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TEACHERS' LACK OF FAMILIARITY WITH RESEARCH TECHNIQUES AS A PROBLEM FOR EFFECTIVE RESEARCH DISSEMINATION.

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A RESEARCH REPORT WITH GENERAL APPEAL TO CLASSROOM TEACHERS SERVED AS THE BASIS FOR AN ATTITUDE EVALUATION SURVEY COMPARING THE COMPREHENSION OF RESEARCH BY TEACHERS AND BY EDUCATIONAL RESEARCHERS. MAJOR GOALS OF THE STUDY WERE TO DETERMINE AREAS OF RESEARCH PROCEDURES AND TERMINOLOGY WHERE TEACHERS MOST NEED ASSISTANCE AND TO DEVELOP PROCEDURES FOR DISSEMINATING RESEARCH RESULTS TO TEACHERS IN A FORM UNDERSTANDABLE TO THEM. RESPONSES FROM 167 SMALL TOWN AND RURAL TEACHERS WERE COMPARED WITH RESPONSES FROM 151 MEMBERS OF THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (AERA). QUESTIONNAIRE ITEMS REFERRED TO METHODS OF SAMPLING AND DATA GATHERING, RELIABILITY, VALIDITY, AND DATA ANALYSIS. AERA MEMBERS WERE MORE INCLINED TO INDICATE THAT THERE WAS "INSUFFICIENT INFORMATION" UPON WHICH TO BASE A RESPONSE. TEACHERS WERE MORE INCLINED NOT TO RESPOND TO CERTAIN ITEMS. ON ALL QUESTIONS THERE WAS A HIGHER PERCENTAGE OF EDUCATORS RESPONDING "DO NOT UNDERSTAND." CHI SQUARE FINDINGS FOR THE 41 QUESTIONNAIRE ITEMS INDICATED THAT THERE WERE STATISTICALLY SIGNIFICANT DIFFERENCES BETWEEN EDUCATORS AND RESEARCHERS IN ATTITUDES TOWARD AND COMPREHENSION OF VARIOUS RESEARCH PROCEDURES AND TERMINOLOGY. DIFFERENCES WERE ALSO DETERMINED BETWEEN EDUCATORS WHEN GROUPED BY SEX, POSITION, EXPERIENCE, DEGREE, AND SIZE OF SCHOOL ENROLLMENT. THIS PAPER WAS PRESENTED AT THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION MEETING (NEW YORK, FEBRUARY 17, 1967). (JK)

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A Preliminary Report

NOT FOR PUBLICATION

TEACHERS' LACK OF FAMILIARITY WITH RESEARCH TECHNIQUES AS A PROBLEM FOR EFFECTIVE RESEARCH DISSEMINATION

by

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A paper presented at the American Educational Research Association Meeting, February 17, 1967, in New York City, N. Y.

INTRODUCTION

Educational research, historically the domain of the individual educator pursuing a problem with limited funds and reporting the results in an educational journal, has undergone a fantastic transition in the past ten years. Funds from the Federal Government, foundations, industry and agencies employing educators have made it possible to research a greatly increased volume of problems, including many which are too complex for the individual.

This increase in educational research has led directly to a related problem, dissemination of research results, conclusions and recommendations. Although existing educational journals have expanded in size and many new journals have recently appeared, this medium of dissemination has proved insufficient. Educational societies such as AERA have expanded their paper presentations; many research reports come out in bound volumes and many books are written about research but dissemination of research remains a major problem in implementing research findings.

Dissemination is a major concern of the foundations and the Federal Government, witness ERIC, but a question still exists: Are dissemination efforts pointed in the right direction? Another way of stating this question is: to whom should researchers disseminate research results? If research results are meant only for fellow researchers, the efforts mentioned above may be adequate. If the goal of applied or developmental research is its implementation in classrooms at all levels of education, there seems to be a question as to whether a good job is being done. In dissemination of research results to classroom teachers, there exist not only the common problem of wading through the sheer volume of research reports, much of it from little known sources, but also the lack of

research sophistication on the part of the potential recipients of these reports. In view of the increasingly complex research being undertaken and the increasingly complex methods of analyzation and reporting being used, it is doubtful whether classroom teachers, especially those in isolated rural areas, have the necessary knowledge to read and understand research reports.

