	41 (49%)	17 (21%)	83 (100%)

χ^2 = 108.72, P. < .001; contingency coefficient = .46

available guide to a principal's or superintendent's state of knowledge on AER findings. In comparing the respective means of principals and superintendents on this index, it could not be shown that these groups differed in their perceived knowledge of AER findings in the five overall areas (see Table 4.13).

TABLE 4.13--Analysis of Variance Comparison of Superintendents' and Principals' Mean Responses to the AER Knowledge Index

	Mean	Standard Deviation	Number
Superintendents	12.46	2.94	82
Principals	11.89	3.07	147

F = 1.87 (1 df Between, 227 df Within), P > .05

Question 1h: What variables seem to be important in school administrators' knowledge of AER findings?

In an attempt to gain some insight into the school administrator's perceived knowledge of AER findings, information was sought on a set of seven correlate variables. Some of these variables were suggested by the literature, while others it was intuitively felt should be related to the school administrator's AER orientation. These variables concerned themselves with such things as: the number of courses emphasizing AER findings which the school administrator had taken (questionnaire item 48); the number of educational research methodology

courses the school administrator had taken (questionnaire item 49); the possibility of educational research activities having gone on within the school administrator's district (questionnaire item 50); the highest college degree which the school administrator had obtained (questionnaire item 53); the highest college degree which the school administrator expected to attain in his lifetime (questionnaire item 54); the number of years the school administrator had been employed in an educational capacity (questionnaire item 55); and, finally, the size of the school district the school administrator was employed in (available from existing records).

School administrators' responses to the seven correlate variables were examined in conjunction with their AER Knowledge Index scores. More specifically, a stepwise delete multiple linear regression analysis was employed to answer the question of what variables appear to be most related to principals' and superintendents' knowledge of AER findings. In the case of principals, only two of the seven correlate variables remained in the final regression equation. These were (1) the number of courses emphasizing AER findings which the principal had taken, and (2) the number of educational research methodology courses which the principal had taken. The respective partial correlation coefficients for the latter variables were .26 and .36. With a multiple correlation coefficient of .50, 25% of the variance in principals' AER Knowledge Index scores was explained through the use of these two variables (see Table B20 for the analysis of variance of the overall regression). In a similar analysis for superintendents, only one of the seven correlate

variables remained in the final regression equation. This was the number of educational research methodology courses which the superintendent had taken. The correlation between this latter variable and superintendents' AER Knowledge Index scores was .35; 12% of the variance was thus accounted for (see Table B21 for the analysis of variance of the overall regression).

The number of AER-related courses which the school administrator had taken was apparently important in his knowledge of AER findings. The number of educational research methodology courses taken, for example, was directly related to both principals' and superintendents' AER Knowledge Index scores. In the case of principals, the number of AER findings courses taken was also positively correlated to index scores.

Question 1i: How knowledgeable are school administrators on AER findings in a particular subject (class size and its relation to student achievement)?

In the questionnaire prepared for this study, certain questions attempted to elicit information on the school administrator's knowledge, use, and dissemination of AER findings on a particular subject. The particular subject in question was class size and its relation to student achievement. Since the subject of class size is frequently before the school administrator, especially at negotiation time, one would reasonably expect the school administrator to be, at a minimum, acquainted with the research on this subject. Moreover, if it was found that the school administrator did not know, use, or disseminate

the AER on this frequently discussed subject of class size, one would not expect him to know, use, or disseminate the AER on somewhat more esoteric subjects. Consequently, the class size and student achievement questions attempted to do two things: (1) to bring together in one practical example the major facets--knowledge, use, and dissemination--of the school administrator's relationship to AER, and (2) to provide some insights into administrators' previous responses so as to provide a validity check on the questionnaire.

Regarding the school administrator's knowledge of AER findings on the subject of class size and its relation to student achievement, 89% of the responding principals and 93% of the responding superintendents said they knew either something or a great deal about such research (questionnaire item 43). According to the research literature, there is inconclusive evidence as to whether large or small classes bring about greater student achievement.[2] Seventy-eight percent of the principals and ninety-three percent of the superintendents seemed to recognize this fact (questionnaire item 44). Although significantly more superintendents than principals were correct on this issue (see Table B22), it can be concluded that the vast majority of school administrators were knowledgeable about AER findings on the subject of class size and its relation to student achievement.

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[2]Encyclopedia of Educational Research, 4th ed., sv. "Class Size," by William S. Vincent.

Question 2: How do Michigan principals and superintendents use AER?

Question 2a: Do school administrators use AER in their everyday, operating decisions?

When principals and superintendents were asked whether they were able to utilize AER in the everyday, operating decisions an administrator must make when conducting an ongoing educational program (questionnaire item 23), 57% of the responding principals and 71% of the responding superintendents answered "occasionally" or "frequently." When those who answered in the latter manner were asked in questionnaire item 24 to briefly give some examples, principals chiefly provided examples involving classroom organization and student assessment, while superintendents principally listed examples involving classroom organization, direct administration of the school district, relations with the Board of Education, and financial matters (see Tables B23 and B24 for the respective examples given by principals and superintendents).

Question 2b: Do school administrators use AER in leading and directing their staffs?

When principals and superintendents were asked in questionnaire item 25 if they were able to utilize AER in the leadership of their staffs, 54% of the principals and 65% of the superintendents said they occasionally to frequently use AER in this manner. (It should be pointed out that the word "staff" means different things to different groups. That is, to a principal the word staff means the particular teachers under his direction, while to a superintendent the word staff tends to have an extended meaning and encompasses both other

administrators and teachers.) Regarding the principals who occasionally to frequently use AER in the leadership of their staffs, the most frequent uses were in bringing about constructive staff meetings, in keeping staff members as educationally up-to-date as possible, and in increasing staff participation (questionnaire item 26). Concerning the superintendents who occasionally to frequently use AER in the leadership of their staffs, the most popular uses were in increasing staff participation, in communicating with staff, and in securing and placing personnel (see Tables B25 and B26 for the respective examples given by principals and superintendents).

Question 2c: Do school administrators use AER in the developing of new educational programs?

When school administrators were asked whether they were able to utilize AER in the developing of new educational programs (questionnaire item 27), 57% of the responding principals and 75% of the responding superintendents answered "occasionally" or "frequently." Superintendents were found to utilize AER findings significantly more frequently in the developing of new educational programs than were principals (see Table B27). This latter finding is not surprising as superintendents ostensibly have a greater responsibility in the developing of new educational programs than do principals. The most frequent use of AER in the developing of new educational programs (questionnaire item 28) for both principals and superintendents involved working with specific subject areas and working with ways of arranging programs (see Tables B28 and B29 for the respective examples given by principals and superintendents).

Question 2d: Do school administrators use AER in their relations with the lay public?

In questionnaire item 29, principals and superintendents were asked whether they were able to utilize AER in their relations with the lay public. Less than a third of the principals (31%) and less than half of the superintendents (47%) said they occasionally to frequently use AER in this manner. Principals and superintendents most frequently utilized AER findings in this area (questionnaire item 30) when speaking to groups (see Tables B30 and B31 for the respective examples given by principals and superintendents).

Question 2e: Do school administrators use AER in the furthering of their professional growth?

In questionnaire item 31, school administrators were asked if they were able to utilize AER in the furthering of their professional growth. Half of the responding principals (50%) and two-thirds of the responding superintendents (67%) answered "occasionally" or "frequently." In this particular area, principals and superintendents chiefly utilized AER (questionnaire item 32) to gain greater insights into their administrative roles (see Tables B32 and B33 for the respective examples given by principals and superintendents).

Question 2f: Do school administrators use AER more frequently in some areas than in other areas?

To determine whether school administrators use AER equally often in the areas outlined in the questionnaire (everyday, operating decisions; leadership of staff; developing of new educational programs;

relations with the lay public; and furthering of professional growth), the responses to questionnaire items 23, 25, 27, 29, and 31 were compared for each group (see Tables 4.14 and 4.15). It was discovered that principals and superintendents use AER more frequently in some areas than in other areas.

TABLE 4.14--Chi-Square Comparison of Principals' Responses to Items 23, 25, 27, 29, and 31[a]

Use Area	Frequently	Occasionally	Seldom	Never	Total
Everyday, operating decisions (23)	15 (10%)	72 (47%)	64 (41%)	3 (2%)	154 (100%)
Leadership of staff (25)	12 (8%)	70 (46%)	66 (43%)	4 (3%)	152 (100%)
Developing of new educ. programs (27)	12 (8%)	74 (49%)	62 (41%)	3 (2%)	151 (100%)
Relations with the lay public (29)	5 (3%)	42 (28%)	95 (62%)	10 (7%)	152 (100%)
Furthering of professional growth (31)	12 (8%)	63 (42%)	69 (47%)	4 (3%)	148 (100%)

$\chi^2 = 32.82$, $P < .01$; contingency coefficient = .20

[a]Items 23, 25, 27, 29, and 31 read respectively, "Are you able to utilize applied educational research: in the everyday, operating decisions an administrator must make when conducting an ongoing educational program; in the leadership of your staff; in the developing of new educational programs; in your relations with the lay public; in the furthering of your professional growth?"

TABLE 4.15--Chi-Square Comparison of Superintendents' Responses to Items 23, 25, 27, 29, and 31

Use Area	Fre-quently	Occa-sionally	Seldom	Never	Total
Everyday, operating decisions (23)	14 (17%)	46 (54%)	23 (27%)	2 (2%)	85 (100%)
Leadership of staff (25)	9 (11%)	44 (54%)	28 (34%)	1 (1%)	82 (100%)
Developing of new educ. programs (27)	12 (15%)	49 (60%)	21 (25%)	0 (0%)	82 (100%)
Relations with the lay public (29)	5 (6%)	34 (41%)	43 (51%)	2 (2%)	84 (100%)
Furthering of profes-sional growth (31)	7 (9%)	47 (58%)	27 (33%)	0 (0%)	81 (100%)

$\chi^2 = 23.11$, $P < .05$; contingency coefficient = .22

Principals, for example, most frequently utilized AER in the developing of new educational programs and in their everyday, operating decisions. The leadership of staff was a close third, and the furthering of professional growth was a near fourth. A very distant fifth, and principals' least popular use of AER, involved relations with the lay public. Concerning superintendents, the most frequent use of AER was in the developing of new educational programs. A close second, third, and fourth, respectively, were: everyday, operating decisions; furthering of professional growth; and leadership of staff. As was true with principals, superintendents utilized AER findings rather infrequently in their relations with the lay public; the latter was a distant fifth. In four of the five described use areas, at least 50% of the responding

principals and superintendents said they used AER occasionally to frequently. Only in the area of relations with the lay public did less than a majority of principals and superintendents answer "occasionally" or "frequently."

As was pointed out in Chapter III (Analysis Section), an AER Use Index was constructed on the basis of the responses to questionnaire items 23, 25, 27, 29, and 31. This index was a measure of the extent to which the school administrator perceived he utilized AER in five overall areas. These five overall areas again were: everyday, operating decisions; leadership of staff; developing of new educational programs; relations with the lay public; and furthering of professional growth. By obtaining an index score for each administrator and comparing the mean index scores of principals and superintendents, it was possible to determine if principals and superintendents differed in regard to their perceptions of the frequency with which they used AER. It was found that superintendents used AER findings somewhat more frequently in these five overall areas than did principals (see Table 4.16).

TABLE 4.16--Analysis of Variance Comparison of Superintendents' and Principals' Mean Responses to the AER Use Index

	Mean	Standard Deviation	Number
Superintendents	13.59	2.42	77
Principals	12.67	2.71	145

F = 6.23 (1 df Between, 220 df Within), P < .05; Multiple R = .16

Question 2g: What attitudes do school administrators have toward AER and how do these attitudes relate to their use of AER?

In the questionnaire designed for this study, there were seventeen Likert-type items which attempted to measure school administrators' attitudes toward AER. Eight of these seventeen attitude items were purposely written to be favorable to AER, while nine were written to be unfavorable. In all eight favorable items, substantially more principals and superintendents agreed than disagreed with the statement. Also in seven of the nine unfavorable items, substantially more administrators disagreed than agreed with the statement (exceptions were statements 33A and 33O). Consequently, it must be concluded that school administrators tend to have positive feelings about AER.

Although the attitude items varied somewhat in their respective frequency distributions, principals and superintendents tended to agree with the following eight favorable items: AER is useful in keeping the school administrator up-to-date on innovative practices (statement 33B); when decisions are made on the basis of AER, the school administrator will feel much more personally secure (statement 33E); the use of AER provides the school administrator with a more scientific basis for his behavior (statement 33F); the use of AER can help prevent a considerable waste of money and resources in an administrator's school system (statement 33G); AER can be instrumental in furthering the development of the school administrator's profession (statement 33K); AER will make the school administrator more cautious regarding educational fads (statement 33M); by using AER, the school administrator can avoid professional

stagnation (statement 33N); and, finally, AER can be instrumental in bringing about more rational change within an administrator's school system (statement 33P).

Notwithstanding some variation in the frequency distributions of different items, principals and superintendents tended to disagree with the following seven unfavorable items: the traditional methods of education are ultimately more beneficial to the school administrator than those methods suggested by AER (statement 33C); AER cannot really help solve the everyday problems which the school administrator encounters (statement 33D); from the school administrator's standpoint, AER really has meaning only to educational researchers (statement 33H); the school administrator would be better off relying on his own personal experience than to rely on AER (statement 33I); the educational topics frequently researched are, in the eyes of the school administrator, of little relevance to the schools (statement 33J); AER can help the school administrator little in improving his school program (statement 33L); and, lastly, the school administrator does not really have time to look for opportunities to utilize AER (statement 33Q).

In two particular cases, more principals and superintendents were found to be in agreement than in disagreement with an unfavorable item. Some interesting insights were gained here. In statement 33A, for example, more principals and superintendents agreed than disagreed with the statement that AER is often somewhat confusing; likewise, in statement 33O, more principals and superintendents agreed than disagreed that it is often difficult for the school administrator to take AER and extrapolate it into a school setting.

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Importantly, in comparing the responses of principals and superintendents to the seventeen attitude items, it was observed that in eight (almost half) of the items there were significant differences between the two groups (see Tables B34, B35, B36, B37, B38, B39, B40, and B41). More specifically, superintendents were found in all eight cases to be much more positive about AER than were principals. Superintendents had a greater propensity than principals to agree with the following favorable statements: when decisions are made on the basis of AER, the school administrator will feel much more personally secure (statement 33E); the use of AER can help prevent a considerable waste of money and resources in an administrator's school system (statement 33G); AER will make the school administrator more cautious regarding educational fads (statement 33M); and, finally, AER can be instrumental in bringing about more rational change within an administrator's school system (statement 33P). Likewise, superintendents were much more apt than were principals to disagree with the following unfavorable items: AER cannot really help solve the everyday problems which the school administrator encounters (statement 33D); from the school administrator's standpoint, AER really has meaning only to educational researchers (statement 33H); the school administrator would be better off relying on his own personal experience than to rely on AER (statement 33I); and, lastly, AER can help the school administrator little in improving his school program (statement 33L). Although principals and superintendents were both found to be favorable to AER, it can be concluded that superintendents were even somewhat more favorable than were principals.

In an attempt to discover the relationship between the attitudes school administrators hold toward AER and their use of such research, a stepwise delete multiple linear regression analysis was conducted. Principals' and superintendents' scores on the AER Use Index were examined in concert with their responses to the Likert-type items. This analysis, it was hoped, would provide some insight into the reasons school administrators might have for using, or not using, AER.

In the case of principals, eight of the original seventeen attitude items remained in the final regression equation. A multiple correlation coefficient of .70 was obtained; this meant that approximately half (49%) of the variance in principals' AER Use Index scores could be accounted for through these eight items (see Table B42 for the analysis of variance of the overall regression). Principals who perceived they used AER tended to agree with the following statements: AER is useful in keeping the school administrator up-to-date on innovative practices (statement 33B, partial correlation coefficient equalled .30); the use of AER can help prevent a considerable waste of money and resources in an administrator's school system (statement 33G, .22); AER can be instrumental in furthering the development of the school administrator's profession (statement 33K, .15). These same principals tended to disagree with the following statements: AER is often somewhat confusing (statement 33A, partial correlation coefficient equalled .15); the traditional methods of education are ultimately more beneficial to the school administrator than those methods suggested by AER (statement 33C, .22); it is often difficult for the school administrator to take AER and extrapolate it into a school setting (statement 33O, .20); the

school administrator does not really have time to look for opportunities to utilize AER (statement 33Q, .33). Inexplicably, principals who were found to utilize AER also tended to agree, however, with the statement (statement 33H, -.27) that AER really has meaning only to educational researchers.

To determine how superintendents' attitudes toward AER relate to their use of AER, a stepwise delete regression analysis was again conducted. Only four of the original seventeen Likert-type items were found to have any predictive power. With a multiple correlation coefficient of .59, 35% of the variance in superintendents' AER Use Index scores could be accounted for (see Table B43 for the analysis of variance of the overall regression). Superintendents who perceived they used AER tended to disagree with the following statements: the traditional methods of education are ultimately more beneficial to the school administrator than those methods suggested by AER (statement 33C, partial correlation coefficient equalled .38); AER cannot really help solve the everyday problems which the school administrator encounters (statement 33D, .31); the school administrator does not really have time to look for opportunities to utilize AER (statement 33Q, .38). Unexplainably, superintendents who were found to utilize AER also tended to disagree, however, with the statement (statement 33G, -.20) that AER can help prevent a considerable waste of money and resources in an administrator's school system.

Question 2h: What variables seem to be important in school administrators' use of AER findings?

In a further attempt to gain some insight into the school administrator's perceived use of AER findings, the seven previously mentioned correlated variables (questionnaire items 48, 49, 50, 53, 54, 55, and school district size) were again utilized. Through the use of a stepwise delete multiple linear regression analysis, principals' and superintendents' responses to the AER Use Index were examined together with their responses to these seven correlate variables. In the case of principals, three of the original seven correlate variables remained in the final regression equation. These were (1) the number of courses emphasizing AER findings which the principal had taken, (2) the number of educational research methodology courses which the principal had taken, and (3) the degree which the principal expected to attain in his lifetime. These correlate variables had respective partial correlation coefficients of .23, .21, and .31. Assembled in a multiple linear regression equation, these particular correlate variables yielded a multiple correlation coefficient of .50; consequently, one quarter (25%) of the variance in the principals' AER Use Index scores could be accounted for (see Table B44 for the analysis of variance of the overall regression).

