A STUDY OF THE IMPORTANCE AND CREDIBILITY OF SOME SOURCES OF INFORMATION IN EVALUATING INNOVATIONS IN EDUCATION

by

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ABSTRACT

The purpose of this study was to determine the importance and credibility of some sources of information in evaluating innovations. Randomly selected educational researchers, administrators and teachers in British Columbia were asked to rank nine sources of information for importance and select six standard sources of information for credibility in evaluating educational innovations in order to determine whether or not these groups use the same or different criteria in their evaluations.

Analysis was performed using the Spearman rank order correlation coefficient. The correlation between ranking of information for importance by educational researchers and principals, and between educational researchers and teachers was judged significant indicating that these groups use the same criteria when ranking sources of information for importance in evaluating innovations. The correlation between the credibility evaluation of educational researchers and principals, between researchers and teachers, and between researchers and District Superintendents was judged insignificant

indicating that researchers, administrators and teachers use different criteria when selecting sources of information for credibility in evaluating educational innovations.

District Superintendents were the only group who consistently disagreed with researchers on the importance and credibility of information. Major areas of disagreement between these two groups were the importance of the administrator questionnaire and the standardized test, and the credibility of the B.C. Department of Education and the university professor as sources of information. Superintendents ranked the administrator questionnaire higher in importance, and the B.C. Department of Education higher in credibility, than did the educational researcher.

The results of this present study do not support the findings of previous research, which has indicated that the apparent lag between educational research and its implementation as educational innovation may be the result of educational researchers and teachers using different criteria in evaluating innovations in education.

Examiners: [redacted]

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

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CHAPTER I

INTRODUCTION

The adoption of innovations in education has been at a pace slower than many would like to see. Mort (1964, p.325) states that, "The spread of an innovation through the American school system proceeds at a slow pace...measured in terms of decades." With obvious impatience Downing (1971) suggests, with reference to the initial teaching alphabet, that "If educational practice were based on educational research, traditional orthography should have been abolished by now." In 1957 the use of teacher aides was first introduced in the state of Michigan (Miles, 1964, p.6). In 1972, some 15 years later, teacher aides were introduced in a number of schools in Greater Victoria. A more dramatic illustration of the slow spread of innovations would be that of the official adoption of kindergartens in the British Columbia public school system. Kindergartens will become part of this province's school system in September, 1973, some 130 years after Froebel introduced the concept in Germany!

Why does it take so long for an innovation to diffuse through the educational system? What are the barriers that operate at the interface between theory and action? Van Wyck (1969) states that a major barrier is the innate resistance and hostility of teachers who reject

any sudden or substantial change in their accustomed role. Kohl (1969) refers to the lack of a change agent and an insufficient knowledge base about new educational practices. Gershnowitz (1972) chastizes the academics for their failure to establish a close and continued interaction between those who do the research and those who are faced with the problems in need of solution.

A quantitative study of factors that impede the innovative process has been made by Murray (1970). Murray asked educational psychologists and junior high school teachers to rank the importance and credibility of some standard sources of information useful in evaluating educational innovations. Murray concludes that researchers and teachers are sensitive to different kinds of information; what one group thinks is critical, the other thinks is irrelevant or unreliable.

Murray's findings raise a number of interesting questions, the resolution of which is the purpose of this study.

In his conclusions Murray asserts that "the criteria that persuade the educational researcher are not the criteria that persuade those who govern the school." Presumably "those who govern the school" were the junior high school teachers, the practitioners in his sample. However, he excluded school administrators, who generally

control educational policies. According to Rogers (1962, p.254) the school administrator is, or should be, a "change agent" who attempts to influence the adoption of decisions that he feels important. Gershnowitz (1972) states that it is administration, with viewpoints, temperaments and responsibilities very different from those of the researcher, who must make the decisions and policies that result in the application of research. This study will include senior and junior administrators, specifically District Superintendents and principals in the Province of British Columbia.

Perkes (1968) has found that, as a group, junior high school teachers are dissatisfied with their role, compared with their colleagues in senior high schools. It would appear that Murray has based his conclusions, in part, on what may not be a typical group. This study will include teachers from all levels of the British Columbia public school system - elementary, junior secondary and senior secondary schools.

The purpose of this study is to examine the relative importance and credibility of standard sources of information used by educational researchers, superintendents, principals and teachers of elementary, junior and senior secondary schools in evaluating educational innovations.

SIGNIFICANCE OF THE STUDY

This study will be considered significant if it shows that educational researchers, school administrators and classroom teachers are differentially sensitive to different kinds of information when evaluating innovations. If this is the case, then we must find a method to improve the mobility of ideas flowing from researcher to practitioner, so that the management of educational innovations can be made in a more coherent, sophisticated way.

DEFINITION OF TERMS

1. Teacher. A teacher in this study refers to those who are practising teachers in the public school system of British Columbia.

2. District Superintendent. A District Superintendent is the District Superintendent of Schools appointed by the B.C. Department of Education to carry out the rules and orders as laid down by the Public Schools Act and assist and advise the Board of School Trustees having jurisdiction in his superintendency (Public Schools Act, 1958, c.319, s.9 (1) (a) (c)).

3. Principal. A principal is defined as one who has charge of the organization, administration, and supervision of the public school of which he is appointed (Public Schools Act, 1958, c.319, s.129 (a)).

4. Elementary School. An elementary school is a public school in the Province of British Columbia offering instruction in grades I to VII inclusive.

5. Junior Secondary School. A junior secondary school is a public school in the Province of British Columbia offering instruction in grades VIII to X inclusive.

6. Senior Secondary School. For the purpose of this study a senior secondary school is a public school in the Province of British Columbia offering instruction in grades X, XI, XII and XIII or in any combination thereof which includes grades XI and XII.

7. Educational Researcher. An educational researcher is one who is actively engaged in educational research and/or supervising graduate students in the Faculty of Education at the University of British Columbia, University of Victoria, or Simon Fraser University.

8. Innovation. An innovation is a deliberate, novel or specific change which is thought to be effective in accomplishing the goals of a system (Voegel, 1971).

9. Diffusion. Diffusion is the process by which an innovation spreads from its source of invention or creation to its ultimate users (Rogers, 1962, p.12).

10. Change Agent. A change agent is one who attempts to influence adoption decisions in a direction he thinks is desirable (Voegel, 1971).

LIMITATIONS OF THE STUDY

1. The study is restricted to educational researchers of Simon Fraser University, the University of British Columbia, and the University of Victoria.

2. The study is restricted to District Superintendents of British Columbia.

3. The study is restricted to principals and teachers of British Columbia.

4. The study is concerned only with ranking of information for importance and credibility in the evaluation of educational innovations. It is not directly concerned with any of the causal factors that underline these rankings.

ASSUMPTIONS

1. It is assumed that respondents to the test instrument cooperated as individuals and not in concert with colleagues, or other interested individuals or groups.

2. It is assumed that the qualitative rankings can be treated quantitatively.

3. It is assumed that respondents were able to perceive themselves in a decision-making role as requested in the test instrument.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

The body of quantitative research on the diffusion process - the flow of new ideas or practices from inventor to user - reaches back several decades. It has encompassed several research traditions[1], including rural sociology, anthropology, economics, medicine and education. This review of the related literature has two objectives. The first is a review of the general theory of diffusion necessary to establish both a factual and theoretical basis for this thesis. The review will draw heavily from those research traditions which have made the major contributions to diffusion theory - namely the fields of rural sociology, medicine and education. The second objective is the review of the literature related to resistance to the diffusion of educational innovations.

THE DIFFUSION PROCESS IN RURAL SOCIOLOGY

Foremost of the research traditions has been rural sociology, which has produced the greatest number of studies directed towards the study of diffusion and adoption of innovations. Perhaps the most important

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[1] A research tradition is defined by Rogers (1962, p.55) as a "series of research studies in a similar topic in which successive studies are influenced by preceding investigations."

contribution to the understanding of the dynamics of the diffusion process is that of Ryan and Gross (1943) who studied the diffusion of the use of hybrid seed corn among Iowan farmers. Their study isolated several variables which were important for subsequent investigations, not only by rural sociologists but also by other research traditions. Their major findings were that the first use of hybrid seed corn followed a near-normal distribution curve when plotted against time; that agricultural salesmen were most important as original sources of knowledge, while peers (friends, neighbours, and relatives) were most influential in the actual decision to use the new seed corn. A third, and very significant finding was that a farmer apparently passes through a number of mental stages in his decision to use an innovation. This particular type of decision-making has been called the adoption process, which is defined by Rogers (1962, p.76) as "the mental process through which an individual passes from first hearing about a new idea or practice to final adoption."