PURPOSES

The immediate purpose of this study is to determine in what areas of research procedures and terminology teachers most need assistance. An outcome of this effort will be the development of an inservice education program to offer this assistance to teachers. The Educational Research Training Program at the University of North Dakota is supporting this effort by providing personnel to conduct the study and develop and pilot the in-service program.

A long-range purpose is the development of procedures to disseminate research results to teachers in a form which will be understandable to them. It is not practical to expect teachers to become familiarized with research procedures as well as the subject matter of their teaching areas.

PROCEDURE

This study was undertaken to ascertain the level of familiarity which classroom teachers in North Dakota, a very rural state, have with common statistical, measurement and reporting terms commonly found in educational research reports. A research report judged to have rather general appeal to classroom teachers and more everyday language and fewer technical terms than the average research report was selected from AERJ. An accompanying questionnaire was developed which included attitude questions about the

appropriateness of the research procedures used and questions requesting respondents to indicate the sentences in the report which were the best example of a number of technical terms. A pilot sampling of teachers received this questionnaire in May of 1966, and from the results the questionnaire was revised to its present form.

The design employed was to select a random sampling of 500 AERA Division D members to serve as a criterion group. The responses of this group were statistically compared to the responses of a random sample of North Dakota educators to determine teachers' level of understanding of educational research procedures.

A random sample of 794 North Dakota teachers and administrators representing ten percent of the state's teachers was selected to receive the revised questionnaire. This sample was stratified according to the following variables: sex, years of educational experience and highest college degree earned. These variables were selected because they were shown to have the most meaning in differentiating between groups of North Dakota teachers by a statewide study of North Dakota's elementary and secondary programs under the direction of Kent Alm, University of North Dakota.

The results reported in this paper are only preliminary because of the late date at which the questionnaires had to be mailed. The mailing delay was caused by a change in the teacher reporting procedures which made release of the list of 1966-67 North Dakota teachers over two months late. As it is, the lists for the two largest cities in North Dakota still were not completed and are not included in the population from which the random sampling of North Dakota educators was drawn. Because the only two universities which offer graduate programs are located in these towns, the population in this study represents teachers from small towns and rural areas

who do not have ready access to graduate programs.

As of the cutoff date for this paper, 167 (21%) completely useable questionnaires had been received from North Dakota educators and 151 (30%) from AERA Division D members. Approximately thirty partially completed questionnaires and fifty returned questionnaires indicating the individual was not at that address were also received for each group. The causes for this partial response are two-fold; lateness of mailing the questionnaire and the length of time required to complete the questionnaire.

FINDINGS

The questionnaire used in this study contained 41 attitude questions; choice of response from "strongly agree" to "strongly disagree" on a five point scale. Two additional choices were provided; one was "insufficient information" and the other was "do not understand the question".

Table I presents a statement of each of the 41 questions, and the percent of replies given by Division D members and North Dakota educators to the four categories: making an attitude choice, checking "insufficient information", checking "do not understand" and not responding. The chi square value with its associated degrees of freedom are also included. Questions 16 and 22 had chi square values significant beyond the .001 level, questions 18, 26 and 27 had values significant beyond the .01 level and question 24 was significant beyond the .05 level. These questions are concerned with the method of sampling, data-gathering methods, reliability of the data gathered and data-analyzation methods. In all cases a greater percentage of AERA members had indicated "insufficient information" given upon which to base a response.

Table II presents for each of the 41 attitude questions the percent of

AERA members and North Dakota educators responding to each of the five positions on the scale, total number of responses, degrees of freedom and the chi square value. Thirty-two of the forty-one chi square values were significant beyond the .05 level with 16 significant beyond the .001 level. For the majority of the questions having significant chi square values it appeared that North Dakota educators were somewhat hesitant in committing themselves, possibly from a lack of knowledge of research techniques. While the direction of responding (toward agree or disagree) was the same for both groups, North Dakota educators tended to respond more frequently "agree," "disagree" or neutral while AERA members responded more frequently "strongly agree" or "strongly disagree."

The nine questions which did not have significant chi square values were interesting. Five of them asked whether the respondent could understand what was written in the article about the problem (question 1), data gathering methods (18), results (30) and conclusions (33), as well as whether the article was biased (41). The other four questions, numbers 19, 22, 26 and 27, dealt with the appropriateness and utilization of the data gathering and analyzation methods.