Regarding superintendents, two correlate variables were observed to be significantly related to AER Use Index scores. These were (1) the number of courses emphasizing AER findings which the superintendent had taken (partial correlation coefficient equalled .23), and (2) the possibility of educational research activities having gone on within the

superintendent's school district (partial correlation coefficient equalled .32). With a multiple correlation coefficient value of .43, 19% of the variance in superintendents' index scores could be explained (see Table B45 for the analysis of variance of the overall regression).

With this particular set of seven correlate variables, it was found that the taking of courses which emphasize AER findings was significantly related to both principals' and superintendents' use of AER. Likewise, for principals, the more educational research methodology courses which the principal had taken, the more likely he was to use AER.

The most powerful predictor of a principal's use of AER findings was the degree the principal expected to attain in his lifetime. That is, the greater the principal's educational aspiration, the more he was observed to use AER. In the case of superintendents, the most powerful AER-use predictor was the possibility of educational research activities having gone on within the superintendent's school district. Superintendents from school districts where educational research activities sometimes occurred were apparently more likely to use AER themselves.

Question 2i: Do school administrators use the AER findings available on the particular subject of class size and its relation to student achievement?

In line with questionnaire items 43 and 44 which attempted to determine whether school administrators were, in fact, knowledgeable on the AER findings involving class size and student achievement, item 45 sought to discover whether principals and superintendents utilized the AER on this subject. It was determined that a majority of

superintendents (65%) but only a minority of principals (34%) had occasion to use the AER available on class size and student achievement. Although it was previously noted that the vast majority of both principals and superintendents were knowledgeable about AER findings on this subject, superintendents were evidently somewhat more likely than were principals to use this research (see Table B46). This finding corresponds to the comparison of principals' and superintendents' mean AER Use Index scores where it was concluded that superintendents generally made somewhat greater use of AER than did principals.

Question 3: How do Michigan principals and superintendents disseminate AER to others?

Question 3a: Do school administrators discuss AER with other educators (other administrators, teachers) or non-educators (lay public, school board members)?

There are certainly numerous ways a school administrator can disseminate AER findings to others. One of these is the word-of-mouth technique. That is, through discussions of AER findings with both educators (other administrators, teachers) and non-educators (lay public, school board members), principals and superintendents can aid in the dissemination of AER.

Concerning the dissemination of AER to educators, principals and superintendents are in an excellent position to discuss AER studies with other administrators and teachers. In reference to other administrators, it was previously noted in questionnaire item 12 that when principals and superintendents were asked how frequently, on the average, they discussed AER studies with other administrators (administrators within

or outside their school district), the modal response for both groups was once per month. Apparently, such discussions of AER studies were a rather infrequent occurrence. Although neither group discussed AER studies to any great extent with other administrators, superintendents were somewhat more apt than were principals to utilize this word-of-mouth technique of dissemination (see Table B10). This possibly is a reflection of the fact that superintendents, by virtue of their position, tend to interact somewhat more frequently with other administrators than do principals.

Concerning the frequency with which school administrators discussed AER studies with teachers (questionnaire item 14), principals had a modal response of once a month for teachers in their schools, while superintendents had a bimodal response of zero times a month and once a month for teachers in their school systems. It is evident that principals and superintendents did not frequently discuss AER studies with either other administrators or teachers.

When school administrators were asked in questionnaire item 36 at what percentage of their staff meetings AER studies were at least mentioned or discussed, both principals and superintendents replied that at roughly 20% (one out of every five) of the staff meetings would such discussions occur. By its infrequency of occurrence, it would appear that the discussion of AER studies is rather incidental to principals' and superintendents' staff meetings.

Since administrators can also disseminate AER findings to non-educators, principals and superintendents were questioned in questionnaire item 40 on the frequency with which they discussed AER studies

with the lay public (e.g., at personal meetings with parents, PTA meetings, etc.). The modal response for principals was zero times a month, while superintendents had a bimodal response of zero times a month and once a month. Apparently, the vast majority of principals and superintendents only infrequently discussed AER studies with the lay public.

Because superintendents ostensibly are responsible for keeping their school boards informed of relevant educational practice, these chief executive officers were asked in questionnaire item 38 how frequently they discussed AER studies with school board members (individually or collectively). Their modal response was once a month. When superintendents were also asked in questionnaire item 39 whether school board members generally attach any value to AER, their responses were split. That is, while roughly one-half (49%) of the responding superintendents felt that board members attach medium to great value to AER, the other half (51%) perceived that board members assign either small value or no value to such research. It can be concluded that only a minority of superintendents frequently discussed AER studies with school board members, plus only half of the superintendents perceived that board members attach a medium amount or more value to AER.

Question 3b: Do school administrators pass along relevant AER articles to others (teachers, other administrators, school board members)?

Another method whereby the school administrator can aid in the dissemination of AER findings is by passing along relevant AER

articles to others for their perusal and study. When school administrators were asked in questionnaire item 34a if they passed along relevant AER articles to teachers, 92% of the responding principals and 79% of the responding superintendents answered "occasionally" or "frequently" (see Table B47). This greater propensity of principals to pass along releavnt AER articles to teachers was observed again in questionnaire item 35a. In the latter item, administrators were asked on how many occasions, during the past year, they had passed along AER articles to teachers. While principals replied on 6.79 mean number of occasions, superintendents answered that they had passed along such articles on 4.97 mean number of occasions. These means were found to be significantly different (see Table B48). Thus it can be concluded that principals were somewhat more likely than were superintendents to disseminate AER to teachers in this fashion. However, since principals interact somewhat more frequently with teachers than do superintendents, this finding is not surprising.

At the same time, administrators were asked in questionnaire item 34b whether they passed along relevant AER articles to other administrators. Significantly more superintendents (98%) than principals (77%) said that they occasionally to frequently passed along such articles to other administrators (see Table B49). When these administrators were asked on how many occasions, during the past year, they had passed along AER articles to other administrators (questionnaire item 35b), principals and superintendents answered on 4.75 and 9.04 mean number of occasions, respectively. These means also were

found to be significantly different (see Table B50). Consequently, superintendents were somewhat more apt than were principals to pass along relevant AER articles to other administrators. Because superintendents are responsible for directing both teachers and other administrators while principals chiefly have teachers in their charge, this finding does not appear to be inconsistent.

It was also deemed desirable to determine the extent to which school superintendents tend to pass along relevant AER articles to school board members. As pointed out previously, superintendents ostensibly have a responsibility to keep their boards up-to-date on relevant educational methods and approaches. In questionnaire item 34c, it was observed that over three-quarters (78%) of the responding superintendents said they occasionally to frequently passed along AER articles to school board members. When asked on how many occasions, during the past year, they had passed along AER articles to school board members (questionnaire item 35c), superintendents replied on 5.48 mean number of occasions.

Concerning those principals who passed along relevant AER articles to both teachers and other administrators, it was determined (in a repeated measure analysis of principals' responses to questionnaire items 35a and 35b) that such principals passed along AER articles on significantly more occasions during the past year to teachers than to other administrators (see Table B51). Likewise, of those superintendents who passed along relevant AER articles to teachers, other

administrators, and school board members, it was observed (in a repeated measure analysis of superintendents' responses to questionnaire items 35a, 35b, and 35c) that such superintendents passed along AER articles on significantly more occasions during the past year to other administrators than to teachers or school board members (see Table B52).

Question 3c: Is AER literature readily available for others within school administrators' schools or school districts?

By making AER literature readily available within his school or district, the school administrator can further aid in the dissemination of AER findings. When principals were asked in questionnaire item 42 if such literature was readily available in their schools (not their school districts), 59% answered in the affirmative. Likewise, 65% of the responding superintendents said that AER material was readily available within their school districts.

Question 3d: Do school administrators feel it is part of their professional responsibility to keep others (teachers, other administrators, school board members, lay public) up-to-date on AER?

The argument can be made that school administrators have an obligation to keep others up-to-date on AER. In questionnaire item 41, administrators were asked if they felt they had a professional responsibility to keep particular groups up-to-date on AER. It was found that principals, for example, perceived that they had different obligations to teachers, other administrators, and the lay public (see Table 4.17). Significantly, almost nine out of every ten

TABLE 4.17--Chi-Square Comparison of Principals' Responses to Items 41a, 41b, and 41d[a]

Groups Kept Up-To-Date	Yes	No	Total
Teachers (41a)	132 (87%)	20 (13%)	152 (100%)
Other Administrators (41b)	71 (48%)	77 (52%)	148 (100%)
Lay Public (41d)	96 (65%)	51 (35%)	147 (100%)

$\chi^2 = 51.48$, $P < .001$; contingency coefficient = .32

[a]Item 41 read, "As a school principal, do you feel it is part of your professional responsibility to: (a) keep teachers within your particular school up-to-date on applied educational research, (b) keep other administrators within your school system up-to-date on applied educational research, (d) keep the lay public (parents of students attending your school) up-to-date on applied educational research?"

principals (87%) felt that it was part of their professional responsibility to keep teachers up-to-date on AER. A smaller percentage, although still a majority, of principals (65%) perceived that they had a responsibility to keep the lay public informed on AER. Less than a majority of principals (48%), however, felt that their professional role required them to keep other administrators up-to-date on such research.

Much like principals, superintendents perceived that they had different responsibilities to different groups (see Table 4.18). That is, superintendents seemed to feel a greater obligation to keep other administrators (90%) and school board members (90%) up-to-date on AER than to keep the lay public (70%) and teachers (66%) up-to-date on such research. Importantly, however, the great majority of superintendents

TABLE 4.18--Chi-Square Comparison of Superintendents' Responses to Items 41a, 41b, 41c, and 41d[a]

Groups Kept Up-To-Date	Yes	No	Total
Teachers (41a)	55 (66%)	28 (34%)	83 (100%)
Other Administrators (41b)	76 (90%)	8 (10%)	84 (100%)
School Board Members (41c)	75 (90%)	8 (10%)	83 (100%)
Lay Public (41d)	57 (70%)	25 (30%)	82 (100%)

$\chi^2 = 25.89$, $P < .001$; contingency coefficient = .26

[a]Item 41 read, "As a school superintendent, do you feel it is part of your professional responsibility to: (a) keep teachers within your school system up-to-date on applied educational research, (b) keep other administrators within your school system up-to-date on applied educational research, (c) keep your school board members up-to-date on applied educational research, (d) keep the lay public (parents of students who attend schools within your school district) up-to-date on applied educational research?"

believed that they should keep teachers, other administrators, school board members, and the lay public informed of AER findings.

Question 3e: What variables seem to be important in school administrators' dissemination of AER to educators (other administrators, teachers)?

As mentioned previously, dissemination of AER can take many forms; also it can be directed toward educators and non-educators alike. In an attempt to gain some insight into the school administrator's dissemination of AER, an investigation was made of the administrator's dissemination of AER to a particular group (educators) by a particular method (the word-of-mouth technique). This word-of-mouth dissemination

technique involved principals' and superintendents' discussion of AER studies with other administrators (questionnaire item 12) and teachers (questionnaire item 14). Through the use of a stepwise delete multiple linear regression analysis, school administrators' responses to questionnaire items 12 and 14 were examined in concert with their responses to the seven previously mentioned correlate variables (questionnaire items 48, 49, 50, 53, 54, 55, and school district size).

In the case of principals, only one of the seven correlate variables was in any degree helpful in explaining principals' discussion of AER studies with other administrators. This was the number of educational research methodology courses which the principal had taken. The correlation was calculated at .28; consequently, only 8% of the variance could be accounted for (see Table B53 for the analysis of variance of the overall regression). Likewise, in a similar analysis carried out to explain principals' discussion of AER studies with teachers, only one variable remained in the final regression equation. This variable was the possibility of educational research activities having gone on within the principal's school district. With a correlation of .23, only 5% of the variance could be explained (see Table B54 for the analysis of variance of the overall regression).

Concerning superintendents, none of these same seven correlate variables could provide any insight into superintendents' discussion of AER studies with either other administrators or teachers. That is, no variable or set of variables remaining in the final regression equation could produce a significant F value for the overall regression (see Table B55 for the analysis of variance of the overall regression of

superintendents' discussion of AER studies with other administrators; see Table B56 for a similar analysis of superintendents' discussion of AER studies with teachers).

Consequently, little was accomplished in terms of uncovering important variables in the school administrator's word-of-mouth dissemination of AER studies. Only one variable, for example, was found to be important in the principal's discussion of AER studies with other administrators; likewise, only one variable was observed to be significant in the principal's discussion of such studies with teachers. Neither variable was capable of accounting for any sizeable amount of variance. In regard to superintendents, none of the seven correlate variables was helpful in explaining the superintendent's discussion of AER studies with either other administrators or teachers.

Question 3f: Do school administrators disseminate the AER findings available on the particular subject of class size and its relation to student achievement to others (teachers, other administrators, school board members, lay public)?

In line with questionnaire items 43, 44, and 45 which attempted to determine whether school administrators knew of, and utilized, the AER involving class size and student achievement, questionnaire item 47 asked principals and superintendents if they sought to disseminate those same AER findings to others. It was found in questionnaire item 47a that the vast majority of principals (76%) and superintendents (86%) had found occasion to either discuss, or pass along, AER on class size and student achievement to teachers.

Moreover, a majority of principals (61%) and superintendents (94%) had disseminated this research to other administrators (questionnaire item 47b). However, it was observed that superintendents were somewhat more likely to disseminate class size research to other administrators than were principals (see Table B57). This corresponded with previous findings where it was established that (1) superintendents were more apt than were principals to discuss AER with other administrators, and (2) superintendents had a greater propensity than did principals to pass along relevant AER articles to other administrators.

Regarding the dissemination of class size research to school board members, a high percentage of superintendents (85%), it was discovered, had attempted to make their board members aware of the research on this particular subject (questionnaire item 47c).

Finally, a majority of superintendents (61%) but, significantly, only a minority of principals (33%) had found it necessary to disseminate AER on class size and student achievement to the lay public (questionnaire item 47d). Superintendents obviously were much more likely to disseminate the research in this area to the lay public than were principals (see Table B58).

Summary

Three broad research questions were under consideration in this study. They were: (1) How do Michigan principals and superintendents acquire knowledge of AER,[3] (2) How do Michigan principals and superintendents use AER, and (3) How do Michigan principals and

[3]AER--Applied Educational Research.

superintendents disseminate AER to others? The data obtained and analyzed relative to these questions were set forth in this chapter.

Regarding the first major research question (How do Michigan principals and superintendents acquire knowledge of AER?), information was obtained on a number of different methods by which a school administrator can acquaint himself with AER. In personal reading, for example, it was found that at least three-quarters of the responding principals and superintendents occasionally to frequently read AER studies from educational journals and magazines. Nine out of ten administrators typically read accounts of AER studies in such publications rather than the original studies themselves. Also it was observed that approximately three-quarters of principals and superintendents occasionally to frequently read AER studies from commercial magazines and newspapers. In their choice of topics, both principals and superintendents tend to be selective. That is, the vast majority of administrators read AER studies in the areas of educational administration and curriculum while considerably fewer read in the areas of educational psychology, educational sociology, and counseling.

Concerning the difficulty of reading and understanding AER studies, approximately half of the responding principals and superintendents said they occasionally to frequently had difficulty with the language or terminology. Significantly more administrators (roughly three-quarters) said that they occasionally to frequently had difficulty with the research methods used in AER studies. It was also discovered that the locating of relevant AER information does not appear to be a

major problem for the school administrator. Approximately three-quarters of the principals and superintendents stated that they would have from small to medium amount of difficulty locating AER on topics of interest. Nevertheless, it was determined that principals and superintendents only infrequently surveyed the literature in an attempt to find relevant AER.

While approximately half of the principals and superintendents personally subscribed to AER-oriented publications, more than eight out of every ten administrators said their school (principal) or school district (superintendent) subscribed to such publications. The vast majority of administrators evidently have AER materials at hand. Phi Delta Kappan and The Education Digest were the two most popular AER-oriented publications which principals and superintendents have around them.

Besides personal reading, school administrators can acquire knowledge of AER findings through discussions with fellow educators. It was determined that principals and superintendents only infrequently discussed AER studies with teachers and other administrators. However, while principals discussed AER studies equally often with teachers and other administrators, superintendents were much more apt to discuss AER studies with other administrators than with teachers. Relevant to the discussion of AER studies with others is the amount of value others assign to AER. It was observed that both principals and superintendents perceived that other administrators assign somewhat more value to AER than do teachers. That is, while a majority of principals and superintendents felt that other administrators attach medium to great value

to AER, a minority of principals and superintendents felt that teachers attach this same amount of value to AER.

Further education courses offer a third method whereby school administrators can learn of AER. It was found that a majority of school administrators (over half of the responding principals and over two-thirds of the responding superintendents) said they were either moderately inclined or very inclined towards enrolling in education courses which strongly emphasize AER studies. Significantly, only a minority of the administrators (approximately four out of every ten) stated that they were moderately inclined to very inclined towards enrolling in educational research methodology courses. Principals and superintendents apparently were much more interested in knowing the results of AER studies than in knowing the methods whereby such studies could be conducted.

Finally, another method by which principals and superintendents can acquaint themselves with AER findings is through attending conferences or workshops which attempt to disseminate AER findings. Roughly six out of ten administrators felt they were either moderately interested or very interested in attending such conferences or workshops.

Of the different methods of acquiring knowledge of AER, some were found to be more popular than were others. The reading of educational and commercial publications was considered the most helpful method by both principals and superintendents. Moreover, discussions with other educators and conferences, workshops, conventions were also regarded as important methods of learning of AER findings. Principals

and superintendents tended to feel that education courses were somewhat less valuable, with television, radio being practically useless.