The adoption process is typically divided into five stages which serve as a conceptual framework for organizing and analyzing information related to an individual's adoption or rejection of an innovation. According to Rogers and Beal (1958) these stages are:

1. <u>The Awareness Stage</u>. The individual learns of

the idea or practice, but has little knowledge about it.

2. The Interest Stage. The individual develops an interest in the idea, seeks more information about it, and considers its general merits.

3. The Evaluation Stage. The individual makes mental application of the idea, and weighs its merits for his own situation.

4. The Trial Stage. The individual actually applies the idea or practice, usually on a small scale.

5. The Adoption Stage. The individual is totally committed and continues to use the idea or practice.

In a later study, Ryan (1948) suggested that the uncharacteristically rapid diffusion of the use of hybrid seed corn (less than ten years from introduction to nearly one hundred percent adoption) was possible because there was a low element of risk. The farmer could, if he wished, adopt the innovation on a small scale, thus minimizing economic loss if the innovation failed to produce as promised.

A number of rural sociologists have explored the problem of use of informational sources in the adoption of new practices. Wilkening (1950) studied eight improved farm practices in North Carolina and found important differences in the sources of information reported by

farmers. Farmers in the lower socio-economic level favoured other farmers and agricultural dealers as their main source of information in adoption decisions, whereas the mass media and agricultural agencies were cited as important sources of information by those farmers in the upper socio-economic levels.

Pioneering studies by Coleman (1951) and Coleman and Marsh (1955) helped to define the role of communication channels in the diffusion process. They found that different communication channels perform different functions in the transmission of information about innovative farm practices. Farmers may hear about a new idea through one communication channel, learn more about it through another, be influenced to adopt or reject it through another, and learn the specific information needed to make the new practice work through still another communication channel.

Basing their methods upon the general model developed by Wilkening and Coleman, Copp and his associates (1958) found that formal, institutionalized information sources tend to perform a function separate from informal, non-institutionalized information sources. Specifically, they found that farmers relied on the mass media and salesmen during the awareness stage in the adoption process; peer influence was important during the interest

and acceptance stage. Printed and oral extension was important during the trial stage, when questions of when and how to apply the practice become critical.

THE DIFFUSION PROCESS IN MEDICINE

Although the study of the diffusion process in the medical sciences began at a later date than the other major research traditions, its impact on the general theory has been no less important.

The classical study in the medical tradition has been on the diffusion of the use of a new antibiotic "gammanyn", among physicians in selected, small communities in the U.S.A. Coleman, Katz and Menzel (1957) in the first full-scale report found that physicians who formed close associations with colleagues tended to adopt the new antibiotic earlier than those physicians who were less closely integrated with local associates. Winnick (1961) in a study paralleling that of Coleman et al. found that physicians ranked medical journals, drug house salesmen, and drug house circulars higher as reliable sources of information than they ranked research centres, hospitals, colleagues, and druggists.

A comparison of the diffusion of hybrid seed corn in agriculture with the diffusion of gammanyn in medicine has been made by Katz (1961). A common thread runs through the two studies; both innovations came highly

recommended by scientific authority; both were of central importance to those groups for whom they were intended; both enabled the users to see the results of the innovation for themselves; both were modifications of technologies with which the users had previous experience. The adoption of the innovation required only relatively minor changes in thought patterns.

THE DIFFUSION PROCESS IN EDUCATION

The diffusion process in education has not been as amenable to study as have other research traditions because of the special characteristics of educational systems. The very nature of the educational system as a human social organization, burdened with a highly structured, cumbersome and congested hierarchy, acts to confound the application of the scientific method to solving problems central to the system (Barton and Wilder, 1968, p.362; Nussel and Johnson, 1969). According to Miles (1964, p.40) the farmer and physician are able to assess, within a short span of time, the results of adopting an innovation. The teacher, on the other hand, finds the assessment of a new innovation far more difficult, since the products of education are supposedly assessed over a very long period of time, if they can be assessed at all.

Early diffusion studies in education have flowed

from the work of Paul Mort, the acknowledged chief strategist, tactician, and theorist at Columbia University. In excess of 150 studies have been made by Mort and his school, most of which have been compiled and summarized in a source book on educational innovations by Ross (1968). Although the main thrust of the Mort school has been directed towards school finance and local control as factors affecting the adaptability[2] of school systems, these early studies also indicated that change occurs very slowly in the American school system, and that these changes follow a predictable pattern with a time factor of change in the order of 50 to 100 years (Mort, 1964, p.317).

Although the early studies in educational innovations were many, no single work has emerged which can compare in importance to the pioneering studies of either hybrid seed corn in agriculture or the antibiotic gammanyn in medicine.

After the education tradition joined the mainstream of other diffusion studies in the 1950s, the emphasis shifted from the school system, as a unit of study, to the individual and his role in the adoption

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[2] Adaptability is defined by Mort (1964, p.317) as "the capacity of a school to take on new practices and discard outmoded ones." Rogers (1962, p.63) considers adaptability as synonymous with innovativeness.

process. Of particular significance to this thesis are those investigations related to factors which operate to resist, impede or reject the adoption of new educational practices and ideas.

RESISTANCE TO INNOVATIONS IN EDUCATION

Resistance to or rejection of an innovation is considered to be part of the adoption process and may occur at any stage in this process. Eichholz and Rogers (1964, p.303) consider the problem of "lag" in the acceptance of educational innovations as "not only one of overcoming barriers, but also that of decreasing time required in the five-stage process leading to actual acceptance."

An early work by Lewin (1951) emphasizes the importance of reducing resistance if change is to be accompanied by minimal stress. He considers a social system as being in a state of dynamic equilibrium, sensitive to the usual strategies of the adoption process - those of persuasion - which increases tension and raises pressure. If these institutional pressures and tensions can be neutralized or transformed, then forces already within the system can be activated and change facilitated.

Watson (1971) suggests that resistance to innovations within the educational system may be reduced if teachers, board members and community leaders feel that

the introduction of the innovation is their own; if teachers see the change as reducing rather than increasing their teaching load; if top administrators of the system wholeheartedly support the innovation; if teachers feel that their autonomy and security are not threatened; and if provision is made to insure proper feedback.

In the hierarchy of the educational system, the superintendent is seen as the most important link in the innovative process (Ross, 1958, p.407); however, the nature of this link is somewhat obscure. To the teaching staff the superintendent is a leader, to the school board he is their chief executive officer and advisor, to the community he is seen as an encyclopaedia of educational lore (Ross, p.407). Mort and Cornell (1941, p.220), in a study to assess the role of superintendents in the diffusion and adoption of a number of innovations in Pennsylvania, state that in nearly 90 percent of the cases studied, the superintendent has taken an active part in the adoption process. Rogers (1964, p.67) considers the administrator as the change agent in the school system, intervening directly in the change process. Mackenzie (1964, p.412) cites several examples of this direct intervention, underlining the superintendent's role as the most powerful single participant in the change process.

Crozier (1964) and Feinstein and Feinstein (1972) believe that administrators are powerless subordinates in

a public institution. Crozier (p.81) states that although the power of a director of public institutions may be considered absolute, in most cases he is helpless and the amount of actual control he yields is extremely small. Feinstein and Feinstein (1972) state that the administrator is virtually impotent when endeavouring to implement change in the school system since almost all subordinate personnel have tenure and seniority, and certification controlled by the state. In addition, subordinates are in central, crucial positions that permit them to control the flow of information concerning innovations.

Innovators are characterized as being restless, venturesome individuals, willing to take risks (Rogers, 1962, p.169). The common view of the public school administrator is one characterized as a cautious individual taking few risks in his decision-making. Brown (1970) has compared the risk propensity in decision-making of business and school administrators. He found that public school administrators tend to take fewer risks in their decision-making than did business administrators - a finding that supports the general characterization of school administrators. Innovations are necessarily risky ventures and, if the above characterization is correct, school administrators must be seen as possible barriers to the diffusion of new ideas and practices requiring some measure of risk.

The role of the teacher as potential adopter or rejecter in the diffusion process is paramount, for, without their endorsement or cooperation, any educational innovation is fated to wither away. In the final analysis, it is the teachers who decide what part they and their pupils will play in any innovative situation (Nussel and Johnson, 1969).