For eight questions with significant chi square values there appeared to be substantial disagreement between AERA members and North Dakota educators. In all but question 10, relationship of the problem to previous research, the North Dakota educators more frequently responded "agree" than did the AERA members. These questions basically asked whether sufficient information was provided in the article about the hypotheses (6), method of sampling (17), validity (23), reliability (24), data analyzation methods (29), and generalizations (38). This result seems to indicate that while teachers think they understand what has been written about research, still

their attitudes differ significantly from those held by AERA members concerning certain technical methods and terms.

In summary of the attitude question results, it appears that two major conclusions can be reached. One is that North Dakota educators tend not to strongly agree or disagree with the various questions about research procedures as compared to AERA members. Whether this reflects lack of knowledge concerning research techniques or normal teacher conservatism in an educationally isolated state is hard to say; it probably is a combination of both factors. The other major conclusion is that for all questions but 1, 2, 5, 10, 11, 22, 23, 24, 26, 27, and 38, AERA members disagreed internally in their attitudes toward the question as indicated by the bi-modal response in the "agree" and "disagree" categories. Thus it is difficult to pin-point a clear cut attitude difference between North Dakota educators and AERA members.

The North Dakota educators were also compared on the variables used to stratify the sample; sex, educational position, years of experience and degree held, and an additional variable, size of school enrollment. The variables of position, enrollment and experience proved rather meaningless. This can be partially explained by the fact that more than three fourths of North Dakota school districts have less than 600 students in K-12. In these districts the administrator is just another teacher who has little if any free time for administration and leadership.

It appeared on the questions concerning relationship of problem to previous research (10), reliability (24), data analyzation methods (28), (29), results (32) and writing of the report (39) that male educators and AERA members, who were also males for the most part, responded similarly. On questions 10, 28, and 39 and in addition, on definition of terms (9),

meaning of data analyzation methods (25) and unbiased attitude (41) the non-degree educators tended to report extensively more agreement with the questions than did the degree educators, and the B.A. degree educator more agreement than the master's degree educator. There was no apparent relationship between the responses of any one of the three groups and the AERA members.

It was felt that the responses to a series of attitude questions, while interesting, do not present very conclusive evidence as to educators' understanding of education research procedures. Therefore 13 open-ended questions were included to which respondents indicated numbers of sentences in the article which best described various research procedures or terminology. Table III gives the percent of AERA members and North Dakota educators who responded by indicating sentence numbers, circled "insufficient information," "do not understand," and did not respond to each question. The chi square values for all 13 questions were significant beyond .05 level.

It must be noted that a much higher percentage of North Dakota educators returned the questionnaire without completing this section or leaving portions of it blank. This could indicate inability to cope with these questions. In the case of sentences 2, 6, 12, and 13, this seems to be the explanation for the significant chi square values.

For all questions there was a higher percentage of North Dakota educators responding, "Do not understand." The difference in percentage ranged from 1.2% to 11.7%. It would appear that these educators especially "do not understand" limitations of the study (question 4), research design (5), data gathering methods (8), validity (9), reliability (10) and analyzation methods (11). For seven of the same 13 questions not a single AERA member responded "do not understand the question."

Another interesting feature was the percentage of responses to the category "insufficient information." AERA members more frequently circled this response than did North Dakota educators to questions about the problem (1), assumptions (3), limitations (4), method of sampling (7), validity (9), and reliability (10). At the same time, AERA members less often wrote in sentence numbers to these questions even though they also less often left the questions unanswered or circled "do not understand." From this evidence it appears that either the AERA members wish additional information included in the article about the research procedures; information which is unnecessary for a response to the questions; or that North Dakota educators lack familiarity with research procedures and are attempting responses on the basis of insufficient information.

The North Dakota educators were also compared on the same stratification variables shown in Table II. Except on the variable of experience the results were not significant. It was found that a much higher percentage of teachers with more than twenty years of experience did not respond to this section of the questionnaire. This, in turn, resulted in a lower percentage of responses indicating sentence numbers and/or a lower percentage of responses indicating "insufficient information."

Table IV indicates the chi square values for the sentence responses of AERA members compared to North Dakota educators and for North Dakota educators on the five stratification variables given in Table II. The procedure used to determine frequencies for the cells of the chi square tables involved first preparing a frequency table showing the number of AERA members marking each of the eighty-four sentences in the article in response to each question. The sentence numbers most frequently used in response to each question were given separate cells in the chi square table. All

frequencies for sentences below, above, or between sentence numbers given separate cells were summed up and placed in additional cells. Twelve of the thirteen chi square values for comparison between AERA members and North Dakota educators were found to be significant. A comparison of the frequency table for both groups indicated that for ten of the thirteen questions, the difference between responses of the two groups was rather small, usually a matter of selecting sentences differing at most by three or four numbers. Only for questions concerning limitations (4), analyzation methods (11), and conclusions (12) did there seem to be major disagreement between the two groups as to the most appropriate sentences. Table IV also presents the chi square values for the comparison of North Dakota educators on the variables shown in Table II.