In order for school administrators to acquaint themselves with AER findings, certain efforts must first be made to disseminate these findings. It was observed that a sizeable majority (approximately 60%) of both principals and superintendents felt that more attention should be given to the dissemination of AER. Administrators provided examples whereby more attention could be given to the dissemination of AER in both its verbal and written form.

In investigating the extent to which school administrators perceived they were knowledgeable on AER, it was discovered that both principals and superintendents felt they were quite knowledgeable about AER findings in the areas of educational administration and curriculum, but considerably less knowledgeable about such findings in the areas of educational psychology, educational sociology, and counseling. Also, through the use of an AER Knowledge Index--a measure of the extent to which a school administrator perceived he was knowledgeable about AER findings in the overall areas of educational administration, educational psychology, educational sociology, curriculum, and counseling--it was possible to compare principals and superintendents on their perceived knowledge of AER findings. It could not be shown that principals and superintendents differed in their perceived knowledge of AER findings in the five overall areas.

In an attempt to gain some insight into school administrators' perceived knowledge of AER findings, information was sought on a set of

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seven correlate variables. These correlate variables were examined in conjunction with principals' and superintendents' AER Knowledge Index scores. It was learned that the number of AER-related courses which school administrators had taken was apparently important in their knowledge of AER findings. That is, the number of educational research methodology courses taken was directly related to both principals' and superintendents' AER Knowledge Index scores. Moreover, the number of courses emphasizing AER findings which principals had taken was also positively correlated to their index scores.

A second major research question in this investigation was: How do Michigan principals and superintendents use AER? Principals and superintendents were asked if they were able to utilize AER in five specific areas: in their everyday, operating decisions; in the leadership of their staffs; in the development of new educational programs; in their relations with the lay public; and in the furthering of their professional growth. In four of the five described areas, at least 50% of the responding principals and superintendents said they were able to utilize AER occasionally to frequently. Only in the area of relations with the lay public were less than a majority of administrators found to use AER occasionally to frequently. Principals and superintendents also provided examples of the manner in which they used AER in each of these five areas. Thus it would appear that principals and superintendents are, in fact, using AER findings.

It was observed, however, that both principals and superintendents were more apt to utilize AER findings in some areas than in other areas. That is, superintendents most frequently utilized AER in

the developing of new educational programs while principals most frequently utilized AER both in the developing of new educational programs and in everyday, operating decisions. The least popular use of AER for both principals and superintendents involved, of course, relations with the lay public.

It was also deemed appropriate to compare principals' and superintendents' use of AER findings in each of the five described areas. Only in one use area--the developing of new educational programs--were these groups found to be significantly different. Superintendents were much more likely to utilize AER in the developing of new educational programs than were principals. Also, through the use of an AER Use Index--a measure of the extent to which a school administrator perceived he utilized AER in the five overall use areas--it was possible to compare principals and superintendents on their total perceived use of AER findings. Superintendents, it was discovered, had a greater total use of AER findings in the five use areas than did principals.

Related to the utilization of AER findings are the types of attitudes principals and superintendents hold toward AER. Through the use of seventeen Likert-type items, school administrators' attitudes toward AER were explored. In fifteen of the seventeen attitude items, administrators were found to be favorable toward AER. Consequently, it must be concluded that principals and superintendents have positive feelings about AER. In comparing principals' and superintendents' responses to the seventeen attitude items, superintendents were observed in eight (almost half) of the items to be more favorable

toward AER than were principals. Thus while both principals and superintendents were found to have positive feelings toward AER, superintendents were even somewhat more positive about AER than were principals. Moreover, in an attempt to determine possible reasons school administrators have for using, or not using, AER, principals' and superintendents' responses to the seventeen Likert-type items were examined in concert with their responses to the AER Use Index. Eight attitude items proved valuable in explaining principals' use of AER, while four attitude items were useful in accounting for superintendents' use of such research.

The seven correlate variables utilized in analyzing school administrators' AER Knowledge Index scores were also employed in analyzing principals' and superintendents' AER Use Index scores. Three variables were found to be directly related to principals' use of AER: (1) the number of courses emphasizing AER findings which the principal had taken, (2) the number of educational research methodology courses which the principal had taken, and (3) the degree which the principal expected to attain in his lifetime. Likewise, two variables were observed to be positively correlated to superintendents' use of AER: (1) the number of courses emphasizing AER findings which the superintendent had taken, and (2) the possibility of educational research activities having gone on within the superintendent's school district.

Finally, a third major research question in this investigation was: How do Michigan principals and superintendents disseminate AER to others? Certainly one of the ways a school administrator can disseminate

AER findings is through the word-of-mouth technique. That is, through discussions of AER studies with both educators (other administrators, teachers) and non-educators (lay public, school board members), principals and superintendents can assist in the dissemination of AER. As previously noted, however, most principals and superintendents only infrequently discussed AER studies with other administrators or teachers. In regard to non-educators, it was observed that the vast majority of principals and superintendents did not often discuss AER studies with the lay public. Moreover, only a minority of superintendents discussed AER studies with any frequency with school board members (only half of the responding superintendents perceived that school board members attach at least a medium amount of value to AER). Consequently, it must be concluded that few principals and superintendents regularly disseminate AER through the word-of-mouth technique.

A second method whereby the school administrator can aid in the dissemination of AER findings is by passing along relevant AER articles to others for their perusal and study. It was observed that approximately eight out of every ten superintendents and nine out of every ten principals occasionally to frequently passed along such articles to teachers. Likewise, approximately 80% of the responding principals and almost 100% of the responding superintendents said they occasionally to frequently passed along relevant AER articles to other administrators. Over three-quarters of the superintendents were also found to occasionally or frequently pass along such articles to school board members. While principals were somewhat more likely to pass along relevant AER articles to teachers than to other administrators, superintendents were

considerably more apt to pass along relevant AER articles to other administrators than to either teachers or school board members. It can be concluded that principals and superintendents frequently pass along relevant AER articles to others. Apparently they are more likely to disseminate AER in the latter manner than through the word-of-mouth technique.

By having AER literature readily available within his school or district, the school administrator can further assist in the dissemination of AER findings. Approximately six out of ten administrators said that AER literature was readily available in their school (principal) or school district (superintendent).

School administrators were also asked if they felt it was part of their professional responsibility to keep others up-to-date on AER. Both principals and superintendents perceived that they had different obligations to different groups. Principals, for example, felt that they should first keep teachers, second keep the lay public, and third keep other administrators up-to-date on AER. Superintendents, on the other hand, perceived that they first had an obligation to keep other administrators and school board members informed of AER, and then second, an obligation to keep teachers and the lay public informed of such research.

Finally, using the previously mentioned set of correlate variables, an attempt was made to gain some insight into school administrators' dissemination of AER findings. More specifically, an investigation was made of school administrators' dissemination of AER to a particular group (educators) by a particular method (the word-of-

mouth technique). It was observed that the number of educational research methodology courses which the principal had taken was directly related to his discussion of AER studies with other administrators. It was also discovered that there was a positive correlation between the possibility of educational research activities having gone on within the principal's school district and his discussion of AER studies with teachers. Unfortunately, none of the seven correlate variables proved helpful in explaining the superintendent's discussion of AER studies with either other administrators or teachers.

CHAPTER V

SUMMARY AND CONCLUSIONS

Questions

This study directed itself to three major research questions. They were: (1) How do Michigan principals and superintendents acquire knowledge of AER,[1] (2) How do Michigan principals and superintendents use AER, and (3) How do Michigan principals and superintendents disseminate AER to others?

Methodology

Two distinct populations were under consideration in this inquiry: a population of Michigan principals and a population of Michigan superintendents. These populations consisted of Michigan principals and superintendents from K-12 districts with enrollments of 2,000 plus students; there were 273 such superintendents and 2,832 such principals. With a tolerated error of .05 and a desired confidence level of .90, two separate and independent random samples were drawn. The samples consisted of 136 superintendents and 246 principals. Stratified random sampling--the stratifying variable was district enrollment size--was employed to increase the precision of the study. Principals and superintendents, not schools or school districts, were the units sampled in this study.

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[1]AER--Applied Educational Research.

To obtain information relative to the latter research questions, it was necessary to design a special questionnaire. The latter consisted chiefly of objective, forced-choice items with a small number of open-ended items. A pretesting of the measuring instrument was carried out on a select group of principals and superintendents; some alterations were found to be necessary. Principal and superintendent questionnaires were identical on all but seven items.

The first mailing of the questionnaire occurred on March 30, 1972. Subsequent follow-up techniques included a reminder letter, telephone contacts, and a second mailing of the questionnaire. By June 9 (approximately nine weeks after the original mailing), eighty-five superintendents (62.5%), out of an original sample of 136 superintendents, had responded; by this same date, one hundred and fifty-six principals (63.4%), from the original sample of 246 principals, had returned the questionnaire.

To answer the three major research questions, a number of inferential statistical techniques were employed. Besides routine confidence intervals, these included the chi-square test of homogeneity, the one way analysis of variance, the repeated measure design analysis of variance, and the stepwise delete multiple linear regression analysis.

Findings and Their Relation to Past Research

In regard to the first major research question (How do Michigan principals and superintendents acquire knowledge of AER?), it was found that school administrators rely on a number of different methods in familiarizing themselves with AER. These included personal reading,

discussions with fellow educators, further education courses, and conferences-workshops. Some of these methods, however, were found to be more popular than others.

Concerning personal reading, the vast majority of principals and superintendents said that they occasionally to frequently read AER studies from educational and commercial publications. School administrators reported that they typically read accounts of AER studies rather than the original studies themselves. Moreover, they tended to read many more studies in the areas of educational administration and curriculum than studies in the areas of educational psychology, educational sociology, or counseling. While approximately half of the principals and superintendents said they occasionally to frequently had difficulty with the language or terminology used in AER studies, significantly more (roughly three-quarters) said they occasionally to frequently had difficulty with the research methods employed in AER studies. The vast majority of school administrators also reported that they would have from small to a medium amount of difficulty locating AER on topics of interest. Nevertheless, principals and superintendents only infrequently surveyed the literature in an attempt to find relevant AER. Most administrators were found to have AER materials at hand; Phi Delta Kappan and The Education Digest were the two most popular AER-oriented publications principals and superintendents have around them.

While the literature has suggested that school administrators are not likely to read of educational research findings, this study has found quite the opposite to be true. Michigan principals and superintendents did, in fact, report that they read AER studies from educational

and commercial publications. This study also disagrees with the implication that administrators have considerable difficulty locating relevant research information. However, the results of this study are in agreement with the suggestion that research often goes through a refining process before it reaches the administrator, plus the suggestion that administrators many times have difficulty reading and understanding research.

Regarding the method of discussions with fellow educators, it was determined that principals and superintendents only infrequently discussed AER studies with teachers and other administrators. Moreover, both principals and superintendents perceived that other administrators assign somewhat more value to AER than do teachers. The former finding is in direct conflict with the literature which has implied that discussions with other educators is an extremely popular method of acquiring knowledge of R & D activities.

Concerning the method of enrolling in further education courses, a majority of principals and superintendents said they were moderately inclined to very inclined towards enrolling in courses emphasizing AER studies. However, only a minority of such administrators said they were so inclined towards enrolling in educational research methodology courses. This latter finding is in partial conflict with a previous study which has suggested that principals, at least, desire more training in research activities.

In regard to the method of attending conferences or workshops, a majority of principals and superintendents stated that they were either moderately interested or very interested in attending conferences

or workshops which attempt to disseminate AER findings. This tends to support the literature which has posited that school administrators have a very favorable attitude toward such conferences and workshops.

Of the different methods which school administrators use to acquire knowledge of AER, some were found to be more popular than were others. Personal reading was considered the most helpful method by both principals and superintendents. Moreover, discussions with other educators and conferences, workshops, conventions were close behind. Education courses were regarded as somewhat less valuable than the other three methods. In line with a past study, a majority of principals and superintendents also felt that greater attention should be given to the dissemination of AER.

When school administrators were queried on their knowledge of AER findings, both principals and superintendents felt they were quite knowledgeable about such findings in the areas of educational administration and curriculum, but considerably less knowledgeable about AER findings in the areas of educational psychology, educational sociology, and counseling. It could not be shown that principals and superintendents differed in their total perceived knowledge of AER findings in the overall areas of educational administration, educational psychology, educational sociology, curriculum, and counseling. In addition, it was observed that the number of AER-related courses (courses emphasizing AER findings; educational research methodology courses) which the school administrator had taken was directly related to his knowledge of AER findings.

In regard to the second major research question (How do Michigan principals and superintendents use AER?), a majority of principals and superintendents reported that they were able to occasionally or frequently use AER in each of four specific areas: in their everyday, operating decisions; in the leadership of their staffs; in the developing of new educational programs; and in the furthering of their professional growth. However, in a fifth area--in relations with the lay public--less than a majority of principals and superintendents said that they were able to occasionally or frequently use AER. Moreover, school administrators were more likely to utilize AER findings in some areas than in other areas. While superintendents most frequently utilized AER in the developing of new educational programs, principals most frequently utilized AER both in the developing of new educational programs and in everyday, operating decisions. In comparing principals and superintendents total perceived use of AER in the five overall areas, it was determined that superintendents were somewhat more likely to use AER in the five overall areas than were principals.

While the literature has, in the main, suggested that school administrators are not using educational research findings, this study indicates otherwise. Both principals and superintendents reported that they are using AER, plus gave examples to this effect.

Related to the school administrator's use of AER is his attitude towards such research. In fifteen of seventeen Likert-type attitude items, principals and superintendents were found to be very favorable toward AER. In addition, superintendents were observed to be even somewhat more positive about AER than were principals. Many of the

attitude items proved valuable in explaining principals' and superintendents' use of AER findings. The findings of this study, consequently, are somewhat at odds with the literature which has implied that few school administrators have a favorable attitude towards educational research.

Certain variables were found to be related to principals' and superintendents' use of AER. The number of AER-related courses (courses emphasizing AER findings; educational research methodology courses) which the school administrator had taken was positively correlated to his utilization of AER findings. Additionally, the degree which the principal expected to attain in his lifetime was directly related to his use of AER, while the possibility of educational research activities having gone on within the superintendent's school district was positively correlated to the latter's use of AER.

In regard to the third major research question (How do Michigan principals and superintendents disseminate AER to others?), it was discovered that school administrators do, in fact, disseminate AER to others, but certain dissemination techniques were used more frequently than were others. Little use was made of the word-of-mouth technique, for example. Few administrators regularly discussed AER studies with teachers, other administrators, or the lay public; likewise, most superintendents only infrequently discussed AER studies with school board members.

School administrators, it was observed, were much more likely to rely on another dissemination technique--the passing along of relevant AER articles to others for their personal perusal and study. An

overwhelming majority of principals and superintendents reported that they occasionally to frequently passed along such articles to teachers and other administrators; moreover, the vast majority of superintendents said they occasionally to frequently passed along AER articles to school board members. Consequently, school administrators have a greater propensity to disseminate AER in the latter manner than the literature would suggest.

By having AER literature readily available within his school or district, the school administrator can indirectly assist in its dissemination. A majority of principals and superintendents reported that AER materials were at hand.

While school administrators generally perceived a responsibility to keep others up-to-date on AER, principals and superintendents felt that they had different obligations to different groups. Principals, for example, felt that they should first keep teachers, second keep the lay public, and third keep other administrators up-to-date on AER. Superintendents, on the other hand, perceived that they first had an obligation to keep other administrators and school board members informed of AER, and then second, an obligation to keep teachers and the lay public informed of such research.

Finally, in investigating possible variables important in the school administrator's dissemination of AER findings, it was discovered that the number of educational research methodology courses which the principal had taken was directly related to his discussion of AER studies with other administrators. Also it was observed that there

was a positive correlation between the possibility of educational research activities having gone on within the principal's school district and his discussion of AER studies with teachers. Unfortunately, none of the correlate variables examined proved helpful in explaining the superintendent's discussion of AER studies with either other administrators or teachers.

Conclusions

The more noteworthy conclusions of this study could be summarized in the following manner:

1. Administrators familiarize themselves with AER in many ways. While personal reading appears to be the most popular method, use is also made of education courses, conferences-workshops, and to some extent, discussions with fellow educators.
2. Administrators are interested in particular kinds of research. They are much more interested in AER that deals with educational administration and curriculum than AER in educational psychology, educational sociology, and counseling. Moreover, they feel more knowledgeable about AER in educational administration and curriculum than AER in the three other areas.
3. Administrators do have AER-materials (AER-oriented journals and periodicals) at hand. Likewise, they feel they could obtain AER on topics of interest without too much difficulty.
4. Administrators admit some difficulty in understanding AER (more difficulty with the research methods than with the language, terminology utilized in AER studies).

5. Administrators tend to think that other administrators typically attach more value to AER than do teachers.
6. Administrators believe that even more attention should be given to the dissemination of AER.
7. Administrators are using AER findings in the performance of their professional roles (with superintendents using AER even somewhat more frequently than principals). AER is used more frequently in some areas than in other areas (most often in the developing of new educational programs).
8. Administrators tend to have a favorable attitude towards AER (with superintendents being somewhat more positive about AER than principals).
9. Administrators do attempt to disseminate AER to others. While they often pass along relevant articles to others or insure that AER materials are at hand, they only infrequently discuss AER findings with others.
10. Administrators perceive that they have a responsibility to keep other groups up-to-date on AER findings (although the responsibility differs between groups).
11. The administrator's knowledge, use, and dissemination of AER is directly related to the number of AER-related courses (courses emphasizing AER findings; educational research methodology courses) which he has taken.

The above conclusions do not exist in a vacuum. Rather they take on special meaning to particular groups. Researchers, organizations

and government agencies attempting to foster and promote educational research, those planning graduate programs for school administrators, and administrators themselves would find something of value here.

Researchers, for example, should note that a major group of educational practitioners (school administrators) are favorably disposed toward, and are using, research findings. This implies that the research which is being conducted is not just filling educational journals but is being utilized--albeit in different ways--to improve educational practice in the schools. From an utilitarian standpoint, there is more than a modest return on the money, time, and human effort which researchers are committing to educational research.