Van Wyck (1969) states that a major barrier to the implementation of new teaching techniques in the public schools is the innate resistance and hostility of teachers who fear and reject any sudden or substantial change in accustomed teacher-student relationship.

Eichholz and Rogers (1964) have examined at length teacher opinion about the failure of innovations, and have formulated a list of rejection responses, the top four categories being: (1) rejection through ignorance - the innovation was unknown; (2) rejection through default - admitting a knowledge of the innovation without any interest in its use; (3) rejection through interpersonal relationships - colleagues do not use it, therefore neither will I; and (4) rejection by maintaining the status quo - the innovation is not accepted because it had not been used in the past.

A number of variables related to the resistance of teachers to the flow of innovations have been examined by

Gulesian (1970). When examining the factors of age and sources of information used in evaluating educational innovations, he found that innovators were younger than those teachers who were late adopters or laggards. He also found that innovative teachers used more impersonal and cosmopolite sources of information than later adopters who used personal and localite sources. These characteristics are in accord with findings in rural sociology (Rogers, 1962, p.172). However, an earlier report by Mort and another by Buley (cited in Ross, 1958, p.466) suggests that age is not a barrier to innovativeness. Both Mort and Buley comment that there is a false impression that older teachers are out-of-date and unprogressive in their ideas, whereas the younger teacher, with more recent professional training, is believed to be well-informed to recent trends in education and more receptive to educational change.

In a study designed to determine the relationship between decision-making and innovative activity, Minniberg (1970) found that the closer to himself in the administrative hierarchy that a teacher perceives the locus of responsibility for decision-making, the more likely he will be to perceive himself as participating in decision-making and in innovative activity. A converse situation would possibly generate resistance to innovations.

Role conflict may act as a barrier to the diffusion of innovations. Miles (1964, p.634) observes that the role of the teacher as a professional stresses the idea of autonomy and individuality, a concept in direct conflict with the role of the teacher as an employee, who is powerless to initiate system wide changes.

The above citations reveal that a number of factors may be operating as barriers to the easy flow of new ideas and practices in the educational system. The factors of age, cosmopoliteness, perceived role and position in the school system by both administrator and practitioner may be impediments to easy diffusion. Empirical data are often in conflict; generalizations and discussion frequently are contradictory. One other, somewhat novel, approach to the problem of reducing resistance and rejection of educational innovations needs to be examined - the importance of information sources and the credibility of these sources in evaluating educational innovations. Murray (1970) has postulated that there is a possible independence between research, and its application in education. He suggests that this independence may be caused by the educational researcher and educational practitioner using different criteria when seeking information in the evaluation of an innovation. Murray asked 34 educational psychologists and 50 junior high school teachers to rank in importance eight sources of information

one would use in evaluating an innovation. He also asked the psychologists and teachers to evaluate the credibility of eight standard sources of educational information. Murray found that the correlation between the rankings by each faculty was insignificant, but the correlation between the credibility evaluation by each faculty was judged significant. Each faculty generally found its own colleagues and their activities more important and credible. Murray believes that his findings support his contention that the criteria that persuade the educational researcher with respect to innovations are not the criteria that persuade those "who govern the schools."

Although Murray's study has a number of interesting aspects, the omissions within it raise doubts as to the validity of his conclusions. He infers that junior secondary school teachers are "those who govern the schools." This statement is not supported in Murray's work, in other literature, or in general practice in the school system. Since "those who govern the schools" are, in practice, the principals and superintendents, surely they should be included in any study of this nature. In addition, Murray's conclusions are based on a small, restricted sample of junior high school teachers from a single suburban high school, and on educational psychologists from a single, mid-western university in the U.S.A. As stated previously, research indicates that junior high

school teachers, as a group, are dissatisfied with their role when compared to senior high school teachers (Perkes, 1968). It is possible that Murray's sample of teachers have responded to his questionnaire in a manner not typical of teachers as a whole. Referring to the other group in his sample, there is no evidence to suggest that the behaviour of his educational psychologists is typical of educational researchers in general.

In addition, Murray's analysis of his data raises further doubts. His conclusions appear to be based, in part, on a subjective and somewhat inconclusive interpretation of his chi square analysis (Murray, 1970, p.19).

A new study is indicated. In an attempt to resolve some of these inconsistencies, this study will include teachers from elementary, junior secondary, and senior secondary schools, principals, District Superintendents and educational researchers from urban, suburban, and rural British Columbia. This study will attempt to determine if there is any difference between educational researchers and the other groups in ranking sources of information for importance, and rating standard sources of information for credibility in evaluating educational innovations.

CHAPTER III

DESIGN OF STUDY

According to Murray (1970), there is a significant difference between educational researchers and junior high school teachers in their ranking of sources of information for importance in evaluating educational innovations. From this particular finding Murray assumes that "researchers and educators use different criteria in evaluating a course of action" with respect to the adoption of educational innovations. Since junior high school teachers are not necessarily representative of the genus educator, a new study should include educators from the ranks of the elementary and senior secondary schools, as well as junior secondary teachers. It is, therefore, hypothesized that:

Hypothesis 1 There is no significant rank order correlation between educational researchers and teachers, as a group, in ranking sources of information for importance in evaluating educational innovations.

Hypothesis 2 There is no significant rank order correlation between educational researchers and elementary school teachers in ranking sources of information for importance in evaluating educational innovations.

Hypothesis 3 There is no significant rank order correlation between educational researchers and junior secondary teachers in ranking sources of information for importance in evaluating educational innovations.

Hypothesis 4 There is no significant rank order correlation between educational researchers and senior secondary teachers in ranking sources of information for importance in evaluating educational innovations.

Murray states that "the criteria that persuade the educational researcher are not the criteria that persuade those who govern the schools", yet his study has not included those who are usually considered to be the governors in the school system - superintendents and school principals. Therefore, it is hypothesized that:

Hypothesis 5 There is no significant rank order correlation between educational researchers and District Superintendents in ranking sources of information for importance in evaluating educational innovations.

Hypothesis 6 There is no significant rank order correlation between educational researchers and principals in ranking sources of information for importance in evaluating educational innovations.

For the reasons previously stated, it is hypothesized that:

Hypothesis 7 There is no significant rank order correlation between educational researchers and teachers, as a group, in the selection of sources of information for credibility in evaluating educational innovations.

Hypothesis 8 There is no significant rank order correlation between educational researchers and elementary teachers in the selection of sources of information for credibility in evaluating educational innovations.

Hypothesis 9 There is no significant rank order correlation between educational researchers and junior secondary teachers in the selection of sources of information for credibility in evaluating educational innovations.

Hypothesis 10 There is no significant rank order correlation between educational researchers and senior secondary teachers in the selection of sources of information for credibility in evaluating educational innovations.

Hypothesis 11 There is no significant rank order correlation between educational researchers and District Superintendents in the selection of

sources of information for credibility in evaluating educational innovations.

Hypothesis 12 There is no significant rank order correlation between educational researchers and principals in the selection of sources of information for credibility in evaluating educational innovations.

THE INSTRUMENT

The instrument used in this study is a modified version of Murray's (1970) original survey questionnaire (Appendix A). Murray's questionnaire was divided into two parts. The first part asked respondents to rank in importance eight sources of information one might use in evaluating educational innovations. These sources of information have been expanded in the present questionnaire to include the category of administrator as an important source of information. The second part of the original questionnaire, which tested credibility, asked respondents to choose between eight standard sources of information matched in pairs. The present modified questionnaire has six standard sources of information. Murray's categories of "TV special", "newsmagazine", and "newspaper" have been condensed into the single category of "news media".

A personal data questionnaire prefaces the present

survey instrument to include age, sex, years of teaching experience, years in present position, teaching certificates held, degrees, and years of administrative experience where applicable.

VALIDITY

According to Murray (1971) no validity or reliability measurements were carried out on his original survey questionnaire. The modified Murray questionnaire appears to have face validity (Muir, 1972); however, since face validity is the lowest order of validity measurement, further measurements were necessary.