As of the writing of this preliminary report, no attempt had been made to consider all the implications posed by the significant chi square values for these 13 questions. A number of items need consideration. For instance, respondents could list from one to five sentence numbers in response to each question. It will be necessary to consider whether any significant difference exists in the number of sentences written in by the two groups, and to determine, where small differences exist in the sentence numbers most frequently selected by the two groups, whether the sentences are found in the same paragraph. This then is the major task remaining before preparing the final report.

CONCLUSION

The major finding of this study is that there are statistically significant differences between North Dakota educators and AERA Division D members in attitudes toward and in choice of sentences which best illustrate various research procedures and terminology. The basic difference between the two groups seemed to be the hesitance on the part of educators to respond as evidenced by the higher percentage of neutral responses on the attitude questions, the unanswered questions on the open ended section and the greater tendency to check "do not understand the question" for both sections of the questionnaire. AERA members, on the other hand, rarely checked "do not understand" and were more definite in their responses, checking more frequently "strongly agree," "strongly disagree," and "insufficient information."

A second finding is that there are differences between North Dakota educators when grouped by the variables of sex, position, experience, degree, and size of school enrollment. These differences were somewhat scattered but it appeared that whenever a significant difference did occur, rarely did any group of N.D. educators have responses similar to AERA members.

It should be pointed out again that this is a preliminary report. While the writer feels that the evidence supports his belief that teachers and administrators are unprepared to read with understanding educational research reports, the data presented could support different conclusions. In particular the writer is aware of the problem of generalizing from too small a percentage of returns.

If any fact does seem clear it is that teachers and administrators do not seem to be applying research recommendations at the pace recommended

by researchers and knowledgeable educators. This is a problem of major concern if we want to develop the strongest educational system possible. Whether the conclusions reached in this article are agreed with or not, the data does provide interesting findings which indicate the need for additional study.

TABLE 1

	QUESTIONS		PERCENT OF RESPONSES R#	I#	?#	NA#	DF	CHI SQUARE
1.	The meaning of the problem studied for this research report can be understood.	AERA	93.4	2.0	4.7	0.0		
		N.D.	96.0	3.0	0.6	0.6	2	5.63
2.	The problem is significant for classroom teachers.	AERA	96.1	2.0	2.0	0.0		
		N.D.	98.9	0.6	0.0	0.0	2	2.60
3.	The problem is clearly written.	AERA	100.00	0.0.	0.0.	0.0		
		N.D.	94.8	2.4	1.2	1.8		
4.	The problem is described in sufficient detail.	AERA	98.7	0.0	0.0	1.4		
		N.D.	94.2	1.2	1.2	3.6	1	1.66
5.	The meaning of the hypotheses studied for this research report can be understood.	AERA	96.7	0.7	2.0	0.7		
		N.D.	94.2	3.6	2.4	0.0	2	3.09
6.	According to present research procedures the hypotheses are correctly stated.	AERA	92.8	0.0	5.3	2.0		
		N.D.	86.0	5.9	8.2	0.0	1	1.26
7.	The meaning of the limitations to this research report can be understood.	AERA	85.5	8.0	5.3	1.4		
		N.D.	91.9	5.3	3.0	0.0	2	2.36
8.	The limitations are described in sufficient detail.	AERA	98.1	1.4	0.7	0.0		
		N.D.	95.4	3.0	1.8	0.0	2	1.77
9.	Important terms are clearly defined.	AERA	99.4	0.0	0.7	0.0		
		N.D.	95.4	2.4	1.2	1.2	1	0.25
10.	Relationship of problem to previous research is clear.	AERA	96.1	2.7	0.0	1.4		
		N.D.	97.1	1.2	0.6	1.2	2	0.96
11.	The meaning of previous research in this research report can be understood.	AERA	94.8	0.7	4.0	0.7		
		N.D.	93.6	3.6	3.0	0.0	2	3.26
12.	Previous research is described in detail.	AERA	97.4	1.4	0.7	0.7		
		N.D.	94.2	4.7	1.2	0.0	2	3.21
13.	The meaning of the research design used in this research report can be understood.	AERA	90.1	0.0	8.0	2.0		
		N.D.	87.2	4.1	4.7	4.1	2	2.46
14.	The research design is described in sufficient detail.	AERA	99.4	0.0	0.0	0.7		
		N.D.	91.9	4.1	3.6	0.6	1	0.00
15.	The research design is appropriate to solution of the problem.	AERA	86.1	12.0	0.0	2.0		
		N.D.	84.8	5.3	7.7	2.4	2	3.80
16.	The method of sampling is appropriate.	AERA	77.5	21.9	0.0	0.7		
		N.D.	94.8	4.1	0.6	0.6	2	23.11
17.	The method of sampling is described in sufficient detail.	AERA	96.7	2.7	0.0	0.7		
		N.D.	95.4	2.4	1.2	1.2	2	0.26