The above conclusions might call for increased communication between researchers and administrators. For example, in seminars, conferences, workshops, on-site visits, and the like, administrators could describe to researchers the problems which they find most pressing and deserving of research; likewise, they might outline the types of difficulties they frequently encounter in trying to apply research findings. At the same time, researchers could inquire as to how they might make research results more easily understandable, or how they might give greater attention to the dissemination of research findings. Such mutual cooperation would also serve another purpose: it would tend to break down certain stereotypes (the "ivory-tower" academician versus the "nitty-gritty" practitioner) which have been said to exist.

To organizations and government agencies attempting to foster and promote educational research, these conclusions suggest that the time lag between the completion of research studies and the translation

of the results into educational practice may not, in fact, be as long as the 15 years which some have suggested. Moreover, if research results are not dominating educational practice, they are--at least--being given some consideration. Consequently, it could be argued that there should be a continuance, and possibly even an increase, in the support of educational research activities (including research, evaluation, development, and diffusion).

Organizations and agencies concerned with educational research should recognize that school administrators--as a group--do feel that greater efforts should be made in disseminating research results, do have preferences in their methods of familiarizing themselves with research findings, and do have interests in particular kinds of research. In addition, it would seem wise for these organizations and agencies to periodically survey educational practitioners (teachers as well as administrators) as to their needs, wants, feelings, and attitudes regarding educational research.

To those planning graduate programs for school administrators, these conclusions indicate that research findings should receive continued emphasis in the curriculum. That is, preparation programs should somehow balance the findings of research with the practical art aspect of administering the schools. Since few middlemen exist in the diffusion-of-research findings chain, it is especially important that university professors attempt to disseminate research results. In many graduate classes, there is a need for discussions of research findings and explanations of how these findings may be applied in the schools.

Lastly, these conclusions take on meaning to administrators themselves. They suggest a regular examination of research findings as possible answers to educational problems. Moreover, administrators should consider creating a research atmosphere in their school or district. In the latter, administrators would encourage their subordinates to make use of research findings plus provide them with the needed support in undertaking different educational approaches.

Certainly the aforementioned groups do not subsume all others who would find something noteworthy in these conclusions. Teachers, school board members, and even the lay public would find these conclusions important.

Suggestions for Future Research

As has been noted, many of the findings of this study have been at odds with the literature. For this reason alone, it would appear fruitful to carry on further research in this area. However, many of the conflicts--it should be added--could be attributable to the fact that the literature speaks to the school administrator's relationship to educational research (a global concept) while this study directed itself to the administrator's relationship to AER (a more narrowly defined concept).

While this investigation was limited to Michigan school administrators, it would seem advantageous to replicate this study in other states or multiple-state regions. By so doing, it could be determined if the results of this study are particular to Michigan school administrators or whether, in fact, they are true of administrators from

other states and regions. To the extent that Michigan principals and superintendents are typical of administrators from other states, then to that extent, this study has generalizability beyond Michigan. However, short of a replication, there can be no strong assurance that Michigan administrators are similar to other administrators in their behavior toward AER.

In all investigations, a particular method must be selected for obtaining the desired information. In this study, use was made of a mail questionnaire as it was an economical way of reaching a large number of individuals, plus it facilitated the handling of data. Nevertheless, different methodologies can be employed to get at these same research questions. One of these is the personal interview. Although fewer individuals are typically contacted, the latter method provides for a more thorough, in-depth investigation. Consequently, it would seem worthwhile for others doing research in this area to consider using other methodologies.

Since this study was directed toward both principals and superintendents and since it involved their knowledge, use, and dissemination of AER, it tended--in many respects--to be exploratory in nature. Further investigations might attempt to limit themselves to only one area, i.e., to the school administrator's knowledge, or the school administrator's use, or the school administrator's dissemination of AER. Moreover, consideration could be given to working only with one group, say principals or superintendents. These actions would certainly afford a closer and more intensive examination than was possible in the present

study. Hopefully, however, the latter has provided a "jumping-off" point for more delimited investigations.

While this study has sought to answer certain questions, it has also likely raised certain others. Further research could go a long way in answering these related questions.

APPENDIX A

Principal and Superintendent Questionnaires,
Reminder Letter, Second Cover Letter,
and a Description of Respondents

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF EDUCATION · DEPARTMENT OF ADMINISTRATION AND HIGHER EDUCATION
ERICKSON HALL

As educators, we frequently hear the subject of educational research mentioned these days. Unfortunately, however, there exists little information on exactly how educational research relates to different educators. We at Michigan State University are attempting to shed some light on this subject. Specifically, we are interested in knowing how a particular type of educational research, applied educational research, relates to a particular group of educators, school administrators.

By virtue of your position you have been selected as part of a random sample of Michigan school administrators. Enclosed is a questionnaire which, as would be expected, deals with the school administrator's role or relationship to applied educational research. It is hoped that sometime in the next three or four days you will be able to complete and return this questionnaire. We have found that this questionnaire takes between fifteen to twenty minutes to complete.

The information gained from this particular endeavor is important in many ways. Firstly, it should help school administrators assess their role or relationship to applied educational research; secondly, it should prove beneficial to individuals responsible for developing future administrator courses and programs; finally, it should aid individuals who actually conduct such applied educational research. If this endeavor is to make any contribution to the educational profession, your cooperation in completing and returning this questionnaire is extremely important.

Of course, all answers to this questionnaire will be kept in the strictest confidence.

Sincerely,

Philip A. Cusick
Assistant Professor
Department of Educational Administration

John Major
Doctoral Candidate
Department of Educational Administration.

(PRINCIPAL QUESTIONNAIRE)

As you are probably aware, there are different types of educational research activities. For example, there is basic research, applied research, evaluation, and action research. To refresh your memory, the following definitions are provided:

> BASIC RESEARCH is an activity directed toward the increase of generalizable knowledge. It pursues knowledge for its own sake and gives little consideration to practical applications. Since basic research is concerned with detailed fundamental processes, it is often labeled "pure research." Great emphasis is placed on behavioral theories and models.
>
> APPLIED RESEARCH is an activity which produces generalizable knowledge of immediate or practical application. It is mission-oriented and aimed at producing knowledge relevant to solving a general problem. Unlike basic research, applied research is concerned with studying gross, macro processes. Only a moderate amount of attention is given to behavioral theories and models.
>
> EVALUATION is an activity which attempts to determine the worth or social utility of a specific educational program, product, or procedure. Unlike either basic or applied research, evaluation does not attempt to explain "how" or "why" a particular program, product, or procedure meets a particular objective, but rather is concerned simply with whether the program, product, or procedure meets the objective at all. The information gained from evaluation studies is rarely generalizable beyond a particular school or district.
>
> ACTION RESEARCH is an activity which is intended to bring the scientific method to bear on local educational practices. Whether conducted by a teacher or an administrator in his school or district, action research provides objective, systematic techniques for problem solving and decision making. Like evaluation, the results of action research studies are not generalizable to other times or places.

This questionnaire concerns itself solely and entirely with applied educational research. That is, other activities like basic research, evaluation, and action research are not under consideration here.

To give you some examples of applied educational research, here are the titles of some applied research studies found in different educational journals and magazines:

> from Educational Administration
>
> 1. "A Study of Management Styles in Educational Organizations"
> 2. "Some Factors Affecting Teacher Survival in School Districts"
>
> from Educational Psychology
>
> 1. "The Influence of Massive Rewards on Reading Achievement in Potential Urban School Dropouts"

(PRINCIPAL QUESTIONNAIRE)

from Educational Psychology

2. "Identification of Teacher-Classroom Variables Facilitating Pupil Creative Growth"

from Educational Sociology

1. "Social Class Differences in Anxiety of Elementary School Children"
2. "The Occupations of Non-College Youth"

from Curriculum

1. "The Effect of Second Language Instruction on the Reading Proficiency and General School Achievement of Primary Grade Children"
2. "An Approach to the Use of Computers in the Instructional Process"

from Counseling

1. "Some Effects of Varied Educational Placement for Emotionally Disturbed Children"
2. "The Value of Selected Measures of Personality Characteristics as Predictors of College Achievement"

With this type of educational research, that is, applied educational research, in mind, would you please answer the following questions for us.

1. Do you read applied educational research studies which are reported in educational journals or educational magazines (American Educational Research Journal, Educational Administration Quarterly, Education Digest, Phi Delta Kappan, etc.)?

30	86	34	5	155
☐ frequently	☐ occasionally	☐ seldom	☐ never	
19%	56%	22%	3%	100%

2. If your answer was either "frequently", "occasionally," or "seldom" to the previous question:

SKIP QUESTION 2 IF YOUR ANSWER WAS "never" TO QUESTION 1

a.) Do you typically read the original study itself (as reported by the researcher) or an account of the study (as reported by someone other than the researcher)?

18	131	149
☐ the original study	☐ an account of the study	
12%	88%	100%

b.) How many applied educational research studies (of those reported in educational journals or magazines) would you estimate you typically read in a month? Mean = 3.46 studies n = 130
$P(2.98 \leq \mu \leq 3.94) = .90$ Standard Deviation = 3.34

3. Do you read applied educational research studies which are reported in commercial magazines or commercial newspapers (Life, Newsweek, Saturday Review, New York Times, Detroit News, etc.)?

53	63	33	6	155
☐ frequently	☐ occasionally	☐ seldom	☐ never	
34%	41%	21%	4%	100%

4. If your answer was either "frequently," "occasionally," or "seldom" to the previous question:

SKIP QUESTION 4 IF YOUR ANSWER WAS "never" TO QUESTION 3

a.) How many applied educational research studies (of those reported in commercial newspapers or magazines) would you estimate you typically read in a month? Mean = 4.56 studies n = 141
$P(3.97 \leq \mu \leq 5.15) = .90$ Standard Deviation = 4.42

5. When reading applied educational research studies which are reported in either educational journals and magazines or commercial newspapers and magazines:

SKIP QUESTION 5 IF YOU ANSWERED "never" TO BOTH QUESTIONS 1 & 3

a.) Do you find the language or terminology used in these studies somewhat difficult to understand?

9	72	68	6	155
☐ frequently	☐ occasionally	☐ seldom	☐ never	
6%	46%	44%	4%	100%

b.) Do you find the research methods (for example, research design, instrumentation, and statistical analysis) used in these studies somewhat difficult to understand?

25	83	42	2	152
☐ frequently	☐ occasionally	☐ seldom	☐ never	
16%	55%	28%	1%	100%

6. In which area(s) do you tend to read applied educational research studies? Please check one or more.

SKIP QUESTION 6 IF YOU ANSWERED "never" TO BOTH QUESTIONS 1 & 3

☐ Educational Administration	125 (81%)	☐ Curriculum	129 (83%)
☐ Educational Psychology	59 (38%)	☐ Counseling	34 (22%)
☐ Educational Sociology	29 (19%)	☐ Other _____	

n = 155 (100%)

7. Say you are interested in a particular educational topic, generally speaking, do you feel you might have any difficulty in locating applied research on that topic?

11 (7%)	☐	a great amount of difficulty
56 (36%)	☐	a medium amount of difficulty
60 (39%)	☐	a small amount of difficulty
27 (18%)	☐	no difficulty

n = 154 (100%)

8. On how many occasions, say within the past year, have you found it necessary to survey the literature in an attempt to obtain applied research on a particular educational topic? Mean = 1.95 occasions n = 142
$P(1.69 \leq \mu \leq 2.21) = .90$ Standard Deviation = 1.91

9. Do you personally (not your school or school district) subscribe to any educational journals, magazines, or publications which emphasize applied educational research studies?

86	70	156
☐ Yes	☐ No	
55%	45%	100%

10. Does your school (not yourself) subscribe to any educational journals, magazines, or publications which emphasize applied educational research studies?

130	24	154
☐ Yes	☐ No	
84%	16%	100%

11. If your answer was "YES":

SKIP QUESTION 11 IF YOU ANSWERED "NO" TO BOTH QUESTIONS 9 & 10

a.) to question 9, please list those which you subscribe to

b.) to question 10, please list those which your school subscribes to

12. How frequently, on the average, do you discuss applied educational research studies with other administrators (administrators either within or outside your school district)?

26 (18%)	☐	zero times a month
60 (40%)	☐	once a month
32 (22%)	☐	twice a month
27 (18%)	☐	three or four times a month
3 (2%)	☐	five or six times a month
	☐	other _____

n = 148 (100%)

13. Do you feel that other administrators (administrators within or outside your school district) generally value applied educational research?

8 (6%)	☐	they appear to place a great amount of value on such research
66 (49%)	☐	they appear to place a medium amount of value on such research
60 (45%)	☐	they appear to place a small amount of value on such research
0 (0%)	☐	they appear to place no value on such research
	☐	can't say

n = 134 (100%)

14. How frequently, on the average, do you discuss applied educational research studies with teachers in your particular school?

23 (16%)	☐	zero times a month
57 (41%)	☐	once a month
31 (22%)	☐	twice a month
22 (16%)	☐	three or four times a month
7 (5%)	☐	five or six times a month
	☐	other _____

n = 140 (100%)

15. Do you feel that teachers in your particular school generally value applied educational research?

1 (1%)	☐	they appear to place a great amount of value on such research
59 (42%)	☐	they appear to place a medium amount of value on such research
76 (54%)	☐	they appear to place a small amount of value on such research
5 (3%)	☐	they appear to place no value on such research
	☐	can't say

n = 141 (100%)

16. In taking further education courses, how inclined would you be to enroll in courses which strongly emphasize applied educational research studies?

22 (14%)	☐ very inclined	
67 (43%)	☐ moderately inclined	n = 156 (100%)
50 (32%)	☐ slightly inclined	
17 (11%)	☐ not inclined at all	

17. In taking further education courses, how inclined would you be to enroll in educational research methodology courses (that is, courses emphasizing measurement, statistics, and research design)?

13 (8%)	☐ very inclined	
45 (29%)	☐ moderately inclined	n = 156 (100%)
50 (32%)	☐ slightly inclined	
48 (31%)	☐ not inclined at all	

18. Do you feel that, given the opportunity, you would be interested in attending a conference or workshop devoted primarily to the explanation and discussion of applied educational research findings?

37 (24%)	☐ very interested	
55 (35%)	☐ moderately interested	n = 156 (100%)
45 (29%)	☐ slightly interested	
19 (12%)	☐ not interested at all	

19. In your estimation, how knowledgeable are you on applied educational research findings in each of the following areas? Please place a check in each row.

n =	Applied Educational Research in:	Very knowledgeable	Moderately knowledgeable	Slightly knowledgeable	Not knowledgeable
155 (100%)	Ed. Administration	9 (6%)	90 (58%)	46 (30%)	10 (6%)
151 (100%)	Ed. Psychology	10 (7%)	47 (31%)	64 (42%)	30 (20%)
149 (100%)	Ed. Sociology	4 (3%)	36 (24%)	69 (46%)	40 (27%)
155 (100%)	Curriculum	20 (13%)	83 (54%)	47 (30%)	5 (3%)
150 (100%)	Counseling	13 (9%)	40 (27%)	70 (47%)	27 (18%)

20. Please rank (by indicating first, second, third, etc.) the following in terms of the extent to which they help you learn of applied educational research. (First is most helpful, second is somewhat less helpful, third is even less helpful, etc.)

_____ education courses
_____ discussions with other educators (teachers, administrators)
_____ reading of education and commercial publications
_____ conferences, workshops, conventions
_____ television, radio
_____ other _____

(See page 13 for responses to item 20.)

21. Should "more attention," the "same amount of attention," or "less attention" be given to the dissemination of applied educational research?

89 (60%)	☐	more attention
51 (35%)	☐	same amount of attention
7 (5%)	☐	less attention

n = 147 (100%)

22. If your answer to the previous question was "more attention," in what way should more attention be given to the dissemination of applied educational research?

SKIP QUESTION 22 IF YOUR ANSWER WAS NOT "MORE ATTENTION" TO QUESTION 21

_____
_____
_____
_____

Now we would like to ask a few questions on the use an administrator might make of applied educational research.

23. Are you able to utilize applied educational research in the everyday, operating decisions an administrator must make when conducting an ongoing educational program?