According to Goode and Hatt (1952, p.163) and Helmstadter (1964, p.139), evidence to construct validity may be obtained by measuring group differences in responses to a test instrument. By comparing the rankings and choices of experienced respondents with those of less or little experience as educational practitioners, it is possible to arrive at some degree of validity with Murray's modified questionnaire where none has existed previously. Accordingly, a pilot study was carried out during the summer and early autumn of 1972. Ten teachers with 5 or more years experience, 10 teachers with 1 year of experience, 10 student teachers, and 10 laymen with high school education were asked to respond to the modified questionnaire. Teachers and student teachers answered

the questionnaire independently without assistance. The laymen answered their questionnaires in the presence of an interviewer, after it was determined that assistance was necessary for completion of the questionnaire. The completed questionnaires were analyzed using Spearman's rank order correlation, comparing the other groups tested with the experienced teacher. The results are shown in Table I and Table II for Parts A and B of the questionnaire.

TABLE I

SPEARMAN'S RHO VALIDITY DETERMINATION ON PART A OF MURRAY'S MODIFIED QUESTIONNAIRE

Group	1st yr. Teacher	Student Teacher	Layman
Experienced Teacher	+0.95	+0.37	-0.30

Table I shows a clear cut separation between groups having varying experience in the educational field. The interpretation offered is that Part A of the questionnaire has little validity for the general public, and increased validity for the student teacher. It is most valid for the teacher who has been exposed to the educational scene, and who has already formulated some beliefs and attitudes to a number of factors operating in the public school system.

TABLE II

SPEARMAN'S RHO VALIDITY DETERMINATION ON PART B OF MURRAY'S MODIFIED QUESTIONNAIRE

Group	1st yr. Teacher	Student Teacher	Layman
Experienced Teacher	+1.00	0.00	-0.04

The interpretation of the correlation coefficient differences between the groups in Table II is the same as for Part A; the differences are a measure of the validity of the questionnaire.

RELIABILITY

Questionnaire reliability was established by a test-retest method with seven days between tests. The test-retest sample of 20 teachers was made up in part from teacher volunteers from a large high school in the Greater Victoria School District, and in part from a summer school statistics class at the University of Victoria. A Spearman rank order correlation coefficient of +0.91 was obtained for Part A of the questionnaire and +0.89 for Part B.

POPULATION

The population for this study consisted of educational researchers, District Superintendents, public

school principals and teachers in the Province of British Columbia.

SAMPLE

As no master list of teachers is generally available, a random sample of elementary school teachers, junior secondary teachers and senior secondary teachers was obtained in the following manner. From Statistical Table 1.10 of the B.C. Public School Report for 1970/71, 125 elementary schools, 35 junior and 47 senior secondary schools were randomly selected. A letter (Appendix B) was sent to the staff representative of each school outlining the research problem and requesting a staff list. Using the staff lists of those schools that responded, one master list was compiled for each school level of elementary, junior secondary, and senior secondary, as previously defined. From these separate master lists, 130 elementary, 70 junior secondary, and 75 senior secondary teachers were randomly selected for the study. These numbers represent approximately 1 per cent of the total elementary teachers in the province, and 1½ per cent of the junior and senior secondary teachers in the province.

Using Statistical Table 2.10 (B.C. Public School Report, 1970/71), a random sample of 75 school principals was selected. This represents approximately 10 per cent of the supervising principals in the province. School

principals were identified by school, not by name.

The names of 47 District Superintendents were taken from the B.C. Public School Report, 1970/71. This total represents the number of superintendents who could be clearly associated with a school district.

Faculty lists obtained from the university calendars were sent to the graduate advisor in the Faculty of Education in each of the three major B.C. universities - University of British Columbia, Simon Fraser University, and the University of Victoria. The graduate advisor was asked to identify those faculty members who were supervising graduate students in education, or who were actively engaged in educational research. From the identified faculties, 60 educational researchers were randomly selected.

DATA COLLECTION

Each person selected for this study was mailed an envelope containing the survey questionnaire (Appendix A), a letter of explanation outlining the nature of the study and soliciting their cooperation (Appendix C), and a stamped, return-addressed envelope. Two weeks after the questionnaire was mailed a general follow-up letter (Appendix D) was also sent to each person.

STATISTICAL TESTS

Hypotheses 1 to 12 were tested by comparing the Spearman rank order correlation coefficient with the value required for statistical significance at the 5 per cent level.

CHAPTER IV

RESULTS

By January 11, 1973, 457 questionnaires had been mailed. By January 26th, 245 completed questionnaires had been returned. A follow-up letter (Appendix D) produced approximately another 100 questionnaires within the next several weeks. The remainder were received between this time and the cut-off date of April 30, 1973, after which time no further returns were considered. Table III shows the percentage returns of the survey questionnaire.

TABLE III

SUMMARY OF QUESTIONNAIRE RETURNS

Group	Number Sent	Number Returned	Per Cent Returned
Educational Researchers	60	47	78
All Teachers	275	184	67
Elementary Teachers	130	91	70
Junior Sec. Teachers	70	45	64
Senior Sec. Teachers	75	48	64
District Superintendents	47	34	72
Principals	75	59	79
Total Sent		457	
Total Returned		324	
Per Cent Returned		71	

As stated previously on page 25, the survey questionnaire was divided into two parts. Part A of the questionnaire asked respondents to rank nine sources of information for importance in evaluating educational innovations. Part B consisted of six standard sources of information arranged in fifteen conflicting pairs. Respondents were asked to indicate which member of a pair they choose to believe when evaluating educational innovations.

Table IV shows the percentage of Part A useable questionnaires based on the total number sent in each group.

TABLE IV

SUMMARY OF USEABLE QUESTIONNAIRE RETURNS

PART A

Group	Number Sent	Number Useable	Per Cent Useable
Educational Researchers	60	45	75
All Teachers	275	177	64
Elementary Teachers	130	88	68
Junior Sec. Teachers	70	42	60
Senior Sec. Teachers	75	47	63
District Superintendents	47	33	70
Principals	75	50	67

Table V shows the percentage of Part B useable questionnaires based on the number distributed in each group.

TABLE V

SUMMARY OF USEABLE QUESTIONNAIRE RETURNS

PART B

Group	Number Sent	Number Useable	Per Cent Useable
Educational Researchers	60	46	77
All Teachers	275	178	65
Elementary Teachers	130	86	66
Junior Sec. Teachers	70	45	64
Senior Sec. Teachers	75	47	63
District Superintendents	47	33	70
Principals	75	53	77

Table VI shows the results of responses to Part A of the questionnaire which asked respondents to rank nine sources of information for importance in evaluating educational innovations. Sources of information were ranked from '1' (most important) through to '9' (least important). To facilitate table construction the following abbreviations have been used: (i) Admin. Quest. - the results of a questionnaire given to school administrators, e.g. District Superintendents; (ii) Pers. Obs. - ones own observation of the innovation in the classroom; (iii) Grades - a comparison of student grades before and after an innovation; (iv) Educ. Endorse. - the endorsement by a highly respected educator; (v) Test - a comparison of standardized test results; (vi) Principal Quest. - the results of a questionnaire given to principals; (vii) Logic - logical considerations about an innovation; (viii) Teacher Quest. - the results of a questionnaire given to teachers; (ix) Good Friend - the personal endorsement of the innovation by a good friend and colleague.

In Part B of the questionnaire, the respondents were not asked to rank the credibility of six standard sources of information. They were asked to choose between six standard sources of information arranged in pairs. Table VII shows the results of analysis of the fifteen comparisons of the standard sources of information in

rank order of credibility. Spearman rho values are based on compared analysis between educational researchers and the other groups. To facilitate table construction, the following abbreviations have been used; (i) Res. Jour. - educational research journal; (ii) Teach. Jour. - professional teachers' journal; (iii) B.C. Dept. - B.C. Department of Education; (iv) Univ. Prof. - university professor; (v) Text - college textbook; (vi) Media - news media.

TESTS OF HYPOTHESES

A high positive Spearman correlation coefficient between educational researchers, and other groups indicates association in ranking sources of information for importance and for credibility.

> Hypothesis 1 There is no significant rank order correlation between educational researchers and teachers in ranking sources of information for importance in evaluating educational innovations. REJECTED

A rho value of 0.83 obtained from the Spearman rank order test between educational researchers and all teachers is significant at the 0.01 probability level, and indicates a high degree of association.