TABLE 1 CON'T

QUESTIONS		PERCENT OF RESPONSES R#	I#	?#	NA#	DF	CHI SQUARE
18. The meaning of the data-gathering methods used in this research report can be understood.	AERA	87.5	3.4	8.7	0.7		
	N.D.	94.8	4.1	0.6	0.6	3	12.49*
19. According to present research procedures the data-gathering methods are appropriate to solution of the problem.	AERA	84.2	12.6	2.0	1.4		
	N.D.	91.3	5.3	2.4	1.2	3	5.46
20. The data-gathering methods are clearly written.	AERA	97.4	2.0	0.0	0.7		
	N.D.	94.2	4.1	1.2	0.6	2	1.23
21. The data-gathering methods are described in sufficient detail.	AERA	97.4	0.0	0.7	2.0		
	N.D.	95.4	3.0	1.8	0.0	1	0.80
22. The data-gathering methods are utilized correctly.	AERA	67.6	25.2	4.7	2.7		
	N.D.	93.0	3.6	3.0	0.6	3	36.75
23. The validity of the evidence gathered is established.	AERA	80.2	14.0	4.7	1.4		
	N.D.	88.4	5.9	3.0	3.0	3	7.62
24. The reliability of the evidence gathered is established.	AERA	79.5	14.6	4.0	2.0		
	N.D.	89.5	5.3	4.1	1.2	3	8.51*
25. The meaning of the data-analyzation methods used in this research report can be understood.	AERA	84.8	4.0	10.0	1.4		
	N.D.	85.4	6.5	7.1	1.2	3	1.75
26. Appropriate methods are selected to analyze the data.	AERA	79.5	18.6	1.4	0.7		
	N.D.	90.1	5.9	3.6	0.6	3	13.56
27. According to present research procedures the data analyzation methods are utilized correctly in analyzing the data.	AERA	73.6	21.2	4.0	1.4		
	N.D.	84.3	8.8	7.1	0.0	2	10.96
28. The data analyzation methods are clearly written.	AERA	94.1	3.4	2.0	0.7		
	N.D.	89.5	5.3	4.1	1.2	3	2.25
29. The data analyzation methods are described in sufficient detail.	AERA	97.4	0.7	1.4	0.7		
	N.D.	90.1	4.1	4.1	1.8	3	7.23
30. The meaning of the results given in this research report can be understood.	AERA	92.8	2.0	4.0	1.4		
	N.D.	96.0	1.8	1.8	0.6	3	1.99
31. The results are clearly written.	AERA	98.1	0.0	0.0	2.0		
	N.D.	98.3	0.6	0.6	0.6	1	1.26
32. The results are described in sufficient detail.	AERA	95.4	0.7	1.4	2.7		
	N.D.	94.2	2.4	1.2	2.4	3	1.51
33. The meaning of the conclusions given in this research report can be understood.	AERA	90.1	4.0	4.0	2.0		
	N.D.	96.0	1.8	1.2	1.2	3	4.59