15	☐	frequently	72	☐	occasionally	64	☐	seldom	3	☐	never	154
10%			47%			41%			2%			100%

24. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 24 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 23

_____
_____
_____
_____

25. Are you able to utilize applied educational research in the leadership of your staff?

12	☐	frequently	70	☐	occasionally	66	☐	seldom	4	☐	never	152
8%			46%			43%			3%			100%

26. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 26 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 25

_____
_____
_____
_____

7

27. Are you able to utilize applied educational research in the developing of new educational programs?

12	74	62	3	151
☐ frequently	☐ occasionally	☐ seldom	☐ never	
8%	49%	41%	2%	100%

28. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 28 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 27

_____
_____
_____
_____

29. Are you able to utilize applied educational research in your relations with the lay public?

5	42	95	10	152
☐ frequently	☐ occasionally	☐ seldom	☐ never	
3%	28%	62%	7%	100%

30. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 30 IF YOUR ANSWER WAS "SELDOM" OR NEVER" TO QUESTION 29

_____
_____
_____
_____

31. Are you able to utilize applied educational research in the furthering of your own professional growth?

12	63	69	4	148
☐ frequently	☐ occasionally	☐ seldom	☐ never	
8%	42%	47%	3%	100%

32. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 32 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 31

_____
_____
_____
_____

33. Please indicate (by circling your answer) whether you agree, disagree or are uncertain about each of the following statements:

a.) To the school administrator, applied educational research is often somewhat confusing.	n = 155 (100%)	64 (41%) Agree	47 (30%) Uncertain	44 (29%) Disagree
b.) Applied educational research is useful in keeping the school administrator up-to-date on innovative practices.	n = 154 (100%)	126 (82%) Agree	23 (15%) Uncertain	5 (3%) Disagree
c.) The traditional methods of education are ultimately more beneficial to the school administrator than those methods suggested by applied educational research.	n = 154 (100%)	10 (7%) Agree	57 (37%) Uncertain	87 (56%) Disagree

	n = 154 (100%)	25 (16%) Agree	47 (31%) Uncertain	82 (53%) Disagree
d.) Applied educational research cannot really help solve the everyday problems which the school administrator encounters.				
	n = 153 (100%)	67 (44%) Agree	55 (36%) Uncertain	31 (20%) Disagree
e.) When decisions are made on the basis of applied educational research, the school administrator will feel much more personally secure.				
	n = 152 (100%)	117 (77%) Agree	29 (19%) Uncertain	6 (4%) Disagree
f.) The use of applied educational research provides the school administrator with a more scientific basis for his behavior.				
	n = 152 (100%)	68 (45%) Agree	73 (48%) Uncertain	11 (7%) Disagree
g.) The use of applied educational research can help prevent a considerable waste of money and resources in an administrator's school system.				
	n = 151 (100%)	15 (10%) Agree	34 (22%) Uncertain	102 (68%) Disagree
h.) From the school administrator's standpoint, applied educational research really has meaning only to educational researchers.				
	n = 151 (100%)	16 (11%) Agree	36 (24%) Uncertain	99 (65%) Disagree
i.) The school administrator would be better off relying on his own personal experience than to rely on applied educational research.				
	n = 151 (100%)	30 (20%) Agree	42 (28%) Uncertain	79 (52%) Disagree
j.) The educational topics frequently researched are, in the eyes of the school administrator, of little relevance to the schools.				
	n = 151 (100%)	110 (73%) Agree	35 (23%) Uncertain	6 (4%) Disagree
k.) Applied educational research can be instrumental in furthering the development of the school administrator's profession.				
	n = 151 (100%)	10 (7%) Agree	35 (23%) Uncertain	106 (70%) Disagree
l.) Applied educational research can help the school administrator little in improving his school program.				
	n = 151 (100%)	85 (56%) Agree	57 (38%) Uncertain	9 (6%) Disagree
m.) Applied educational research will make the school administrator more cautious regarding educational fads.				
	n = 151 (100%)	113 (75%) Agree	30 (20%) Uncertain	8 (5) Disagree
n.) By using applied educational research, the school administrator can avoid professional stagnation.				
	n = 151 (100%)	91 (60%) Agree	37 (25%) Uncertain	23 (15%) Disagree
o.) It is often difficult for the school administrator to take applied educational research and extrapolate it into a school setting.				
	n = 151 (100%)	118 (78%) Agree	30 (20%) Uncertain	3 (2%) Disagree
p.) Applied educational research can be instrumental in bringing about more rational change within an administrator's school system.				
	n = 151 (100%)	37 (25%) Agree	38 (25%) Uncertain	76 (50%) Disagree
q.) The school administrator does not really have time to look for opportunities to utilize applied educational research.				

Now we would like to ask you a few questions regarding the discussion or communication of applied educational research with others (teachers, other administrators, school board members, and the lay public).

34. When you find applied educational research articles which you personally feel have relevance, do you pass these articles along:

a.) to teachers

76	68	11	1	156
☐ frequently	☐ occasionally	☐ seldom	☐ never	
49%	43%	7%	1%	100%

b.) to other administrators

39	81	29	6	155
☐ frequently	☐ occasionally	☐ seldom	☐ never	
25%	52%	19%	4%	100%

c.) to school board members

☐ frequently ☐ occasionally ☐ seldom ☐ never

35. During the past year, on how many occasions were you able to pass along applied educational research articles:

SKIP QUESTION 35 IF YOU ANSWERED "NEVER" TO ALL PARTS (PARTS A,B,&C) OF QUESTION 34.

			Standard Deviation =
a.) to teachers	n = 128	Mean = 6.79 occasions	5.20
b.) to other administrators	n = 135	Mean = 4.75 occasions	4.71
c.) to school board members		_____ occasions	
a.) $P(6.05 \leq \mu \leq 7.53) = .90$			
b.) $P(4.09 \leq \mu \leq 5.41) = .90$			

36. At what percentage of your staff meetings would you estimate applied educational research studies are at least mentioned or discussed?

n = 150 Mean = 19.80 % Standard Deviation = 21.26

$P(17.02 \leq \mu \leq 22.58) = .90$

37. Who principally attends these staff meetings?

☐ mostly teachers
☐ mostly other administrators
☐ equal number of teachers and administrators

38. How frequently, on the average, do you discuss applied educational research studies with school board members (individually or collectively)?

☐ zero times a month
☐ once a month
☐ twice a month
☐ three or four times a month
☐ five or six times a month
☐ other _____

39. Do you feel that board of education members generally value applied educational research?

- ☐ they appear to place a great amount of value on such research
- ☐ they appear to place a medium amount of value on such research
- ☐ they appear to place a small amount of value on such research
- ☐ they appear to place no value on such research
- ☐ can't say

40. How frequently, on the average, do you discuss applied educational research studies with the lay public (for example, at personal meetings with parents, PTA meetings, etc.)?

75 (60%)	☐	zero times a month
32 (25%)	☐	once a month
7 (6%)	☐	twice a month
8 (6%)	☐	three or four times a month
4 (3%)	☐	five or six times a month
	☐	other _____

n = 126 (100%)

41. As a school principal, do you feel it is part of your professional responsibility to:

a.) keep teachers within your particular school up-to-date on applied educational research?

YES	NO	
132	20	152
87%	13%	100%

b.) keep other administrators within your school system up-to-date on applied educational research?

YES	NO	
71	77	148
48%	52%	100%

c.) keep your school board members up-to-date on applied educational research?

☐ YES ☐ NO

d.) keep the lay public (parents of students attending your school) up-to-date on applied educational research?

YES	NO	
96	51	147
65%	35%	100%

42. Within your particular school (not your school district) is applied educational research literature readily available for those who might possibly be interested in such material?

YES	NO	
90	62	152
59%	41%	100%

Now we would like to ask you a few questions about some applied research on a particular educational topic. We would like to ask you some questions on how, say, class size relates to student achievement.

43. In your own estimation, do you feel you know a "great deal," "something," "very little," or "nothing at all" about how class size relates to student achievement?

22 (14%)	☐ a great deal	
115 (75%)	☐ something	
17 (11%)	☐ very little	n = 154 (100%)
0 (0%)	☐ nothing at all	

44. From you knowledge of class size and student achievement, which of the following would you tend to agree with:

0 (0%)	☐	large classes bring about greater student achievement
33 (22%)	☐	small classes bring about greater student achievement
120 (78%)	☐	there is inconclusive evidence as to whether large or small classes bring about greater student achievement

n = 153 (100%)

45. Have you ever had occasion to use the applied research available on class size and student achievement?

51	101	152
☐ YES	☐ NO	
34%	66%	100%

46. If your answer was "YES" to the previous question, in what way did you use the applied research available on class size and student achievement?

SKIP QUESTION 46 IF YOUR ANSWER WAS "NO" TO QUESTION 45

_____
_____
_____
_____
_____

47. Regarding the applied research available on class size and student achievement, have you ever had occasion to discuss, or pass along, such research:

n = 148 (100%)	a.) to teachers	113 (76%)	☐ YES	☐ NO 35 (24%)
n = 141 (100%)	b.) to other administrators	86 (61%)	☐ YES	☐ NO 55 (39%)
	c.) to school board members		☐ YES	☐ NO
n = 134 (100%)	d.) to the lay public (specifically, parents)	44 (33%)	☐ YES	☐ NO 90 (67%)

To complete this questionnaire, we would like to ask a few questions about yourself and your particular school district.

48. Of the college courses which you have taken in your undergraduate and graduate programs, how many courses would you estimate strongly emphasized applied educational research findings? Mean = 3.71 COURSES
n = 126 Standard Deviation = 3.61

49. In your undergraduate and graduate programs, how many educational research methodology courses (that is, courses emphasizing measurement, statistics, and research design) have you taken? Mean = 2.67 COURSES
n = 141 Standard Deviation = 2.02

50. Keeping in mind the definitions given earlier in the questionnaire to the different types of educational research activities, have any evaluation, action research, or applied research studies been conducted within your school district (either by individuals employed by your school district or outside researchers)?

79	66	145
☐ YES	☐ NO	
54%	46%	100%

51. If your answer was "YES" to the previous question:

a.) how many studies have been conducted within your school district in the past two years? _____ studies

SKIP QUESTION 51 IF YOUR ANSWER WAS "NO" TO QUESTION 50

b.) would you briefly describe this study or studies?

_____
_____
_____
_____
_____

c.) were the results of this study or studies communicated to the entire staff?

☐ YES ☐ NO

52. Please list any professional organizations (educational or research-oriented organizations) which you belong to.

_____
_____
_____
_____
_____
_____

53. What is the highest college degree which you have obtained?

Bachelors	Masters	Masters Plus	Educ. Specialist	Doctorate
1 (1%)	108 (70%)	22 (14%)	18 (11%)	6 (4%)

n = 155 (100%)

54. What is the highest college degree you expect to attain in your lifetime?

Bachelors	Masters	Masters Plus	Educ. Specialist	Doctorate
1 (1%)	39 (29%)	9 (7%)	51 (38%)	33 (25%)

n = 133 (100%)

55. How many years have you been employed in an educational capacity?

Mean = 18.60 years
Standard Deviation = 7.74 n = 156

13

56. While employed in an educational capacity, what types of positions have you held? Please check only one.

- ☐ primarily administrative positions
- ☐ primarily teaching positions
- ☐ primarily counseling positions
- ☐ other _____

NAME _____ AGE _____

POSITION _____

SCHOOL _____

SCHOOL DISTRICT _____

CITY _____ COUNTY _____

Mean School District Size = 30,450
Standard Deviation = 71,664
n = 151

Thank you very much for your time and effort.

Responses to item 20:

	RANK				
	First	Second	Third	Fourth	Fifth
Education Courses	26(17%)	28(18%)	29(19%)	49(32%)	22(14%)
Discussions with Other Educators	42(27%)	43(28%)	36(23%)	30(20%)	3(2%)
Reading of Educ. and Comm. Publications	48(31%)	40(26%)	37(24%)	28(18%)	1(1%)
Conferences, Workshops, Conventions	37(24%)	41(27%)	44(28%)	26(17%)	6(4%)
Television, Radio	1(1%)	2(1%)	8(5%)	21(14%)	122(79%)

n = 154 (100%)

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF EDUCATION · DEPARTMENT OF ADMINISTRATION AND HIGHER EDUCATION
ERICKSON HALL

As educators, we frequently hear the subject of educational research mentioned these days. Unfortunately, however, there exists little information on exactly how educational research relates to different educators. We at Michigan State University are attempting to shed some light on this subject. Specifically, we are interested in knowing how a particular type of educational research, applied educational research, relates to a particular group of educators, school administrators.

By virtue of your position you have been selected as part of a random sample of Michigan school administrators. Enclosed is a questionnaire which, as would be expected, deals with the school administrator's role or relationship to applied educational research. It is hoped that sometime in the next three or four days you will be able to complete and return this questionnaire. We have found that this questionnaire takes between fifteen to twenty minutes to complete.

The information gained from this particular endeavor is important in many ways. Firstly, it should help school administrators assess their role or relationship to applied educational research; secondly, it should prove beneficial to individuals responsible for developing future administrator courses and programs; finally, it should aid individuals who actually conduct such applied educational research. If this endeavor is to make any contribution to the educational profession, your cooperation in completing and returning this questionnaire is extremely important.

Of course, all answers to this questionnaire will be kept in the strictest confidence.

Sincerely,

Philip A. Cusick
Assistant Professor
Department of Educational Administration

John Major
Doctoral Candidate
Department of Educational Administration

(SUPERINTENDENT QUESTIONNAIRE)

As you are probably aware, there are different types of educational research activities. For example, there is basic research, applied research, evaluation, and action research. To refresh your memory, the following definitions are provided:

> BASIC RESEARCH is an activity directed toward the increase of generalizable knowledge. It pursues knowledge for its own sake and gives little consideration to practical applications. Since basic research is concerned with detailed fundamental processes, it is often labeled "pure research." Great emphasis is placed on behavioral theories and models.
>
> APPLIED RESEARCH is an activity which produces generalizable knowledge of immediate or practical application. It is mission-oriented and aimed at producing knowledge relevant to solving a general problem. Unlike basic research, applied research is concerned with studying gross, macro processes. Only a moderate amount of attention is given to behavioral theories and models.
>
> EVALUATION is an activity which attempts to determine the worth or social utility of a specific educational program, product, or procedure. Unlike either basic or applied research, evaluation does not attempt to explain "how" or "why" a particular program, product, or procedure meets a particular objective, but rather is concerned simply with whether the program, product, or procedure meets the objective at all. The information gained from evaluation studies is rarely generalizable beyond a particular school or district.
>
> ACTION RESEARCH is an activity which is intended to bring the scientific method to bear on local educational practices. Whether conducted by a teacher or an administrator in his school or district, action research provides objective, systematic techniques for problem solving and decision making. Like evaluation, the results of action research studies are not generalizable to other times or places.

This questionnaire concerns itself solely and entirely with applied educational research. That is, other activities like basic research, evaluation, and action research are not under consideration here.

To give you some examples of applied educational research, here are the titles of some applied research studies found in different educational journals and magazines:

from Educational Administration

1. "A Study of Management Styles in Educational Organizations"
2. "Some Factors Affecting Teacher Survival in School Districts"

from Educational Psychology

1. "The Influence of Massive Rewards on Reading Achievement in Potential Urban School Dropouts"

from Educational Psychology

2. "Identification of Teacher-Classroom Variables Facilitating Pupil Creative Growth"

from Educational Sociology

1. "Social Class Differences in Anxiety of Elementary School Children"
2. "The Occupations of Non-College Youth"

from Curriculum

1. "The Effect of Second Language Instruction on the Reading Proficiency and General School Achievement of Primary Grade Children"
2. "An Approach to the Use of Computers in the Instructional Process"

from Counseling

1. "Some Effects of Varied Educational Placement for Emotionally Disturbed Children"
2. "The Value of Selected Measures of Personality Characteristics as Predictors of College Achievement"

With this type of educational research, that is, applied educational research, in mind, would you please answer the following questions for us.

1. Do you read applied educational research studies which are reported in educational journals or educational magazines (American Educational Research Journal, Educational Administration Quarterly, Education Digest, Phi Delta Kappan, etc.)?

frequently	occasionally	seldom	never	
33	39	13	0	85
39%	46%	15%	0%	100%

2. If your answer was either "frequently", "occasionally," or "seldom" to the previous question:

SKIP QUESTION 2 IF YOUR ANSWER WAS "never" TO QUESTION 1

a.) Do you typically read the original study itself (as reported by the researcher) or an account of the study (as reported by someone other than the researcher)?

the original study	an account of the study	
12	73	85
14%	86%	100%

b.) How many applied educational research studies (of those reported in educational journals or magazines) would you estimate you typically read in a month? Mean = 3.93 studies

$P(3.37 \leq \mu \leq 4.49) = .90$ Standard Deviation = 3.66 n = 81

3. Do you read applied educational research studies which are reported in commercial magazines or commercial newspapers (Life, Newsweek, Saturday Review, New York Times, Detroit News, etc.)?

frequently	occasionally	seldom	never	
27	42	14	2	85
32%	49%	17%	2%	100%

4. If your answer was either "frequently," "occasionally," or "seldom" to the previous question:

SKIP QUESTION 4 IF YOUR ANSWER WAS "never" TO QUESTION 3

a.) How many applied educational research studies (of those reported in commercial newspapers or magazines) would you estimate you typically read in a month? Mean = 3.75 studies n = 81
P(3.16 ≤ μ ≤ 4.34) = .90 Standard Deviation = 3.79

5. When reading applied educational research studies which are reported in either educational journals and magazines or commercial newspapers and magazines:

SKIP QUESTION 5 IF YOU ANSWERED "never" to BOTH QUESTIONS 1 & 3

a.) Do you find the language or terminology used in these studies somewhat difficult to understand?

5	35	41	4	85
☐ frequently	☐ occasionally	☐ seldom	☐ never	
6%	41%	48%	5%	100%

b.) Do you find the research methods (for example, research design, instrumentation, and statistical analysis) used in these studies somewhat difficult to understand?

10	53	20	2	85
☐ frequently	☐ occasionally	☐ seldom	☐ never	
12%	62%	24%	2%	100%

6. In which area(s) do you tend to read applied educational research studies? Please check one or more.

SKIP QUESTION 6 IF YOU ANSWERED "never" TO BOTH QUESTIONS 1 & 3

☐ Educational Administration 83 (98%)
☐ Educational Psychology 33 (39%)
☐ Educational Sociology 24 (28%)
☐ Curriculum 75 (88%)
☐ Counseling 10 (12%)
☐ Other _____
n = 85 (100%)

7. Say you are interested in a particular educational topic. Generally speaking, do you feel you might have any difficulty in locating applied research on that topic?

4 (5%) ☐ a great amount of difficulty
35 (41%) ☐ a medium amount of difficulty
33 (39%) ☐ a small amount of difficulty
13 (15%) ☐ no difficulty
n = 85 (100%)

8. On how many occasions, say within the past year, have you found it necessary to survey the literature in an attempt to obtain applied research on a particular educational topic? Mean = 3.32 occasions
P(2.76 ≤ μ ≤ 3.88) = .90 Standard Deviation = 3.74 n = 82

9. Do you personally (not your school district) subscribe to any educational journals, magazines, or publications which emphasize applied educational research studies?

38	47	85
☐ YES	☐ NO	
45%	55%	100%

10. Does your school district (not yourself) subscribe to any educational journals, magazines, or publications which emphasize applied educational research studies?

69	14	83
☐ YES	☐ NO	
83%	17%	100%

11. If your answer was "YES":

SKIP QUESTION 11 IF YOU ANSWERED "NO" TO BOTH QUESTIONS 9 & 10

a.) to question 9, please list those to which you subscribe

b.) to question 10, please list those to which your school district subscribes

12. How frequently, on the average, do you discuss applied educational research studies with other administrators (administrators either within or outside your school district)

9 (11%)	☐	zero times a month
26 (32%)	☐	once a month
20 (25%)	☐	twice a month
17 (21%)	☐	three or four times a month
9 (11%)	☐	five or six times a month
	☐	other _____

n = 81 (100%)

13. Do you feel that other administrators (administrators within or outside your school district) generally value applied educational research?