> Hypothesis 2 There is no significant rank order correlation between educational researchers and

TABLE VI

RANK ORDERING OF MEANS AND SPEARMAN'S CORRELATION COEFFICIENT ON IMPORTANCE OF INFORMATION BY RESPONDENTS

Group	(N)	Admin. Quest.	Pers.Obs.	Grades	Educ. Endorse.	Test	Principal Quest.	Logic	Teacher Quest.	Good Friend	Spearman's rho*
Educ. Researcher	(45)	9	3	6	5	2	7	1	4	8	----
All Teachers	(177)	9	1	5	6	4	8	3	2	7	0.83^{1}
Elem. Teachers	(88)	9	1	4	6	5	8	3	2	7	0.77^{2}
Jr.Sec.Teachers	(42)	9	2	5	6	4	7	3	1	8	0.83^{1}
Sr.Sec.Teachers	(47)	9	1	5	8	4	6	3	2	7	0.77^{2}
District Super.	(33)	4	1	8	6	7	5	2	3	9	0.45^{3}
Principals	(50)	8	3	6	7	5	4	2	1	9	0.72^{2}

* Spearman correlation coefficients are based on compared analysis between educational researchers and the other groups.

(1) significant correlation, $p < 0.01$ (2) significant correlation, $p < 0.05$

(3) no significant correlation, $p > 0.05$

Details of the abbreviations of sources of information are given on page 35 and Appendix A.

TABLE VII

SPEARMAN'S CORRELATION COEFFICIENT AND RANK ORDERING OF MEANS ON CREDIBILITY OF INFORMATION BY RESPONDENTS

Group	(N)	Res. Jour.	Teach. Jour.	B.C. Dept.	Univ. Prof.	Text	Media	Spearman's rho *
Educ. Researcher	(46)	1	3	5	2	4	6	
All Teachers	(178)	1	2	3	4	5	6	0.71[1]
Elem. Teachers	(86)	1	2	3	4	5	6	0.71
Jr. Sec. Teachers	(45)	1	2	3	4	5	6	0.71
Sr. Sec. Teachers	(47)	1	2	3	4	5	6	0.71
District Super.	(33)	2	3	1	4	5	6	0.37
Principals	(53)	1	2	3	4	5	6	0.71

* Spearman's correlation coefficients are based on compared analysis between educational researchers and the other groups.

(1) no significant correlation, $p > 0.05$

elementary teachers in ranking sources of information for importance in evaluating educational innovations.

REJECTED

A rho value of 0.77 obtained from the Spearman rank order test between educational researchers and elementary teachers is significant at the 0.05 probability level, indicating a significant degree of association between rankings.

Hypothesis 3 There is no significant rank order correlation between educational researchers and junior secondary teachers in ranking sources of information for importance in evaluating educational innovations.

REJECTED

A rho value of 0.83 obtained from the Spearman rank order test between educational researchers and junior secondary teachers is significant at the 0.01 probability level, indicating a high degree of association between rankings.

Hypothesis 4 There is no significant rank order correlation between educational researchers and senior secondary teachers in ranking sources of information for importance in evaluating educa-

tional innovations.

REJECTED

A rho value of 0.77 obtained from the Spearman rank order test between educational researchers and senior secondary teachers is significant at the 0.05 probability level, indicating a significant degree of association between rankings.

Hypothesis 5 There is no significant rank order correlation between educational researchers and District Superintendents in ranking sources of information for importance in evaluating educational innovations.

ACCEPTED

A rho value of 0.45 obtained from the Spearman rank order test between educational researchers and District Superintendents is not significant at the 0.05 probability level, indicating a low degree of association between rankings.

Hypothesis 6 There is no significant rank order correlation between educational researchers and principals in ranking sources of information for importance in evaluating educational innovations.

REJECTED

A rho value of 0.72 obtained from the Spearman rank order test between educational researchers and

principals is significant at the 0.05 probability level, indicating a significant degree of association between rankings.

Hypothesis 7 There is no significant rank order correlation between educational researchers and teachers in the selection of sources of information for credibility in evaluating educational innovations.

ACCEPTED

A rho value of 0.71 obtained from the Spearman rank order test between educational researchers and teachers is not significant at the 0.05 probability level, indicating a low degree of association in selecting sources of information for credibility.

Hypothesis 8 There is no significant rank order correlation between educational researchers and elementary teachers in the selection of sources of information for credibility in evaluating educational innovations.

ACCEPTED

A rho value of 0.71 obtained from the Spearman rank order test between educational researchers and elementary teachers is not significant at the 0.05 probability level, indicating a low degree of association in selecting sources of information for credibility.

Hypothesis 9 There is no significant rank order correlation between educational researchers and junior secondary teachers in the selection of sources of information for credibility in evaluating educational innovations.

ACCEPTED

A rho value of 0.71 obtained from the Spearman rank order test between educational researchers and junior secondary teachers is not significant at the 0.05 probability level, indicating a low degree of association in selecting sources of information for credibility.

Hypothesis 10 There is no significant rank order correlation between educational researchers and senior secondary teachers in the selection of sources of information for credibility in evaluating educational innovations.

ACCEPTED

A rho value of 0.71 obtained from the Spearman rank order test between educational researchers and junior secondary teachers is not significant at the 0.05 probability level, indicating a low degree of association in selecting sources of information for credibility.

Hypothesis 11 There is no significant rank order correlation between educational researchers and District Superintendents in the selection of sources of information for credibility in evaluating educational innovations.

ACCEPTED

A rho value of 0.37 obtained from the Spearman rank order test between educational researchers and District Superintendents is not significant at the 0.05 probability level, indicating a low degree of association in selecting sources of information for credibility.

Hypothesis 12 There is no significant rank order correlation between educational researchers and principals in the selection of sources of information for credibility in evaluating educational innovations.

ACCEPTED

A rho value of 0.71 obtained from the Spearman rank order test between educational researchers and principals is not significant at the 0.05 probability level, indicating a low degree of association in selecting sources of information for credibility.

SUMMARY OF RESULTS

The results indicate that there is significant rank order correlation between educational researchers, principals and teachers in ranking sources of information for importance in evaluating educational innovations. The only discovered difference in ranking sources of information for importance was between educational researchers and District Superintendents. The results also indicate that there is no significant rank order correlation between educational researchers, principals, teachers, and District Superintendents in selecting sources of information for credibility in evaluating educational innovations.

In ranking sources of information for importance, the major areas of disagreement between educational researchers and District Superintendents are (i) the administrator questionnaire, ranked 9th (last) by educational researchers and 4th by District Superintendents; and (ii) the standardized test which is held in high esteem by educational researchers, who rank this source of information 2nd, while District Superintendents rank it 7th.

The major areas of disagreement between researchers and superintendents over the credibility of sources of

information were the B.C. Department of Education and the university professor. Educational researchers find the university professor more credible than the B.C. Department of Education, while the superintendent believes the B.C. Department of Education to be a more reliable source of information than the university professor.

ADDITIONAL FINDINGS

Both this and Murray's study indicated that the university professor has low order of credibility as a source of information for evaluating an educational innovation. A chi square analysis was done on the differences in the proportions of B.C. educational researchers and B.C. administrators and teachers that chose to believe the university professor, with respect to the other five standard sources of information in Part B of the questionnaire. The analysis indicated that there is significant disagreement between researchers and the other groups when the university professor is compared to the professional teachers' journal, and the B.C. Department of Education. In each case, the educational researcher, more than teachers and administrators, tended to believe the university professor. All chi square values were greater than 3.84 which is significant at the 0.05 level with one degree of freedom (Senter, 1969,

p.501). (See Appendices N to S for complete chi square analyses of these and other comparisons of standard sources of information.) The chi square analyses of B.C. researchers and educators parallels Murray's findings (Murray, 1970).

CHAPTER V

DISCUSSION AND CONCLUSIONS

The results of Part A of the questionnaire show that all groups, with the exception of the District Superintendent, agree with educational researchers when ranking nine sources of information for importance in evaluating educational innovations (see Table VI, page 36.).

It is interesting to note that researchers and teachers ranked information emanating from District Superintendents, Directors and Supervisors of Education (administrator questionnaire) as the least important source of information. Principals ranked this category next to last in importance, while District Superintendents, as a group, ranked the administrator questionnaire fourth behind personal observations, logical reasons and teacher questionnaire.

Principals ranked the teacher questionnaire as the most important source of information, while teachers, as a group, placed the principal questionnaire in eighth position. Teachers indicated that personal observations, the teacher questionnaire, and logical reasons are the three most important sources of information. Junior secondary teachers showed the only deviation within the

teaching group by selecting the teacher questionnaire as first in importance, followed by personal observations and logical reasons. As stated previously, teachers ranked the principal questionnaire and administrator questionnaire eighth and ninth respectively.