TABLE 1 CON'T

QUESTIONS		PERCENT OF RESPONSES R#	I#	?#	NA#	DF	CHI SQUARE
34. The conclusions are substantiated by the evidence.	AERA	91.4	6.7	0.0	2.0		
	N.D.	94.2	4.1	1.2	0.6	2	2.29
35. The conclusions are clearly written.	AERA	97.4	0.7	0.7	1.4		
	N.D.	94.2	2.4	0.6	3.0	3	2.49
36. The conclusions are described in sufficient detail.	AERA	94.8	0.0	1.4	4.0		
	N.D.	93.6	2.4	1.8	2.4	2	0.75
37. The meaning of the generalizations given in this research report can be understood.	AERA	89.5	4.0	4.0	2.7		
	N.D.	92.4	2.4	3.0	2.4	3	1.06
38. Generalizations are confined to the population from which the sample was drawn.	AERA	94.8	4.0	0.0	1.4		
	N.D.	93.0	1.2	4.1	1.8	2	2.52
39. The report is clearly written.	AERA	97.4	0.7	0.0	2.0		
	N.D.	95.4	1.2	1.2	2.4	2	0.29
40. The report is logically organized.	AERA	96.1	0.7	0.7	2.7		
	N.D.	94.8	1.8	1.2	2.4	3	1.04
41. The tone of the article displays an unbiased attitude.	AERA	94.8	2.0	1.4	2.0		
	N.D.	96.5	0.6	1.2	1.8	3	1.33

* Significant beyond .05 level
** Significant beyond .01 level
*** Significant beyond .001 level
# R Responded to the question
I Insufficient information
Q Do not understand the question
NA No response

TABLE 2

QUESTION		PERCENT OF RESPONSES SA#	A#	N#	D#	SD#	TOTAL N	DF	CHI SQUARE	SEX1	POSITION2	ENROLLMENT 3	EXPERIENCE 4	DEGREE 5
1	AERA	27.7	61.0	2.1	7.8	1.4								
	N.D.	22.6	72.0	1.8	3.7	0.0	305	3	4.49				*	
2	AERA	46.2	46.2	2.8	1.4	3.5								
	N.D.	33.7	52.7	6.4	7.1	0.0	314	3	11.57**				**	
3	AERA	10.6	37.8	7.3	31.8	12.6								
	N.D.	10.5	53.1	6.8	28.4	1.2	313	4	19.35***					
4	AERA	11.4	45.6	4.0	28.9	10.1								
	N.D.	12.4	47.8	10.6	28.0	1.2	310	4	15.61**					*
5	AERA	16.4	62.3	4.1	14.4	2.7								
	N.D.	9.9	63.4	13.0	13.0	0.6	307	4	11.66**					
6	AERA	1.4	22.1	12.9	42.9	20.7								
	N.D.	4.8	40.8	46.3	7.5	.7	287	4	100.93***					
7	AERA	0.8	43.4	9.3	36.4	10.1								
	N.D.	2.6	57.3	15.3	23.6	1.3	286	4	20.43***					
8	AERA	1.4	21.0	6.1	47.3	24.3								
	N.D.	1.2	30.7	23.3	40.5	4.3	311	4	41.40***					
9	AERA	2.7	36.7	9.3	33.3	18.0								
	N.D.	3.1	36.8	7.4	46.0	6.8	313	4	11.70*				*	*
10	AERA	18.6	60.0	7.6	11.7	2.1								
	N.D.	3.0	56.6	13.3	25.3	1.8	311	4	28.37***	*				*
11	AERA	11.9	62.9	10.5	14.0	0.7								
	N.D.	3.1	58.1	9.4	26.9	2.5	303	4	15.89**					
12	AERA	8.2	44.9	8.2	34.0	4.8								
	N.D.	1.9	37.9	11.2	45.3	3.7	308	4	10.56*					
13	AERA	16.6	61.0	5.9	18.4	8.1								
	N.D.	3.4	55.0	15.4	23.5	2.7	285	4	12.77*					
14	AERA	6.7	38.7	6.0	38.0	10.7								
	N.D.	2.6	44.0	14.0	37.6	1.9	307	4	17.75**					
15	AERA	5.4	56.2	13.9	16.2	8.5								
	N.D.	2.8	42.1	27.6	26.2	1.4	275	4	20.61***					
16	AERA	3.4	35.0	13.7	29.1	18.8								
	N.D.	3.1	54.9	18.5	17.9	5.6	297	4	21.24***					