7 (9%)	☐	they appear to place a great amount of value on such research
45 (55%)	☐	they appear to place a medium amount of value on such research
28 (35%)	☐	they appear to place a small amount of value on such research
1 (1%)	☐	they appear to place no value on such research
	☐	can't say

n = 81 (100%)

14. How frequently, on the average, do you discuss applied educational research studies with teachers in your particular school system?

26 (36%)	☐	zero times a month
27 (37%)	☐	once a month
8 (11%)	☐	twice a month
7 (10%)	☐	three or four times a month
4 (6%)	☐	five or six times a month
	☐	other _____

n = 72 (100%)

15. Do you feel that teachers in your school system generally value applied educational research?

1 (1%)	☐	they appear to place a great amount of value on such research
30 (41%)	☐	they appear to place a medium amount of value on such research
41 (55%)	☐	they appear to place a small amount of value on such research
2 (3%)	☐	they appear to place no value on such research
	☐	can't say

n = 74 (100%)

16. In taking further education courses, how inclined would you be to enroll in courses which strongly emphasize applied educational research studies?

18 (21%)	☐ very inclined	
41 (48%)	☐ moderately inclined	n = 85 (100%)
17 (20%)	☐ slightly inclined	
9 (11%)	☐ not inclined at all	

17. In taking further education courses, how inclined would you be to enroll in educational research methodology courses (that is, courses emphasizing measurement, statistics, and research design)?

14 (16%)	☐ very inclined	
20 (24%)	☐ moderately inclined	n = 85 (100%)
30 (35%)	☐ slightly inclined	
21 (25%)	☐ not inclined at all	

18. Do you feel that, given the opportunity, you would be interested in attending a conference or workshop devoted primarily to the explanation and discussion of applied educational research findings?

26 (31%)	☐ very interested	
27 (32%)	☐ moderately interested	n = 84 (100%)
24 (29%)	☐ slightly interested	
7 (8%)	☐ not interested at all	

19. In your estimation, how knowledgeable are you on applied educational research findings in each of the following areas? Please place a check in each row.

n =	Applied Educational Research in:	Very knowledgeable	Moderately knowledgeable	Slightly knowledgeable	Not knowledgeable
84 (100%)	Ed. Administration	18 (22%)	54 (64%)	12 (14%)	0 (0%)
85 (100%)	Ed. Psychology	5 (6%)	25 (29%)	37 (44%)	18 (21%)
84 (100%)	Ed. Sociology	2 (2%)	28 (33%)	35 (42%)	19 (23%)
85 (100%)	Curriculum	19 (23%)	47 (55%)	18 (21%)	1 (1%)
83 (100%)	Counseling	4 (5%)	21 (25%)	41 (49%)	17 (21%)

20. Please rank (by indicating first, second, third, etc.) the following in terms of the extent to which they help you learn of applied educational research. (First is most helpful, second is somewhat less helpful, third is even less helpful, etc.)

_____ education courses
_____ discussions with other educators (teachers, administrators)
_____ reading of education and commercial publications
_____ conferences, workshops, conventions
_____ television, radio
_____ other _____

(See page 13 for responses to item 20.)

21. Should "more attention," the "same amount of attention," or "less attention" be given to the dissemination of applied educational research?

51 (61%)	☐	more attention
29 (35%)	☐	same amount of attention
3 (4%)	☐	less attention

n = 83 (100%)

22. If your answer to the previous question was "more attention," in what way should more attention be given to the dissemination of applied educational research?

SKIP QUESTION 22 IF YOUR ANSWER WAS NOT "MORE ATTENTION" TO QUESTION 21

_____
_____
_____
_____

Now we would like to ask a few questions on the use an administrator might make of applied educational research.

23. Are you able to utilize applied educational research in the everyday, operating decisions an administrator must make when conducting an ongoing educational program?

14	46	23	2	85
☐ frequently	☐ occasionally	☐ seldom	☐ never	
17%	54%	27%	2%	100%

24. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 24 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 23

_____
_____
_____
_____

25. Are you able to utilize applied educational research in the leadership of your staff?

9	44	28	1	82
☐ frequently	☐ occasionally	☐ seldom	☐ never	
11%	54%	34%	1%	100%

26. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 26 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 25

_____
_____
_____
_____

27. Are you able to utilize applied educational research in the developing of new educational programs?

12	49	21	0	82
☐ frequently	☐ occasionally	☐ seldom	☐ never	
15%	60%	25%	0%	100%

28. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 28 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 27

_____
_____
_____
_____

29. Are you able to utilize applied educational research in your relations with the lay public?

5	34	43	2	84
☐ frequently	☐ occasionally	☐ seldom	☐ never	
6%	41%	51%	2%	100%

30. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 30 IF YOUR ANSWER WAS "SELDOM" OR NEVER" TO QUESTION 29

_____
_____
_____
_____

31. Are you able to utilize applied educational research in the furthering of your own professional growth?

7	47	27	0	81
☐ frequently	☐ occasionally	☐ seldom	☐ never	
9%	58%	33%	0%	100%

32. If your answer was either "frequently" or "occasionally" to the previous question, would you briefly give some examples.

SKIP QUESTION 32 IF YOUR ANSWER WAS "SELDOM" OR "NEVER" TO QUESTION 31

_____
_____
_____
_____

33. Please indicate (by circling your answer) whether you agree, disagree or are uncertain about each of the following statements:

a.) To the school administrator, applied educational research is often somewhat confusing.	n = 85 (100%)	34 (40%) Agree	27 (32%) Uncertain	24 (28%) Disagree
b.) Applied educational research is useful in keeping the school administrator up-to-date on innovative practices.	n = 85 (100%)	74 (87%) Agree	8 (9%) Uncertain	3 (4%) Disagree
c.) The traditional methods of education are ultimately more beneficial to the school administrator than those methods suggested by applied educational research.	n = 85 (100%)	5 (6%) Agree	30 (35%) Uncertain	50 (59%) Disagree

	n = 85 (100%)	9 (11%)	11 (13%)	65 (76%)
d.) Applied educational research cannot really help solve the everyday problems which the school administrator encounters.		Agree	Uncertain	Disagree
	n = 84 (100%)	48 (57%)	29 (35%)	7 (8%)
e.) When decisions are made on the basis of applied educational research, the school administrator will feel much more personally secure.		Agree	Uncertain	Disagree
	n = 84 (100%)	67 (80%)	16 (19%)	1 (1%)
f.) The use of applied educational research provides the school administrator with a more scientific basis for his behavior.		Agree	Uncertain	Disagree
	n = 84 (100%)	54 (64%)	23 (28%)	7 (8%)
g.) The use of applied educational research can help prevent a considerable waste of money and resources in an administrator's school system.		Agree	Uncertain	Disagree
	n = 84 (100%)	2 (2%)	13 (16%)	69 (82%)
h.) From the school administrator's standpoint, applied educational research really has meaning only to educational researchers.		Agree	Uncertain	Disagree
	n = 84 (100%)	1 (1%)	14 (17%)	69 (82%)
i.) The school administrator would be better off relying on his own personal experience than to rely on applied educational research.		Agree	Uncertain	Disagree
	n = 84 (100%)	18 (21%)	32 (38%)	34 (41%)
j.) The educational topics frequently researched are, in the eyes of the school administrator, of little relevance to the schools.		Agree	Uncertain	Disagree
	n = 84 (100%)	71 (85%)	13 (15%)	0 (0%)
k.) Applied educational research can be instrumental in furthering the development of the school administrator's profession.		Agree	Uncertain	Disagree
	n = 84 (100%)	0 (0%)	6 (7%)	78 (93%)
l.) Applied educational research can help the school administrator little in improving his school program.		Agree	Uncertain	Disagree
	n = 84 (100%)	60 (72%)	17 (20%)	7 (8%)
m.) Applied educational research will make the school administrator more cautious regarding educational fads.		Agree	Uncertain	Disagree
	n = 84 (100%)	62 (74%)	18 (21%)	4 (5%)
n.) By using applied educational research, the school administrator can avoid professional stagnation.		Agree	Uncertain	Disagree
	n = 84 (100%)	50 (60%)	18 (21%)	16 (19%)
o.) It is often difficult for the school administrator to take applied educational research and extrapolate it into a school setting.		Agree	Uncertain	Disagree
	n = 84 (100%)	76 (91%)	6 (7%)	2 (2%)
p.) Applied educational research can be instrumental in bringing about more rational change within an administrator's school system.		Agree	Uncertain	Disagree
	n = 84 (100%)	20 (24%)	15 (18%)	49 (58%)
q.) The school administrator does not really have time to look for opportunities to utilize applied educational research.		Agree	Uncertain	Disagree

Now we would like to ask you a few questions regarding the discussion or communication of applied educational research with others (teachers, other administrators, school board members, and the lay public).

34. When you find applied educational research articles which you personally feel have relevance, do you pass these articles along:

a.) to teachers

22	44	13	4	83
☐ frequently	☐ occasionally	☐ seldom	☐ never	
26%	53%	16%	5%	100%

b.) to other administrators

57	26	1	1	85
☐ frequently	☐ occasionally	☐ seldom	☐ never	
67%	31%	1%	1%	100%

c.) to school board members

22	44	15	4	85
☐ frequently	☐ occasionally	☐ seldom	☐ never	
26%	52%	17%	5%	100%

35. During the past year, on how many occasions were you able to pass along applied educational research articles:

SKIP QUESTION 35 IF YOU ANSWERED "NEVER" TO ALL PARTS (PARTS A,B,&C) OF QUESTION 34.

		Standard Deviation =
a.) to teachers	n = 68	Mean = 4.97 occasions 5.21
b.) to other administrators	n = 66	Mean = 9.04 occasions 6.22
c.) to school board members	n = 72	Mean = 5.48 occasions 5.96

a.) $P(4.07 \leq \mu \leq 5.87) = .90$
b.) $P(7.92 \leq \mu \leq 10.16) = .90$
c.) $P(4.48 \leq \mu \leq 6.48) = .90$

36. At what percentage of your staff meetings would you estimate applied educational research studies are at least mentioned or discussed?

n = 83 Mean = 19.75 % Standard Deviation = 19.92
$P(16.74 \leq \mu \leq 22.76) = .90$

37. Who principally attends these staff meetings?

☐ mostly teachers
☐ mostly other administrators
☐ equal number of teachers and administrators

38. How frequently, on the average, do you discuss applied educational research studies with school board members (individually or collectively)?

12 (19%)	☐	zero times a month
36 (57%)	☐	once a month
11 (17%)	☐	twice a month
3 (5%)	☐	three or four times a month
1 (2%)	☐	five or six times a month
	☐	other _____

n = 63 (100%)

39. Do you feel that board of education members generally value applied educational research?

5 (7%) ☐ they appear to place a great amount of value on such research
29 (42%) ☐ they appear to place a medium amount of value on such research
33 (47%) ☐ they appear to place a small amount of value on such research
3 (4%) ☐ they appear to place no value on such research
☐ can't say

n = 70 (100%)

40. How frequently, on the average, do you discuss applied educational research studies with the lay public (for example, at personal meetings with parents, PTA meetings, etc.)?

27 (46%) ☐ zero times a month
24 (40%) ☐ once a month
4 (7%) ☐ twice a month
3 (5%) ☐ three or four times a month
1 (2%) ☐ five or six times a month
☐ other _____

n = 59 (100%)

41. As a school superintendent, do you feel it is part of your professional responsibility to:

a.) keep teachers within your school system up-to-date on applied educational research?

55 ☐ YES	28 ☐ NO	83
66%	34%	100%

b.) keep other administrators within your school system up-to-date on applied educational research?

76 ☐ YES	8 ☐ NO	84
90%	10%	100%

c.) keep your school board members up-to-date on applied educational research?

75 ☐ YES	8 ☐ NO	83
90%	10%	100%

d.) keep the lay public (parents of students who attend schools within your school district) up-to-date on applied educational research?

57 ☐ YES	25 ☐ NO	82
70%	30%	100%

42. Within your school district is applied educational research literature readily available for those who might possibly be interested in such material?

54 ☐ YES	29 ☐ NO	83
65%	35%	100%

Now we would like to ask you a few questions about some applied research on a particular educational topic. We would like to ask you some questions on how, say, class size relates to student achievement.

43. In your own estimation, do you feel you know a "great deal," "something," "very little," or "nothing at all" about how class size relates to student achievement?

16 (19%) ☐ a great deal
62 (74%) ☐ something
5 (6%) ☐ very little
1 (1%) ☐ nothing at all

n = 84 (100%)

44. From you knowledge of class size and student achievement, which of the following would you tend to agree with:

0 (0%) ☐ large classes bring about greater student achievement
6 (7%) ☐ small classes bring about greater student achievement
78 (93%) ☐ there is inconclusive evidence as to whether large or small classes bring about greater student achievement

n = 84 (100%)

45. Have you ever had occasion to use the applied research available on class size and student achievement?

55	29	84
☐ YES	☐ NO	
65%	35%	100%

46. If your answer was "YES" to the previous question, in what way did you use the applied research available on class size and student achievement?

SKIP QUESTION 46 IF YOUR ANSWER WAS "NO" TO QUESTION 45

_____
_____
_____
_____
_____

47. Regarding the applied research available on class size and student achievement, have you ever had occasion to discuss, or pass along, such research:

n = 80 (100%)	a.) to teachers	69 (86%)	☐ YES	☐ NO 11 (14%)
n = 84 (100%)	b.) to other administrators	79 (94%)	☐ YES	☐ NO 5 (6%)
n = 78 (100%)	c.) to school board members	66 (85%)	☐ YES	☐ NO 12 (15%)
n = 78 (100%)	d.) to the lay public (specifically, parents)	43 (61%)	☐ YES	☐ NO 27 (39%)

To complete this questionnaire, we would like to ask a few questions about yourself and your particular school district.

48. Of the college courses which you have taken in your undergraduate and graduate programs, how many courses would you estimate strongly emphasized applied educational research findings? Mean = 3.49 COURSES
n = 72 Standard Deviation = 3.26

49. In your undergraduate and graduate programs, how many educational research methodology courses (that is, courses emphasizing measurement, statistics, and research design) have you taken? Mean = 2.95 COURSES
n = 78 Standard Deviation = 1.80

50. Keeping in mind the definitions given earlier in the questionnaire to the different types of educational research activities, have any evaluation, action research, or applied research studies been conducted within your school district (either by individuals employed by your school district or outside researchers)?

44	36	80
☐ YES	☐ NO	
55%	45%	100%

51. If your answer was "YES" to the previous question:

a.) how many studies have been conducted within your school district in the past two years? _____ studies

SKIP QUESTION 51 IF YOUR ANSWER WAS "NO" TO QUESTION 50

b.) would you briefly describe this study or studies?

_____
_____
_____
_____
_____

c.) were the results of this study or studies communicated to the entire staff?

☐ YES ☐ NO

52. Please list any professional organizations (educational or research-oriented organizations) which you belong to.

_____
_____
_____
_____
_____
_____

53. What is the highest college degree which you have obtained?

Bachelors	Masters	Masters Plus	Educ. Specialist	Doctorate	
0 (0%)	30 (36%)	12 (14%)	18 (22%)	23 (28%)	n = 83 (100%)

54. What is the highest college degree you expect to attain in your lifetime?

Bachelors	Masters	Masters Plus	Educ. Specialist	Doctorate	
0 (0%)	19 (24%)	7 (9%)	14 (18%)	38 (49%)	n = 78 (100%)

55. How many years have you been employed in an educational capacity?

Mean = 23.57 years
Standard Deviation = 8.04 n = 83

56. While employed in an educational capacity, what types of positions have you held? Please check only one.

- ☐ primarily administrative positions
- ☐ primarily teaching positions
- ☐ primarily counseling positions
- ☐ other _____

NAME _____ AGE _____

POSITION _____

SCHOOL _____

SCHOOL DISTRICT _____

CITY _____ COUNTY _____

Mean School District Size = 6,108
Standard Deviation = 6,235
n = 83

Thank you very much for your time and effort.

Responses to item 20:

	RANK				
	First	Second	Third	Fourth	Fifth
Education Courses	10(12%)	16(19%)	13(15%)	30(36%)	15(18%)
Discussions with Other Educators	18(21%)	24(29%)	27(32%)	15(18%)	0(0%)
Reading of Educ. and Comm. Publications	38(45%)	18(21%)	19(23%)	9(11%)	0(0%)
Conferences, Workshops, Conventions	18(21%)	26(31%)	25(30%)	15(18%)	0(0%)
Television, Radio	0(0%)	0(0%)	0(0%)	15(18%)	69(82%)

n = 84 (100%)

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF EDUCATION · DEPARTMENT OF ADMINISTRATION AND HIGHER EDUCATION
ERICKSON HALL

Recently we had occasion to send you a questionnaire which dealt with the school administrator's role or relationship to applied educational research. We hope that this questionnaire reached you.

Unfortunately, we have not as yet received your response in regard to this questionnaire. Although we recognize that your time is very valuable, we would be highly appreciative if you would take but a few minutes to complete and return this questionnaire to us. Possibly you have already done this but your completed questionnaire has not as yet reached us. If such is the case, please disregard this communication.

Your cooperation in this matter is greatly needed if we are to learn how applied educational research does, in fact, relate to professional school administrators. Thank you very much.

Sincerely,

Philip A. Cusick
Assistant Professor
Department of Educational Administration

John L. Major
Doctoral Candidate
Department of Educational Administration

(REMINDER LETTER SENT TO PRINCIPALS AND SUPERINTENDENTS)

MICHIGAN STATE UNIVERSITY EAST LANSING · MICHIGAN 48823

COLLEGE OF EDUCATION · DEPARTMENT OF ADMINISTRATION AND HIGHER EDUCATION
ERICKSON HALL

I wonder whether you received my original questionnaire (a questionnaire which I attempted to send you approximately six weeks ago)? I realize there is a strong possibility that it may never have come across your desk.

Recognizing this, I have included another copy of this same questionnaire. It is the intent of this particular instrument to measure how applied educational research relates to Michigan school administrators. I think you will find this questionnaire somewhat interesting to complete. Completing it should also be a rather simple task since the questionnaire consists primarily of objective, multiple-choice type items.