It was surprising to find that all groups indicated that the personal opinion of a good friend and colleague is of no particular importance as a source of information. District Superintendents and principals believe it to be the least important source of information, while the other groups ranked this category no higher than seventh. This finding is of interest, since the research traditions of rural and medical sociology have firmly established the importance of friends and peers in the adoption process (see pages 8 and 11).

In Part B of the questionnaire (Table VII, p.38), analysis of the 15 comparisons of six standard sources of information indicated that there was no significant agreement between educational researchers and the other groups in ranking standard sources of information for credibility.

Of the six standard sources of information, the educational research journal is considered to be the most credible source of information by researchers, principals and teachers. District Superintendents believe the B.C.

Department of Education to be the most credible source of information, followed by the educational research journal. Educational researchers, principals and teachers rank the B.C. Department of Education no higher than third as a credible source of information. Educational researchers believe the B.C. Department of Education to be one of the least credible sources of information, ranking this item next to last in order of credibility. All groups, without exception, rank the news media as the least credible source of information.

In British Columbia, administrators and teachers do not value the university professor as a credible source of information, compared to the educational research journal, professional teachers' journal, and the B.C. Department of Education. Teachers and administrators rank the university professor fourth in order of credibility; researchers rank him second.

The results reported by Murray (1970) conflict with the results of this study. To avoid confusion, the two groups studied by Murray will be identified as Murray's educational researchers and Murray's junior high school teachers. Groups in this present study will be identified by using B.C., for British Columbia, before the appropriate group, e.g., B.C. educational researchers.

Murray found that junior high school teachers and

educational researchers disagree significantly in ranking the importance of eight items of information when evaluating educational innovations. He found that the Spearman correlation coefficient was 0.45 which he states is not significantly different from a zero correlation between rankings. Murray's interpretation is that those sources of information that educational researchers find important are not necessarily the same for junior high school teachers, when they seek information in evaluating an innovation. He then states, - "That the rankings of both groups of faculty fail to correlate significantly indicates the degree to which researchers and educators use different criteria in evaluating a course of action", (Murray, 1970, p.20). From a study involving a small group of junior high school teachers, Murray suggests that his results, as he interprets them, are applicable to educators in general.

The results of this present study do not support Murray's conclusions. In British Columbia, educational researchers and junior secondary teachers show a significant degree of association (rho = 0.83) in their ranking of nine sources of information for importance. Results of this present study also show that elementary and senior secondary teachers, in addition to junior secondary teachers, do not differ significantly from B.C.

educational researchers in their ranking of information for importance. The interpretation is that B.C. educational researchers and B.C. educators use the same criteria in ranking sources of information for importance in evaluating educational innovations.

Murray found that researchers and junior high school teachers agree on the ranking of standard sources of information for credibility (rho = 0.84, $p<0.01$). His finding conflicts with the results of this present study where junior secondary teachers, as well as elementary and senior secondary teachers, principals, and District Superintendents, differ significantly from educational researchers in the selection of sources of information for credibility in evaluating educational innovations.

It is difficult to say which study is the more accurate. Since the school districts involved, groups approached, and questionnaire used in this study were much expanded from those in Murray's study, any comparison between the two reports should probably be tempered with caution. Murray's sample of educational researchers was very selective, consisting of educational psychologists from a single American university. His sample of 'educators' was drawn from one junior high school in Minnesota. This present study has sampled educational researchers in several disciplines from the three major

universities in British Columbia. The 'educators' were selected from a much wider basis than Murray's group, being drawn from a population of teachers throughout British Columbia and encompassing all levels - elementary, junior and senior secondary schools. Therefore, it can be argued that the results reported in this study are more representative of educational researchers and teachers than those reported by Murray.

In addition, this present study has included two important groups omitted in Murray's work - superintendents and principals. Murray concludes his report by asserting that "...the criteria that persuade the educational researchers are not the criteria that persuade those who govern the schools," (Murray, 1970, p.20). Murray apparently assumes that the junior high school teachers in his sample are "those who govern the schools." In British Columbia, school principals and District Superintendents normally fill this role, with the superintendents being paramount as the chief administrators and educators over all schools in their districts. In ranking sources of information for importance and for credibility, the District Superintendents were the only group to consistently differ significantly from educational researchers. Thus it may be stated that the criteria that persuade B.C. educational researchers are

not necessarily the criteria that persuade District Superintendents. It is apparent that it is the District Superintendent who must be convinced before an innovation may be introduced into his school district. The researcher may convince the teacher in his classroom or a principal in his school, but until experimental data is presented in terms that convince the District Superintendent, the innovation may be slow in diffusing into a school district.

To summarize, the results of this study show that:

(1) Although Murray finds that educational researchers and educators (junior high school teachers) show no significant correlation in ranking sources of information for importance, this present study finds that educational researchers show significant correlation with teachers and principals in ranking sources of information for importance in evaluating educational innovations.

(2) Although Murray finds that educational researchers and educators (junior high school teachers) show significant correlation in ranking sources of imformation for credibility this present study finds that educational researchers show no significant correlation with teachers, principals and superintendents in ranking sources of information for credibility in evaluating educational

innovations.

(3) The District Superintendent consistently disagrees with educational researchers over the importance and credibility of information useful in evaluating an educational innovation.

CONCLUSIONS

The following conclusions are based on the results and interpretations of this study. The results reported are not consistent with those reported by Murray (1970). Where Murray finds disagreement between his researchers and educators on the <u>importance</u> of sources of information, this study finds agreement; and where he finds agreement between researchers and educators on the <u>credibility</u> of information, this study finds disagreement. The results of this present study, with respect to researcher and teachers are inconclusive. Researchers and teachers agree on the importance of some sources of information, but disagree on the credibility of other sources of information useful in evaluating educational innovations. This fact in itself may be a factor that impedes the flow of innovations from theory to practice.

If the flow of innovations from theory into practice is proceeding at a pace slower than many in the field of education would like to see, then this delay may not be the result of educational researchers and teachers using different criteria in evaluating educational

innovations. Evidence offered in this study suggests the presence of a communication chasm between educational researchers and District Superintendents. A means must be found for bridging this gap, so that experimental data will be presented in a form convincing to the District Superintendents, who must ultimately answer to the public for the quality of education within their districts.

IMPLICATIONS FOR FURTHER RESEARCH

As stated previously, there was disagreement between educational researchers and educators on the credibility of the "university professor" as a source of information. The reason for this disagreement may be that teachers, principals and superintendents do not place much credence in the activities of the university professor, who supposedly represents the source of the majority of innovations in education. Further study in this direction is indicated to determine more precisely the role of the university professor as researcher in the diffusion of educational innovations.

While sampling elementary, junior and senior secondary teachers from the various districts for this study, it became evident that there may be still another position, that of District Research Officer, playing an important role in the diffusion of educational innovations.

The District Research Officer appears to have considerable influence as to whether or not a research project is introduced into his school district. A few questions for further research are suggested. What are the qualifications for a research officer? What criteria is used in assessing the suitability of proposed research within a school district?

Although the questionnaire used in this study was not designed to determine particular reasons for rankings and selections, a number of respondents, especially teachers, went to some lengths to explain their choices. There appears to be a need for a further in-depth survey, probably involving personal interviews, with teachers and administrators, once again throughout the whole province. The results may offer some explanation for the differences between educational researchers and the rest of the educational community in selecting sources of information for importance and credibility in the evaluation of educational innovations.

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APPENDICES

APPENDIX A

A QUESTIONNAIRE ON THE IMPORTANCE OF INFORMATION FOR EDUCATIONAL INNOVATION

APPENDIX A (Cont'd)

PERSONAL DATA

1. Sex: M..... F.....
2. Age: 20-29 ..... 30-39 ..... 40-49 ..... 50-59 ..... 60+ .....
3. Teaching Certificate held: .....
4. First University Degree: B.A. ..... B.Sc. ..... B.Ed. .....
   Others (specify) .....
5. Highest Degree held: .....
6. Years of teaching experience: .....
7. Years of teaching at present school (university) .....
8. Teaching level, (check one): (a) Elementary .....
   (b) Junior Secondary .....
   (c) Senior Secondary .....
   (d) Post-secondary .....
9. If an administrator, years in present administrative position .....