TABLE 2 Con't

QUESTION		PERCENT OF RESPONSES SA#	A#	N#	D#	SD#	TOTAL N	DF	CHI SQUARE	SEX[1]	POSITION[2]	ENROLLMENT[3]	EXPERIENCE[4]	DEGREE[5]	
17	AERA	4.8	35.6	3.4	35.6	20.6									
	N.D.	3.1	60.7	11.0	23.3	1.8	309	4	45.78***						
18	AERA	6.8	64.4	5.3	17.4	6.1									
	N.D.	3.7	63.6	9.3	21.0	2.5	294	4	5.96						
19.	AERA	3.2	52.8	19.7	23.6	0.8									
	N.D.	1.3	46.8	28.9	21.8	1.3	283	4	4.29						
20	AERA	4.8	46.9	7.5	31.3	9.5									
	N.D.	1.9	53.4	16.2	26.1	2.5	308	4	14.68**						
21	AERA	4.1	40.1	6.8	40.8	8.2									
	N.D.	1.8	49.7	16.6	31.3	0.6	310	4	21.54***						
22	AERA	3.9	46.1	34.3	12.8	2.9									
	N.D.	0.0	42.8	47.8	8.2	1.3	261	3	5.16						
23	AERA	0.0	12.4	14.1	50.4	23.1									
	N.D.	1.3	43.1	24.5	25.8	5.3	272	3	51.88***						
24	AERA	0.8	5.8	6.7	55.8	30.8									
	N.D.	1.3	30.7	28.1	32.0	7.8	273	4	66.51***	*					
25	AERA	2.3	53.1	8.6	28.1	7.8									
	N.D.	1.4	49.3	19.9	26.7	2.7	274	4	9.97*						**
26	AERA	3.3	54.2	26.7	12.5	3.3									
	N.D.	2.6	48.7	31.8	16.9	0.0	274	3	2.27						
27	AERA	1.8	46.0	34.2	14.4	3.6									
	N.D.	1.4	39.6	46.5	12.5	0.0	255	3	3.54						
28	AERA	1.4	31.0	9.2	49.3	9.2									
	N.D.	0.7	50.3	14.4	32.7	2.0	295	4	20.85***	***					**
29	AERA	0.7	25.9	6.8	50.3	16.3									
	N.D.	0.7	46.1	20.8	30.5	2.0	301	4	43.73***	**	**				
30	AERA	6.4	69.3	1.4	16.4	6.4									
	N.D.	4.9	73.2	5.5	16.5	0.0	304	3	5.30						
31	AERA	5.4	54.1	6.1	25.7	8.8									
	N.D.	4.2	61.9	10.7	22.0	1.2	316	4	13.06*						
32	AERA	2.8	47.2	6.9	33.3	9.7									
	N.D.	3.7	52.2	16.2	28.0	0.0	305	3	8.50*	*	*				

TABLE 2 Con't

	QUESTION	PERCENT OF RESPONSES SA#	A#	N#	D#	SD#	TOTAL N	DF	CHI SQUARE	SEX[1]	POSITION[2]	ENROLLMENT[3]	EXPERIENCE[4]	DEGREE[5]
33	AERA	5.9	67.7	4.4	17.7	4.4								
	N.D.	3.1	68.3	6.1	22.0	0.6	300	4	7.07					
34	AERA	0.7	53.6	13.0	23.2	9.4								
	N.D.	1.9	53.4	23.0	20.5	1.2	299	4	14.86**					
35	AERA	2.0	58.5	5.4	27.9	6.1								
	N.D.	0.6	52.8	15.5	28.0	3.1	308	4	10.48*					
36	AERA	2.8	44.8	4.2	40.6	7.7								
	N.D.	1.3	41.9	20.6	34.4	1.9	303	4	23.20***					
37	AERA	3.7	60.7	7.4	26.7	1.5								
	N.D.	4.4	59.5	20.3	13.9	1.9	293	4	14.54**					
38	AERA	2.1	15.4	7.0	49.7	25.9								
	N.D.	6.3	50.3	21.4	21.4	0.6	302	4	96.41***					
39	AERA	3.4	45.6	8.8	30.6	11.6								
	N.D.	2.5	39.9	16.0	37.4	4.3	310	4	10.26*	**		*		*
40	AERA	7.6	61.4	6.2	15.2	9.7								
	N.D.	3.7	60.5	19.1	15.4	1.2	307	4	22.32***				*	
41	AERA	4.2	55.9	13.3	18.9	7.7								
	N.D.	5.5	53.9	21.2	17.0	2.4	308	4	7.57					

* Significant beyond .05 level
** Significant beyond .01 level
*** Significant beyond .001 level
\# SA Strongly agree
A Agree
N Neutral
D Disagree
SD Strongly disagree