Besides the completion of a doctoral dissertation, this endeavor has certain other objectives. For example, the data collected should prove beneficial to individuals responsible for developing school administrator courses and programs; secondly, the information gained will be helpful to individuals who actually conduct applied educational research; finally, this particular exercise should aid Michigan school administrators themselves in assessing their role or relationship to such research.

Since I do have a deadline to meet, I would appreciate it if you could find time possibly within the next ten days to complete and return this questionnaire. To help expedite this, a stamped addressed envelope is included. Of course, all answers to this questionnaire will be kept in the strictest confidence.

With your assistance we should be able to gain some insight into how applied educational research does in fact relate to Michigan's school administrators.

Sincerely,

John L. Major
Doctoral Candidate
Department of Educational
Administration

(COVER LETTER OF SECOND QUESTIONNAIRE SENT TO PRINCIPALS AND SUPERINTENDENTS)

Description of Superintendents and Principals Responding to the Questionnaire

TABLE A1--Sex of Respondents

	Male	Female	Total
Superintendents	83 (100%)	0 (0%)	83 (100%)
Principals	123 (81%)	29 (19%)	152 (100%)

TABLE A2--Age of Respondents

	Mean Age	Standard Deviation	Number
Superintendents	48.2 years	7.5 years	79
Principals	43.6 years	7.7 years	142

TABLE A3--Years of Educational Experience of Respondents

	Mean Number of Years	Standard Deviation	Number
Superintendents	23.6 years	8.0 years	83
Principals	18.6 years	7.7 years	156

TABLE A4--Highest College Degree Respondents Have Obtained

	Bachelors	Masters	Masters Plus	Educational Specialist	Doctorate	Total
Superintendents	0 (0%)	30 (36%)	12 (14%)	18 (22%)	23 (28%)	83 (100%)
Principals	1 (1%)	108 (70%)	22 (14%)	18 (11%)	6 (4%)	155 (100%)

TABLE A5--Elementary, Junior High, and Senior High Breakdown on Principals Who Responded

	Elementary	Junior High	Senior High	Total
Principals	101 (67%)	25 (16%)	26 (17%)	152 (100%)

APPENDIX B

Additional Analyses Conducted

APPENDIX B

TABLE B1--Repeated Measure Design, Analysis of Variance Comparison of Principals' Mean Responses to Items 2b and 4[a]

Reading from	Mean	Standard Deviation	Number
Educational publications (2b)	3.46 studies	3.31 studies	121
Commercial publications (4)	4.66 studies	4.56 studies	121

F = 8.26 (1 df Measures, 120 df Error), P < .01

[a]Item 2b read, "How many applied educational research studies (of those reported in educational journals or magazines) would you estimate you typically read in a month?" Item 4 read, "How many applied educational research studies (of those reported in commercial newspapers or magazines) would you estimate you typically read in a month?"

TABLE B2--Repeated Measure Design, Analysis of Variance Comparison of Superintendents' Mean Responses to Items 2b and 4

Reading from	Mean	Standard Deviation	Number
Educational publications (2b)	4.01 studies	3.71 studies	78
Commercial publications (4)	3.62 studies	3.78 studies	78

F = 0.95 (1 df Measures, 77 df Error), P > .05

TABLE B3--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 6 (Reading AER Studies in Educational Administration)[a]

	Reading	Not Reading	Total
Superintendents	83 (98%)	2 (2%)	85 (100%)
Principals	125 (81%)	30 (19%)	155 (100%)

$\chi^2 = 13.73$, $P < .001$; contingency coefficient = .23

[a]Item 6 read, "In which area(s) do you tend to read applied educational research studies? Please check one or more."

TABLE B4--Chi-Square of Comparison of Superintendents' and Principals' Responses to Item 6 (Reading AER Studies in Educational Psychology)

	Reading	Not Reading	Total
Superintendents	33 (39%)	52 (61%)	85 (100%)
Principals	59 (38%)	96 (62%)	155 (100%)

$\chi^2 = 0.01$, $P > .05$

TABLE B5--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 6 (Reading AER Studies in Educational Sociology)

	Reading	Not Reading	Total
Superintendents	24 (28%)	61 (72%)	85 (100%)
Principals	29 (19%)	126 (81%)	155 (100%)

$\chi^2 = 2.90$, $P > .05$

TABLE B6--Chi-Square Comparison of Superintendents' and Principals Responses to Item 6 (Reading AER Studies in Curriculum)

	Reading	Not Reading	Total
Superintendents	75 (88%)	10 (12%)	85 (100%)
Principals	129 (83%)	26 (17%)	155 (100%)

$\chi^2 = 1.08$, $P > .05$

TABLE B7--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 6 (Reading AER Studies in Counseling)

	Reading	Not Reading	Total
Superintendents	10 (12%)	75 (88%)	85 (100%)
Principals	34 (22%)	121 (78%)	155 (100%)

$\chi^2 = 3.79$, $P > .05$

TABLE B8--Analysis of Variance Comparison of Superintendents' and Principals' Mean Responses to Item 8[a]

	Mean	Standard Deviation	Number
Superintendents	3.32 occasions	3.74 occasions	82
Principals	1.95 occasions	1.91 occasions	142

$F = 13.30$ (1 df Between, 222 df Within), $P < .0005$; Multiple $R = .23$

[a]Item 8 read, "On how many occasions, say within the past year, have you found it necessary to survey the literature in an attempt to obtain applied research on a particular educational topic?"

TABLE B9--A Listing of the More Frequently Cited, AER-Oriented Publications which Principals and Superintendents Personally Subscribe to (Item 11a) and Their Schools or School Districts Subscribe to (Item 11b)

Publication	Principal Subscribes to	Superintendent Subscribes to	Principal's School Subscribes to	Superintendent's District Subscribes to
The American School Board Journal	..	2	..	14
The Education Digest	21	5	42	28
Educational Administration Quarterly	5	..	5	5
Educational Leadership	10	6	8	4
Grade Teacher	1	..	21	..
The Instructor	2	..	20	..
Journal of Educational Research	3	2	6	8
The Michigan Elementary Principal	15	..	4	2
Michigan School Board Journal	3	1	12	11
The National Elementary Principal	20	..	1	..
Nation's Schools	2	3	8	18
Phi Delta Kappan	24	23	12	10
The Reading Teacher	3	..	14	..
School Management	1	2	5	19

NOTE: Cell entries represent the frequency with which respective publications were cited.

TABLE B10--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 12[a]

Discussions with	0 per Month	1 per Month	2 per Month	3-4 per Month	5-6 per Month	Total
Superintendents	9 (11%)	26 (32%)	20 (25%)	17 (21%)	9 (11%)	81 (100%)
Principals	26 (18%)	60 (40%)	32 (22%)	27 (18%)	3 (2%)	148 (100%)

$\chi^2 = 11.08$, $P < .05$; contingency coefficient = .21

[a]Item 12 read, "How frequently, on the average, do you discuss applied educational research studies with other administrators (administrators either within or outside your school district)?"

TABLE B11--Chi-Square Comparison of Principals' Responses to Items 12 and 14[a]

Discussions with	0 per Month	1 per Month	2 per Month	3-4 per Month	5-6 per Month	Total
Other Administrators (12)	26 (18%)	60 (40%)	32 (22%)	27 (18%)	3 (2%)	148 (100%)
Teachers (14)	23 (16%)	57 (41%)	31 (22%)	22 (16%)	7 (5%)	140 (100%)

$\chi^2 = 2.20$, $P > .05$

[a]Item 12 read, "How frequently, on the average, do you discuss applied educational research studies with other administrators (administrators either within or outside your school district)?" Item 14 read, "How frequently, on the average, do you discuss applied educational research studies with teachers in your particular school?"

TABLE B12--Chi-Square Comparison of Superintendents' Responses to Items 12 and 14[a]

Discussions with	0 per Month	1 per Month	2 per Month	3-4 per Month	5-6 per Month	Total
Other Administrators (12)	9 (11%)	26 (32%)	20 (25%)	17 (21%)	9 (11%)	81 (100%)
Teachers (14)	26 (36%)	27 (37%)	8 (11%)	7 (10%)	4 (6%)	72 (100%)

$\chi^2 = 19.34$, $P < .001$; contingency coefficient = .33

[a]Item 12 read, "How frequently, on the average, do you discuss applied educational research studies with other administrators (administrators either within or outside your school district)?" Item 14 read, "How frequently, on the average, do you discuss applied educational research studies with teachers in your school system?"

TABLE B13--A Listing of Those Ways, Suggested by Principals, Whereby More Attention Should Be Given to the Dissemination of AER (Item 22)

I. Disseminating AER in its Verbal Form

More Attention in
- (a) college courses and seminars (11 examples)
- (b) workshops (8 examples)
- (c) in-service training programs (7 examples)
- (d) professional meetings and conferences (5 examples)

II. Disseminating AER in its Written Form

More Attention in
- (a) popular, frequently-read educational journals and magazines (12 examples)
- (b) commercial magazines and newspapers (10 examples)
- (c) college and university publications (7 examples)
- (d) professional educational organization publications (6 examples)
- (e) Michigan Department of Education publications (5 examples)
- (f) federal, state, or university clearing house publications (5 examples)
- (g) local or intermediate district publications (2 examples)

TABLE B14--A Listing of Those Ways, Suggested by Superintendents, Whereby More Attention Should Be Given to the Dissemination of AER (Item 22)

I. Disseminating AER in its Verbal Form

More Attention in
- (a) professional meetings and conferences (9 examples)
- (b) college courses and seminars (5 examples)
- (c) workshops (4 examples)
- (d) television and radio (2 examples)

II. Disseminating AER in its Written Form

More Attention in
- (a) Michigan Department of Education publications (8 examples)
- (b) college and university publications (6 examples)
- (c) commercial magazines and newspapers (5 examples)
- (d) professional educational organization publications (3 examples)
- (e) popular, frequently-read educational journals and magazines (2 examples)
- (f) federal, state, or university clearing house publications (2 examples)
- (g) local or intermediate district publications (1 example)

TABLE B15--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 19 (Knowledge of AER Findings in Educational Administration)[a]

	Very Knowledgeable	Moderately Knowledgeable	Slightly Knowledgeable	Not Knowledgeable	Total
Superintendents	18 (22%)	54 (64%)	12 (14%)	0 (0%)	84 (100%)
Principals	9 (6%)	90 (58%)	46 (30%)	10 (6%)	155 (100%)

$\chi^2 = 22.85$, $P < .001$; contingency coefficient = .29

[a]Item 19 read, "In your estimation, how knowledgeable are you on applied educational research findings in each of the following areas? Please place a check in each row."

TABLE B16--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 19 (Knowledge of AER Findings in Educational Psychology)

	Very Knowledgeable	Moderately Knowledgeable	Slightly Knowledgeable	Not Knowledgeable	Total
Superintendents	5 (6%)	25 (29%)	37 (44%)	18 (21%)	85 (100%)
Principals	10 (7%)	47 (31%)	64 (42%)	30 (20%)	151 (100%)

$\chi^2 = 0.16$, $P > .05$

TABLE B17--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 19 (Knowledge of AER Findings in Educational Sociology)

	Very Knowledgeable	Moderately Knowledgeable	Slightly Knowledgeable	Not Knowledgeable	Total
Superintendents	2 (2%)	28 (33%)	35 (42%)	19 (23%)	84 (100%)
Principals	4 (3%)	36 (24%)	69 (46%)	40 (27%)	149 (100%)

$\chi^2 = 2.30$, $P > .05$

TABLE B18--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 19 (Knowledge of AER Findings in Curriculum)

	Very Knowledgeable	Moderately Knowledgeable	Slightly Knowledgeable	Not Knowledgeable	Total
Superintendents	19 (23%)	47 (55%)	18 (21%)	1 (1%)	85 (100%)
Principals	20 (13%)	83 (54%)	47 (30%)	5 (3%)	155 (100%)

$\chi^2 = 5.66$, $P > .05$

TABLE B19--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 19 (Knowledge of AER Findings in Counseling)

	Very Knowl-edgeable	Moderately Knowl-edgeable	Slightly Knowl-edgeable	Not Knowl-edgeable	Total
Superintendents	4 (5%)	21 (25%)	41 (49%)	17 (21%)	83 (100%)
Principals	13 (9%)	40 (27%)	70 (47%)	27 (18%)	150 (100%)

$\chi^2 = 1.38$, $P > .05$

TABLE B20--Analysis of Variance of the Overall Regression in Predicting Principals' AER Knowledge Index Scores from Certain Correlate Variables

Source of Variation	SS	df	MS	F
Linear regression	188.88	2	94.44	15.07*
Error	557.66	89	6.26	
Total	746.55	91		

*$P < .0005$

TABLE B21--Analysis of Variance of the Overall Regression in Predicting Superintendents' AER Knowledge Index Scores from Certain Correlate Variables

Source of Variation	SS	df	MS	F
Linear regression	64.70	1	64.70	8.81*
Error	455.15	62	7.34	
Total	519.85	63		

*P < .004

TABLE B22--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 44[a]

	Large Classes Advantageous	Small Classes Advantageous	Inconclusive Evidence	Total
Superintendents	0 (0%)	6 (7%)	78 (93%)	84 (100%)
Principals	0 (0%)	33 (22%)	120 (78%)	153 (100%)

χ^2 = 8.21, P < .02; contingency coefficient = .18

[a]Item 44 read, "From your knowledge of class size and student achievement, which of the following would you tend to agree with: large classes bring about greater student achievement; small classes bring about greater student achievement; there is inconclusive evidence as to whether large or small classes bring about greater student achievement."

TABLE B23--A Listing of the Ways in Which Principals Use AER in Their Everyday, Operating Decisions (Item 24)

1. Use AER in general decision making (8 examples)
   - in bringing as much information as possible to bear on different educational problems

2. Use AER in trying to utilize a management by objectives system in the administration of my school (2 examples)

3. Use AER in classroom organization (30 examples)
   - in determining class size (4)
   - in examining the ability grouping question (7)
   - in appraising the open classroom concept (14)
   - in the final scheduling of classes (5)

4. Use AER in student assessment (15 examples)
   - in developing local testing programs (6)
   - in interpreting statewide assessment results (1)
   - in evaluating the effectiveness of grades and report cards (7)
   - in assessing student promotion policies (1)

5. Use AER in conducting local studies (8 examples)
   - in evaluating the effectiveness of certain educational programs (6)
   - in surveying the opinions of the citizenry (2)

6. Use AER in working with individual children (including discipline problems) (7 examples)

7. Use AER in making suggestions and recommendations to the superintendent of my district (3 examples)

8. Use AER in the purchasing of curriculum materials and general school equipment (2 examples)

9. Use AER in making efficient use of the school plant (2 examples)

TABLE B24--A Listing of the Ways in Which Superintendents Use AER in Their Everyday, Operating Decisions (Item 24)

1. Use AER in general decision making (6 examples)
   - in making more rational, objective decisions
2. Use AER in the direct administration of the school district (11 examples)
   - in setting up organizational plans for the district (2)
   - in providing central office services (1)
   - in effectively utilizing data processing methods (2)
   - in implementing a system approach or management by objectives plan (6)
3. Use AER in financial matters (8 examples)
   - in financing programs (3)
   - in assembling a budget (2)
   - in implementing a PPBS approach (2)
   - in making specific purchases (1)
4. Use AER in relations with the Board of Education (9 examples)
   - in making recommendations to the Board (7)
   - in assisting the Board in writing policy (1)
   - in maintaining open communication between teachers and the Board (1)
5. Use AER in classroom organization (15 examples)
   - in determining class size (8)
   - in examining the ability grouping question (3)
   - in appraising the open classroom concept (4)
6. Use AER in evaluation (6 examples)
   - in evaluating different educational programs and methods being utilized in the district (5)
   - in seeking or maintaining accreditation (1)
7. Use AER in student assessment (6 examples)
   - in developing testing programs (2)
   - in interpreting statewide assessment results (1)
   - in evaluating the effectiveness of letter grades (2)
   - in assessing student promotion policies (1)
8. Use AER in conducting local district studies (4 examples)
   - in conducting research in particular educational areas (2)
   - in undertaking community opinion surveys (2)
9. Use AER in the consideration and choice of curriculum texts and teaching materials (3 examples)
10. Use AER in special student areas (2 examples)
    - in consideration of students as tutors (1)
    - in dealing with behavioral-problem students (1)

TABLE B25--A Listing of the Ways in Which Principals Use AER in the Leadership of Their Staffs (Item 26)

1. Use AER in general personnel administration (6 examples)
2. Use AER in the placement of personnel (9 examples)
   - in differential staffing arrangements of personnel (5)
   - in the utilization of special staff (para-professionals, social workers, nurses, etc.) (4)
3. Use AER in setting up workshops and in-service programs for staff (7 examples)
4. Use AER in motivating staff (6 examples)
5. Use AER in achieving better relations with staff (5 examples)
   - in increasing rapport with staff members (3)
   - in increasing my understanding of group dynamics (2)
6. Use AER in advising individual staff members on particular educational problems (7 examples)
7. Use AER in increasing staff participation (12 examples)
   - in involving the staff in general decision making (team management, democratic administration) (4)
   - in utilizing the staff for curriculum development (4)
   - in drawing up committees and defining responsibilities (1)
   - in reviewing general staff suggestions and proposals (3)
8. Use AER in efforts to keep the staff as educationally up-to-date as possible (13 examples)
   - in keeping the staff abreast of new trends (5)
   - in encouraging the staff to experiment with different approaches and techniques (6)
   - in encouraging the staff to seek research regarding their particular problems (2)
9. Use AER in stressing particular issues to the staff (10 examples); in stressing, for example, the importance of
   - teacher attitudes (expectancies) on student achievement (5)
   - reward in influencing student behavior (3)
   - strong links with the home (2)
10. Use AER in justifying planned changes to the staff and in seeking their cooperation in regard to these changes (7 examples)
11. Use AER in bringing about constructive staff meetings (15 examples)
12. Use AER in evaluation of staff (7 examples)
    - in utilizing different evaluation techniques (5)
    - in encouraging staff to continually evaluate themselves (2)

TABLE B26--A Listing of the Ways in Which Superintendents Use AER in the Leadership of Their Staffs (Item 26)

1. Use AER in general personnel administration (4 examples)

2. Use AER in the securing and placing of personnel (12 examples)
   - in recruiting and acclimating new staff (4)
   - in differential staffing arrangements of personnel (5)
   - in staffing special (supportive) service positions (3)

3. Use AER in setting up workshops and in-service programs for staff (7 examples)

4. Use AER in motivating staff (2 examples)

5. Use AER in advising individual staff members on particular instructional problems (5 examples)

6. Use AER in increasing staff participation (13 examples)
   - in involving the staff in general decision making (democratic administration) (4)
   - in utilizing the staff for curriculum development (5)
   - in reviewing general staff suggestions and proposals (4)

7. Use AER in encouraging staff members to experiment with different approaches and techniques (3 examples)

8. Use AER in justifying planned changes to the staff and in seeking their cooperation in regard to these changes (3 examples)

9. Use AER in communicating with staff (13 examples)
   - in disseminating information to staff (3)
   - in achieving constructive staff meetings (10)

10. Use AER in evaluation of staff (4 examples)
    - in utilizing different evaluation techniques (3)
    - in encouraging staff to constantly evaluate themselves (1)

11. Use AER in working with teacher association groups (8 examples)
    - in teacher negotiations (collective bargaining) (7)
    - in the ramifications of teacher tenure (1)

TABLE B27--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 27[a]

	Frequently	Occasionally	Seldom	Never	Total
Superintendents	12 (15%)	49 (60%)	21 (25%)	0 (0%)	82 (100%)
Principals	12 (8%)	74 (49%)	62 (41%)	3 (2%)	151 (100%)

$\chi^2 = 8.66$, $P < .05$; contingency coefficient = .19

[a]Item 27 read, "Are you able to utilize applied educational research in the developing of new educational programs?"