QUESTIONNAIRE — PART A

INSTRUCTIONS: If you had to make a decision about whether to adopt a certain educational innovation (such as team teaching, differential staffing, computerized instruction, initial teaching alphabet), you would no doubt want to know certain things about the innovation.

On the next page there are NINE sources of information you might use. Please rank these according to how important or valuable they would be in your decision. Put a "1" next to the piece of information that is most important, a "2" to the one that is next in importance, and continue until all nine sources are ranked.

PART A

Rank	*Source of Information*
Administrator Questionnaire Rank	The results of a questionnaire given to school administrators (District Superintendent, Director of Education, Supervisors, etc.,) who have supervised the use of the innovation. The information could be in the form of a percentage of administrators who endorsed the innovation.

APPENDIX A (Cont'd)

Rank	*Source of Information*
Personal Observation Rank	Your own observation of the practice or use of the innovation in a classroom.
School Grades Rank	A comparison of students' school grades before and after the innovation, or a comparison of school grades between a group subjected to the innovation and an equivalent group of students using the older method or practice.
Educator Endorsement Rank	The endorsement of the innovation by well-known and highly respected educators.
Standardized Test Rank	A comparison of standardized test results between equivalent groups of children who have and have not been subjected to the innovation, or a comparison of standardized test results for a group before and after the innovation.
Principal Questionnaire Rank	The results of a questionnaire given to Principals who have supervised the use of the innovation. The information could be in the form of a percentage of Principals who endorse the innovation.
Logical Reasons Rank	Logical considerations about the innovation, such as the reasonableness of the arguments put forth to justify its adoption; the rationale or philosophy of the innovation, or the reasons why it is supposed to work; the theories from which the innovation is derived.
Teacher Questionnaire Rank	The results of a questionnaire given to teachers who had actually used or practiced the innovation. This information could be in the form of a percentage of teachers who have tried the innovation, believe it, prefer to continue using it, and think it is superior to former practices.
Good Friend Rank	The personal endorsement of the innovation by colleagues who are good friends of yours and who would give you their personal opinion of the innovation.

APPENDIX A (Cont'd)

QUESTIONNAIRE — PART B

INSTRUCTIONS: Suppose that you are in an administrative position which requires you to make a decision on an educational innovation about which you know very little. When you turn to some standard sources of information you find that they disagree, and you have to choose between them. Listed below are six standard sources of information matched in pairs. For each pair underline the standard source that you would choose to believe.

For example: A liar and a truth-teller

PART B

1. University Professor — News Media (TV, Newspaper, Magazine, etc.)
2. B.C. Department of Education — News Media
3. Professional Teachers' Journal — University Professor
4. Educational Research Journal — Professional Teachers' Journal
5. Professional Teachers' Journal — B.C. Department of Education
6. Educational Research Journal — News Media
7. College Textbook — B.C. Department of Education
8. Professional Teachers' Journal — College Textbook
9. Educational Research Journal — B.C. Department of Education
10. University Professor — College Textbook
11. B.C. Department of Education — University Professor
12. College Textbook — Educational Research Journal
13. News Media — Professional Teachers' Journal
14. University Professor — Educational Research Journal
15. College Textbook — News Media

APPENDIX B

November 14, 1972

Dear Colleague,

May I request your assistance in a study I am doing on the importance and credibility of sources of information in evaluating an educational innovation?

I am a practicing teacher in Victoria, and a graduate student in the Faculty of Education at the University of Victoria. This study will be used primarily to complete my graduate programme, but may also be of some direct benefit to my professional colleagues.

My study is based on a questionnaire which is to be sent to 125 Elementary, 35 Junior Secondary, and 50 Senior Secondary teachers, selected at random from all public school teachers in British Columbia. Each teacher will be asked to rate some standard sources of information useful in evaluating an educational innovation. My problem is that no master list of teachers in British Columbia is available from either The Department of Education or the B.C.T.F. I have selected a number of Elementary, Junior Secondary, and Senior Secondary schools from the 1970-71 Annual Report on Education. I am writing to the Staff Representative in each of these schools to request a list of staff members. As each list is received, names will be transferred to a final master list, from which 125 Elementary, 35 Junior Secondary, and 50 Senior Secondary teachers will be picked, again using random tables. This should give me a truly representative selection of teachers of this province.

Could you please send me a list of your staff in the enclosed self-addressed envelope? Please be assured that this list will only be used for the purpose outlined above, after which it will be destroyed.

Thank you very much for your cooperation,

Donald B. Camp

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Enclosure

APPENDIX C

(Suitable Salutation)

May I request your assistance in a study I am doing on the importance and credibility of sources of information in evaluating an educational innovation?

I am a practising teacher, and also a graduate student in the Faculty of Education at the University of Victoria. This study will be used primarily to complete my graduate programme, but may also be of some benefit to the educational community.

Would you please complete the enclosed questionnaire, and return it in the accompanying envelope? All data will be held in strictest confidence.

As your response is of great importance to my study, I wish to thank you for your interest and co-operation in this project. Should you desire an abstract of the results, please sign the questionnaire, or send your name and address to me under separate cover, and I will be pleased to comply.

Sincerely,

Donald B. Camp

3329 Kingsley St.
Victoria, B.C.

APPENDIX D

Dear Dr.

May I request your assistance in a study I am doing on the importance and credibility of sources of information in evaluating an educational innovation?

I am a graduate student in the Faculty of Education at the University of Victoria, and plan to use this study as the basis for my thesis.

Would you please complete the enclosed questionnaire, and return it in the accompanying envelope? This questionnaire is also being sent to sample groups of teachers and administrators involved with various levels of education. All data will be held in strictest confidence.

As your response is of great importance to my study, I wish to thank you for your interest and co-operation in this project. Should you desire an abstract of the results, please sign the questionnaire, or send your name and address to me under separate cover, and I will be pleased to comply.

Sincerely,

Donald B. Camp,

3329 Kingsley St.,
Victoria, B.C.

APPENDIX E

January, 1973

Dear

Hopefully you have received my questionnaire on educational innovations which was mailed two weeks ago. This questionnaire was sent to a proportional number of teachers, principals, and superintendents in British Columbia. If you have already returned it, I wish to thank you for your cooperation. If you have not yet done so, I would be most appreciative if you could find time to complete the questionnaire as <u>your</u> response is of great importance to this study.

Sincerely,

Donald B. Camp,

3329 Kingsley St.,
Victoria, B.C.

APPENDIX F

FREQUENCY DISTRIBUTION OF RESPONDENTS WITH UNIVERSITY DEGREES

Group	Baccalaurate		Post Graduate	
	Freq.	Per Cent	Freq.	Per Cent
Educ. Researcher	47	100	47	100
District. Super.	34	100	17	50
Principals	56	95	22	37
Elementary Teachers	39	43	1	1
Jr. Sec. Teachers	34	76	3	7
Sr. Sec. Teachers	46	94	10	20
All Teachers	119	64	14	7

APPENDIX G

AGE DISTRIBUTION OF EDUCATIONAL RESEARCHERS

Category	Age	Frequency	Per Cent
1	20-29	3	6
2	30-39	8	17
3	40-49	29	62
4	50-59	6	13
5	60 plus	1	2
	Total	47	100

Mean 46.5

APPENDIX H

AGE DISTRIBUTION OF DISTRICT SUPERINTENDENTS

Category	Age	Frequency	Per Cent
1	20-29	0	0
2	30-39	2	6
3	40-49	8	24
4	50-59	11	33
5	60 plus	12	37
	Total	33	100

Mean 55

APPENDIX I

AGE DISTRIBUTION OF PRINCIPALS

Category	Age	Frequency	Per Cent
1	20-29	1	2
2	30-39	8	14
3	40-49	28	50
4	50-59	15	27
5	60 plus	4	7
	Total	56	100

Mean 44

APPENDIX J

AGE DISTRIBUTION OF ELEMENTARY TEACHERS

Category	Age	Frequency	Per Cent
1	20-29	36	40
2	30-39	26	29
3	40-49	14	16
4	50-59	8	9
5	60 plus	5	6
	Total	89	100

Mean 34

APPENDIX K

AGE DISTRIBUTION OF JUNIOR SECONDARY TEACHERS

Category	Age	Frequency	Per Cent
1	20-29	16	36
2	30-39	14	32
3	40-49	6	14
4	50-59	7	16
5	60 plus	1	2
	Total	44	100