1	Sex	Male-Female
2	Position	Teacher-Administrator
3	Enrollment	Less than 100, 100-199, or 200+ Secondary students in the district
4	Experience	Less than 6, 6-19, or 20 or more years of Teaching Experience
5	Degree	Non degree, Bachelor degree, or masters degree holder

TABLE III

Which sentence(s) best describe the....		PERCENT OF RESPONSES R#	I#	?#	NA#	TOTAL N	DF	CHI SQUARE	EXP.[1]
1. Problem	AERA	70.9	19.3	0.0	10.0				
	N.D.	79.5	4.8	1.2	14.8	312	2	16.59***	
2. Hypotheses	AERA	92.8	2.7	0.7	4.0				
	N.D.	75.3	4.8	5.3	14.8	321	3	18.86***	*
3. Assumptions made in this study	AERA	34.5	50.4	2.7	12.6				
	N.D.	54.2	18.3	7.1	20.6	321	3	37.78***	*
4. Limitations of this study	AERA	47.7	39.1	1.4	12.0				
	N.D.	46.2	22.3	8.8	22.9	322	3	21.39	*
5. Research design	AERA	78.2	10.0	0.0	12.0				
	N.D.	50.0	11.2	11.2	27.7	312	2	19.72***	**
6. Population and sample	AERA	88.8	2.7	0.0	8.7				
	N.D.	70.2	5.3	5.9	18.8	312	2	10.44**	*
7. Method of sampling	AERA	59.0	30.5	0.0	10.6				
	N.D.	64.2	9.5	4.2	22.4	312	2	24.93***	*
8. Data-gathering methods	AERA	74.2	14.0	0.0	12.0				
	N.D.	57.2	11.4	7.8	23.9	310	2	9.80**	**
9. Validity of the evidence	AERA	17.9	61.0	4.7	16.6				
	N.D.	39.8	22.3	13.5	24.6	322	3	51.93***	**
10. Reliability of the evidence	AERA	11.3	65.0	4.0	19.9				
	N.D.	39.2	23.4	14.1	23.4	322	3	65.38	
11. Analyzation methods	AERA	82.8	8.7	0.7	8.0				
	N.D.	52.4	7.1	12.4	28.3	321	3	44.91***	*
12. Conclusions	AERA	86.8	4.0	0.0	9.3				
	N.D.	71.1	4.8	3.0	21.4	311	2	9.85**	
13. Generalizations made in this study	AERA	82.8	7.3	0.0	10.0				
	N.D.	73.1	4.1	3.6	19.3	313	2	8.99*	

Significant beyond .05 level
* Significant beyond .01 level
** Significant beyond .001 level
R Responded to the question
I Insufficient information
Q Do not understand the question
NA No response

Experience

TABLE IV

	AERA		SEX		POSITION		ENROLLMENT		EXPERIENCE		DEGREE	
	DF	CHI SQUARE	DF	CHI SQUARE	DF	CHI SQUARE	DF	CHI SQUARE	DF	CHI SQUARE	DF	CHI SQUARE
1	7	179.62***	8	10.32	6	29.86***	12	24.66**	12	33.92***	10	44.61***
2	4	79.92***	5	5.72	5	0.23	10	21.30*	10	5.77	10	7.67
3	7	47.52***	4	10.94*	2	1.48	6	2.06	6	6.82	18	24.64
4	5	61.30***	2	1.79	3	1.80	4	2.49	16	46.30***	6	6.78
5	5	127.46***	7	2.89	5	12.38*	8	6.04	10	13.73	8	23.97**
6	3	16.10**	3	1.09	3	3.10	6	15.69*	6	8.60	6	9.30
7	3	87.22***	9	28.48***	10	12.86	12	14.76	10	20.34	18	34.02*
8	11	89.76***	9	42.93***	7	9.03	14	24.02*	12	47.50***	18	77.42***
9	4	12.90*	2	2.13	5	7.16	8	19.70*	4	5.45	8	11.37
10	2	1.97	3	18.05***	6	11.90	6	4.86	8	10.49	8	34.14
11	3	181.43***	7	13.83	5	2.23	8	30.11***	14	20.93	6	3.42
12	12	209.21***	9	4.13	14	16.92	14	10.42	12	21.02	16	7.48
13	10	30.78***	7	7.95	7	3.30	14	15.68	10	13.03	14	13.00

* Significant beyond .05 level
** Significant beyond .01 level
*** Significant beyond .001 level