TABLE B28--A Listing of the Ways in Which Principals Use AER in the Developing of New Educational Programs (Item 28)

1. Use AER in general curriculum improvement and revision (25 examples)

2. Use AER in assessing educational trends to keep programs as current and up-to-date as possible (11 examples)

3. Use AER in the "process" of considering alternative programs (18 examples)
   - in assessing educational needs of students (3)
   - in formulating curriculum goals (3)
   - in the writing of specific behavioral objectives (2)
   - in determining the inputs necessary for different programs (2)
   - in examining the programs of other schools (2)
   - in attempting to fashion programs after specific learning theory models (2)
   - in choosing a program among different alternative programs (2)
   - in the writing of a curriculum guide for the program chosen (2)

4. Use AER in considering and developing programs involving (42 examples)
   - team teaching (9)
   - individualized instruction (14)
   - tutorial services (4)
   - modular scheduling (3)
   - mini-courses (2)
   - teaching machines (1)
   - performance contracts (3)
   - outside district grants (3)
   - media centers (2)
   - middle school concept (1)

5. Use AER in considering and developing programs for specific subject areas (59 examples)
   - reading (22)
   - mathematics (11)
   - English (7)
   - spelling (3)
   - science (2)
   - foreign language (1)
   - social studies (2)
   - black history (1)
   - physical education (2)
   - health education (1)
   - vocational education (3)
   - work study (1)
   - career education (1)
   - drug education (2)

TABLE B28--Continued

6. Use AER in considering and developing special programs (14 examples)
   - for the disadvantaged (1)
   - for preschoolers and kindergarteners (1)
   - for underachievers (2)
   - for the handicapped (3)
   - for exceptional students (1)
   - to foster student creativity (1)
   - to aid in the human development of students (3)
   - to bring about behavior modification (2)

TABLE B29--A Listing of the Ways in Which Superintendents Use AER in the Developing of New Educational Programs (Item 28)

1. Use AER in general curriculum improvement and revision (9 examples)

2. Use AER in assessing educational trends to keep programs as current and up-to-date as possible (5 examples)

3. Use AER in the "process" of considering alternative programs (14 examples)
   - in assessing the educational needs of the district (2)
   - in determining the inputs necessary for different programs (5)
   - in reviewing other districts' programs (1)
   - in utilizing a systems approach to curriculum planning (2)
   - in attempting to fashion programs after specific learning theory models (1)
   - in attempting to involve students in curriculum planning (1)
   - in choosing a program among different alternative programs (2)

4. Use AER in considering and developing programs involving (17 examples)
   - team teaching (1)
   - individualized instruction (3)
   - modular scheduling (2)
   - extended school year (4)
   - performance contracts (3)
   - outside district grants (2)
   - middle school concept (1)
   - community education concept (1)

5. Use AER in considering and developing programs for specific subject areas (39 examples)
   - reading (12)
   - mathematics (2)
   - English (2)
   - science (1)
   - social studies (1)
   - social science (2)
   - physical education (1)
   - business education (2)
   - vocational education (4)
   - career education (4)
   - special education (3)
   - counseling and guidance (3)
   - sex education (1)
   - drug education (1)

TABLE B29--Continued

6. Use AER in considering and developing special program (6 examples)
   - for preschoolers and kindergarteners (2)
   - for underachievers (1)
   - for minorities (2)
   - for students with low self-concepts (1)

7. Use AER in planning programs around available and future physical facilities (7 examples)

TABLE B30--A Listing of the Ways in Which Principals Use AER in Their Relations With the Lay Public (Item 30)

1. Use AER in speaking to groups (25 examples)
   - in explaining the rationale for current and future educational programs (7)
   - in discussing particular administrative decisions (3)
   - in justifying different educational expenditures (4)
   - in explaining the factors relating to student academic success (8)
   - in discussing student evaluation and assessment (3)
2. Use AER when discussing particular educational problems in private meetings with parents or citizens (6 examples)
3. Use AER in publicity writing and press releases (3 examples)
4. Use AER in attempting to increase public involvement in the schools (5 examples)
5. Use AER in improving my public relation techniques (5 examples)

TABLE B31--A Listing of the Ways in Which Superintendents Use AER in Their Relations With the Lay Public (Item 30)

1. Use AER in speaking to groups (28 examples)
   - in explaining the rationale for current and future educational programs (10)
   - in discussing particular administrative decisions (7)
   - in justifying different educational expenditures (7)
   - in keeping the public abreast of educational trends (4)
2. Use AER in working with citizen task forces or committees on particular educational problems (3 examples)
3. Use AER in conducting millage and bond campaigns (4 examples)
4. Use AER in trying to effectively communicate with the lay public (6 examples)

TABLE B32--A Listing of the Ways in Which Principals Use AER in the Furthering of Their Professional Growth (Item 32)

1. Use AER in developing a greater sense of educational expertise (13 examples)

2. Use AER in gaining greater insights into my administrative role (27 examples)
   - in making me a more effective administrator (11)
   - in making me more cognizant of administrative styles and practices (8)
   - in helping me meet the expectations of my role (4)
   - in increasing my confidence in myself as an administrator (4)

3. Use AER in furthering my commitment to the educational profession (4 examples)

TABLE B33--A Listing of the Ways in Which Superintendents Use AER in the Furthering of Their Professional Growth (Item 32)

1. Use AER in developing a greater sense of educational expertise (5 examples)

2. Use AER in gaining greater insights into my administrative role (24 examples)
   - in making me a more effective administrator (8)
   - in increasing my human relations skills (6)
   - in making me more open to innovation and change (6)
   - in making me a more systematic observer and evaluator (2)
   - in increasing my confidence in myself as an administrator (2)

3. Use AER in keeping myself abreast of educational trends (4 examples)

4. Use AER in the furthering of my academic pursuits (6 examples)

5. Use AER in the authoring of different educational articles (2 examples)

TABLE B34--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33d[a]

	Agree	Uncertain	Disagree	Total
Superintendents	9 (11%)	11 (13%)	65 (76%)	85 (100%)
Principals	25 (16%)	47 (31%)	82 (53%)	154 (100%)

$\chi^2 = 13.00$, $P < .005$; contingency coefficient = .22

[a]Item 33d read, "Applied educational research cannot really help solve the everyday problems which the school administrator encounters."

TABLE B35--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33e[a]

	Agree	Uncertain	Disagree	Total
Superintendents	48 (57%)	29 (35%)	7 (8%)	84 (100%)
Principals	67 (44%)	55 (36%)	31 (20%)	153 (100%)

$\chi^2 = 6.83$, $P < .05$; contingency coefficient = .16

[a]Item 33e read, "When decisions are made on the basis of applied educational research, the school administrator will feel much more personally secure."

TABLE B36--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33g[a]

	Agree	Uncertain	Disagree	Total
Superintendents	54 (64%)	23 (28%)	7 (8%)	84 (100%)
Principals	68 (45%)	73 (48%)	11 (7%)	152 (100%)

$\chi^2 = 9.75$, $P < .01$; contingency coefficient = .19

[a]Item 33g read, "The use of applied educational research can help prevent a considerable waste of money and resources in an administrator's school system."

TABLE B37--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33h[a]

	Agree	Uncertain	Disagree	Total
Superintendents	2 (2%)	13 (16%)	69 (82%)	84 (100%)
Principals	15 (10%)	34 (22%)	102 (68%)	151 (100%)

$\chi^2 = 7.17$, $P < .05$; contingency coefficient = .17

[a]Item 33h read, "From the school administrator's standpoint, applied educational research really has meaning only to educational researchers."

TABLE B38--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33i[a]

	Agree	Uncertain	Disagree	Total
Superintendents	1 (1%)	14 (17%)	69 (82%)	84 (100%)
Principals	16 (11%)	36 (24%)	99 (65%)	151 (100%)

$\chi^2 = 9.98$, $P < .01$; contingency coefficient = .20

[a]Item 33i read, "The school administrator would be better off relying on his own personal experience than to rely on applied educational research."

TABLE B39--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33l[a]

	Agree	Uncertain	Disagree	Total
Superintendents	0 (0%)	6 (7%)	78 (93%)	84 (100%)
Principals	10 (7%)	35 (23%)	106 (70%)	151 (100%)

$\chi^2 = 17.05$, $P < .001$; contingency coefficient = .26

[a]Item 33l read, "Applied educational research can help the school administrator little in improving his school program."

TABLE B40--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33m[a]

	Agree	Uncertain	Disagree	Total
Superintendents	60 (72%)	17 (20%)	7 (8%)	84 (100%)
Principals	85 (56%)	57 (38%)	9 (6%)	151 (100%)

$\chi^2 = 7.70$, $P < .025$; contingency coefficient = .17

[a]Item 33m read, "Applied educational research will make the school administrator more cautious regarding educational fads."

TABLE B41--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 33p[a]

	Agree	Uncertain	Disagree	Total
Superintendents	76 (91%)	6 (7%)	2 (2%)	84 (100%)
Principals	118 (78%)	30 (20%)	3 (2%)	151 (100%)

$\chi^2 = 6.73$, $P < .05$; contingency coefficient = .16

[a]Item 33p read, "Applied educational research can be instrumental in bringing about more rational change within an administrator's school system."

TABLE B42--Analysis of Variance of the Overall Regression in Predicting Principals' AER Use Index Scores from Certain Attitude Items

Source of Variation	SS	df	MS	F
Linear regression	505.55	8	63.19	15.93*
Error	523.43	132	3.96	
Total	1028.99	140		

*P < .0005

TABLE B43--Analysis of Variance of the Overall Regression in Predicting Superintendents' AER Use Index Scores from Certain Attitude Items

Source of Variation	SS	df	MS	F
Linear regression	157.85	4	39.46	9.84*
Error	288.66	72	4.00	
Total	446.51	76		

*P < .0005

TABLE B44--Analysis of Variance of the Overall Regression in Predicting Principals' AER Use Index Scores from Certain Correlate Variables

Source of Variation	SS	df	MS	F
Linear regression	187.37	3	62.45	10.01*
Error	549.17	88	6.24	
Total	736.55	91		

*P < .0005

TABLE B45--Analysis of Variance of the Overall Regression in Predicting Superintendents' AER Use Index Scores from Certain Correlate Variables

Source of Variation	SS	df	MS	F
Linear regression	67.33	2	33.66	6.72*
Error	285.39	57	5.01	
Total	352.73	59		

*P < .002

TABLE B46--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 45[a]

	Yes	No	Total
Superintendents	55 (65%)	29 (35%)	84 (100%)
Principals	51 (34%)	101 (66%)	152 (100%)

$\chi^2 = 22.28$, $P < .001$; contingency coefficient = .29

[a]Item 45 read, "Have you ever had occasion to use the applied research available on class size and student achievement?"

TABLE B47--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 34a[a]

	Frequently	Occasionally	Seldom	Never	Total
Superintendents	22 (26%)	44 (53%)	13 (16%)	4 (5%)	83 (100%)
Principals	76 (49%)	68 (43%)	11 (7%)	1 (1%)	156 (100%)

$\chi^2 = 16.06$, $P < .005$; contingency coefficient = .25

[a]Item 34a read, "When you find applied educational research articles which you personally feel have relevance, do you pass these articles along to teachers?"

TABLE B48--Analysis of Variance Comparison of Superintendents' and Principals' Mean Responses to Item 35a[a]

	Mean	Standard Deviation	Number
Superintendents	4.97 occasions	5.21 occasions	68
Principals	6.79 occasions	5.20 occasions	128

$F = 5.46$ (1 df Between, 194 df Within), $P < .02$; Multiple $R = .16$

[a]Item 35a read, "During the past year, on how many occasions were you able to pass along applied educational research articles to teachers?"

TABLE B49--Chi-Square Comparison to Superintendents' and Principals' Responses to Item 34b[a]

	Frequently	Occasionally	Seldom	Never	Total
Superintendents	57 (67%)	26 (31%)	1 (1%)	1 (1%)	85 (100%)
Principals	39 (25%)	81 (52%)	29 (19%)	6 (4%)	155 (100%)

$\chi^2 = 44.74$, $P < .001$; contingency coefficient = .40

[a]Item 34b read, "When you find applied educational research articles which you personally feel have relevance, do you pass these articles along to other administrators?"

TABLE B50--Analysis of Variance Comparison of Superintendents' and Principals' Mean Responses to Item 35b[a]

	Mean	Standard Deviation	Number
Superintendents	9.04 occasions	6.22 occasions	66
Principals	4.75 occasions	4.71 occasions	135

F = 29.54 (1 df Between, 199 df Within), P < .0005; Multiple R = .35

[a]Item 35b read, "During the past year, on how many occasions were you able to pass along applied educational research articles to other administrators?"

TABLE B51--Repeated Measure Design, Analysis of Variance Comparison of Principals' Mean Responses to Items 35a and 35b[a]

Passing Along AER Articles to	Mean	Standard Deviation	Number
Teachers (35a)	6.88 occasions	5.22 occasions	125
Other Administrators (35b)	4.62 occasions	4.34 occasions	125

F = 23.60 (1 df Measures, 124 df Error), P < .01

[a]Item 35 read, "During the past year, on how many occasions were you able to pass along applied educational research articles: (a) to teachers, (b) to other administrators?"

TABLE B52--Repeated Measure Design, Analysis of Variance Comparison of Superintendents' Mean Responses to Items 35a, 35b, and 35c[a]

Passing Along AER Articles to	Mean	Standard Deviation	Number
Teachers (35a)	4.03 occasions	3.79 occasions	61
Other Administrators (35b)	9.18 occasions	6.40 occasions	61
School Board Members (35c)	4.11 occasions	4.43 occasions	61

F = 38.06 (2 df Measures, 120 df Error), P < .01

[a]Item 35 read, "During the past year, on how many occasions were you able to pass along applied educational research articles: (a) to teachers, (b) to other administrators, (c) to school board members?"

TABLE B53--Analysis of Variance of the Overall Regression in Predicting Principals' Responses to Item 12 from Certain Correlate Variables[a]

Source of Variation	SS	df	MS	F
Linear regression	7.68	1	7.68	8.14*
Error	84.92	90	0.94	
Total	92.60	91		

*P < .005

[a]Item 12 read, "How frequently, on the average, do you discuss applied educational research studies with other administrators (administrators either within or outside your school district)?"

TABLE B54--Analysis of Variance of the Overall Regression in Predicting Principals' Responses to Item 14 from Certain Correlate Variables[a]

Source of Variation	SS	DF	MS	F
Linear regression	5.73	1	5.73	4.98*
Error	97.87	85	1.15	
Total	103.60	86		

*P < .03

[a]Item 14 read, "How frequently, on the average, do you discuss applied educational research studies with teachers in your particular school?"

TABLE B55--Analysis of Variance of the Overall Regression in Predicting Superintendents' Responses to Item 12 from Certain Correlate Variables[a]

Source of Variation	SS	df	MS	F
Linear regression	2.31	1	2.31	1.67*
Error	83.37	60	1.38	
Total	85.69	61		

*P > .05

[a]Item 12 read, "How frequently, on the average, do you discuss applied educational research studies with other administrators (administrators either within or outside of your school district)?"

TABLE B56--Analysis of Variance of the Overall Regression in Predicting Superintendents' Responses to Item 14 from Certain Correlate Variables[a]

Source of Variation	SS	df	MS	F
Linear regression	3.86	1	3.86	2.93*
Error	69.84	53	1.31	
Total	73.70	54		

*P > .05

[a]Item 14 read, "How frequently, on the average, do you discuss applied educational research studies with teachers in your school system?"

TABLE B57--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 47b[a]

	Yes	No	Total
Superintendents	79 (94%)	5 (6%)	84 (100%)
Principals	86 (61%)	55 (39%)	141 (100%)

χ^2 = 29.41, P < .001; contingency coefficient = .34

[a]Item 47b read, "Regarding the applied research available on class size and student achievement, have you ever had occasion to discuss, or pass along, such research to other administrators?"

TABLE B58--Chi-Square Comparison of Superintendents' and Principals' Responses to Item 47d[a]

	Yes	No	Total
Superintendents	43 (61%)	27 (39%)	78 (100%)
Principals	44 (33%)	90 (67%)	134 (100%)

$\chi^2 = 15.36$, $P < .001$; contingency coefficient = .26

[a]Item 47d read, "Regarding the applied research available on class size and student achievement, have you ever had occasion to discuss, or pass along, such research to the lay public (specifically, parents)?"

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