Mean 30

APPENDIX L

AGE DISTRIBUTION OF SENIOR SECONDARY TEACHERS

Category	Age	Frequency	Per Cent
1	20-29	9	19
2	30-39	20	43
3	40-49	8	17
4	50-59	9	19
5	60 plus	1	2
	Total	47	100

Mean 31

APPENDIX M

AGE DISTRIBUTION OF ALL TEACHERS

Category	Age	Frequency	Per Cent
1	20-29	61	34
2	30-39	61	34
3	40-49	28	15
4	50-59	24	13
5	60 plus	7	4
	Total	181	100

Mean 33

APPENDIX N

DISTRIBUTION OF EDUCATIONAL RESEARCHERS (ER) AND DISTRICT SUPERINTENDENTS (DS) THAT CHOSE TO BELIEVE EACH SOURCE OF INFORMATION IN SELECTED CONFLICTING PAIRS

Group	Paired Source of Information		X^2	Results
	Teacher's J. vs Univ.Prof.			
ER	22	19		
DS	26	7	4.02	sig.
	Research J. vs Teacher's J.			
ER	45	1		
DS	21	11	12.66	sig.
	Teacher's J. vs B.C.Dept.			
ER	36	8		
DS	10	23	18.72	sig.
	College Text vs B.C.Dept.			
ER	28	15		
DS	2	30	24.09	sig.
	Teacher's J. vs College Text			
ER	27	16		
DS	27	5	3.24	n.sig.
	Research J. vs B.C.Dept.			
ER	43	2		
DS	17	14	15.94	sig.

APPENDIX N (Cont'd)

Group	Paired Source of Information		X^2	Results
	Univ.Prof. vs College Text			
ER	26	16		
DS	23	9	0.42	n.sig.
	B.C.Dept. vs Univ.Prof.			
ER	11	33		
DS	27	5	23.80	sig.
	College Text vs Research J.			
ER	1	44		
DS	2	30	<3.84	n.sig.
	Univ.Prof. vs Research J.			
ER	12	32		
DS	8	23	0.18	n.sig.
	Univ.Prof. vs Media			
ER	43	1		
DS	32	0	<3.84	n.sig.
	B.C.Dept. vs Media			
ER	41	4		
DS	33	0	<3.84	n.sig.
	Research J. vs Media			
ER	45	0		
DS	33	0	<3.84	n.sig.

APPENDIX N (Cont'd)

Group	Paired Source of Information		X^2	Results
	College Text	vs Media		
ER	38	6		
DS	27	4	<3.84	n.sig.
	Teacher's J.	vs Media		
ER	45	0		
DS	32	0	<3.84	n.sig.

APPENDIX O

DISTRIBUTION OF EDUCATIONAL RESEARCHERS (ER) AND PRINCIPALS (PR) THAT CHOSE TO BELIEVE EACH SOURCE OF INFORMATION IN SELECTED CONFLICTING PAIRS

Group	Paired Source of Information		X^2	Results
	Teacher's J. vs Univ.Prof.			
ER	22	19		
PR	45	7	10.73	sig.
	Research J. vs Teacher's J.			
ER	45	1		
PR	35	17	13.19	sig.
	Teacher's J. vs B.C.Dept.			
ER	36	8		
PR	28	21	5.48	sig.
	College Text vs B.C.Dept.			
ER	28	15		
PR	9	41	19.05	sig.
	Teacher's J. vs College Text			
ER	27	16		
PR	49	3	12.64	sig.
	Research J. vs B.C.Dept.			
ER	43	2		
PR	40	13	6,10	sig.

APPENDIX O (Cont'd)

Group	Paired Source of Information		X^2	Results
	Univ.Prof. vs College Text			
ER	26	16		
PR	35	12	1.09	n.sig.
	B.C.Dept. vs Univ.Prof.			
ER	11	33		
PR	35	14	18.12	sig.
	College Text vs Research J.			
ER	1	44		
PR	3	39	<3.84	n.sig.
	Univ.Prof. vs Research J.			
ER	12	32		
PR	4	48	5.24	sig.
	Univ.Prof. vs Media			
ER	43	1		
PR	47	5	<3.84	n.sig.
	B.C.Dept. vs Media			
ER	41	4		
PR	50	1	<3.84	n.sig.
	Research J. vs Media			
ER	45	0		
PR	52	0	<3.84	n.sig.

APPENDIX O (Cont'd)

Group	Paired Source of Information		X^2	Results
	College Text	vs Media		
ER	38	6		
PR	43	6	<3.84	n.sig.
	Teacher's J.	vs Media		
ER	45	0		
PR	52	0	<3.84	n.sig.

APPENDIX P

DISTRIBUTION OF EDUCATIONAL RESEARCHERS (ER) AND ELEMENTARY TEACHERS (ET) THAT CHOSE TO BELIEVE EACH SOURCE OF INFORMATION IN SELECTED CONFLICTING PAIRS

Group	Paired Source of Information		X^2	Results
	Teacher's J. vs Univ.Prof.			
ER	22	19		
ET	74	12	14.08	sig.
	Research J. vs Teacher's J.			
ER	45	1		
ET	58	26	13.26	sig.
	Teacher's J. vs B.C. Dept.			
ER	36	8		
ET	57	26	1.91	n.sig.
	College Text vs B.C. Dept.			
ER	28	15		
ET	23	57	13.78	sig.
	Teacher's J. vs College Text			
ER	27	16		
ET	75	6	15.11	sig.
	Research J. vs B.C.Dept.			
ER	43	2		
ET	65	14	3.39	n.sig.

APPENDIX P (Cont'd)

Group	Paired Source of Information		X^2	Results
	Univ.Prof. vs College Text			
ER	26	16		
ET	63	20	2.03	n.sig.
	B.C.Dept. vs Univ.Prof.			
ER	11	33		
ET	47	37	9.95	sig.
	College Text vs Research J.			
ER	1	44		
ET	3	83	<3.84	n.sig.
	Univ.Prof. vs Media			
ER	43	1		
ET	73	10	<3.84	n.sig.
	Univ.Prof. vs Research J.			
ER	12	32		
ET	12	71	2.30	n.sig.
	B.C.Dept. vs Media			
ER	41	4		
ET	75	10	<3.84	n.sig.
	Research J. vs Media			
ER	45	0		
ET	85	0	<3.84	n.sig.

APPENDIX P (Cont'd)

Group	Paired Source of Information		X^2	Results
	College Text	vs Media		
ER	38	6		
ET	74	9	<3.84	n.sig.
	Teacher's J.	vs Media		
ER	45	0		
ET	79	2	<3.84	n.sig.

APPENDIX Q

DISTRIBUTION OF EDUCATIONAL RESEARCHERS (ER) AND JUNIOR SECONDARY TEACHERS (JrT) THAT CHOSE TO BELIEVE EACH SOURCE OF INFORMATION IN SELECTED CONFLICTING PAIRS

Group	Paired Source of Information		X^2	Results
	Teacher's J. vs Univ.Prof.			
ER	22	19		
JrT	33	12	2.80	n.sig.
	Research J. vs Teacher's J.			
ER	45	1		
JrT	28	17	16.00	sig.
	Teacher's J. vs B.C.Dept.			
ER	36	8		
JrT	32	13	0.88	n.sig.
	College Text vs B.C. Dept.			
ER	28	15		
JrT	11	34	13.14	sig.
	Teacher's J. vs College Text			
ER	27	16		
JrT	41	4	8.49	sig.
	Research J. vs B.C. Dept.			
ER	43	2		
JrT	31	14	9.20	sig.

APPENDIX Q (Cont'd)

Group	Paired Source of Information		X^2	Results
	Univ.Prof. vs College Text			
ER	26	16		
JrT	36	9	2.52	n.sig.
	B.C.Dept. vs Univ.Prof.			
ER	11	33		
JrT	30	15	13.91	sig.
	College Text vs Research J.			
ER	1	44		
JrT	0	44	<3.84	n.sig.
	Univ.Prof. vs Research J.			
ER	12	32		
JrT	6	39	1.88	n.sig.
	Univ.Prof. vs Media			
ER	43	1		
JrT	42	3	<3.84	n.sig.
	B.C.Dept. vs Media			
ER	41	4		
JrT	42	3	<3,84	n.sig.
	Research J. vs Media			
ER	45	0		
JrT	44	1	<3.84	n.sig.

APPENDIX Q (Cont'd)

Group	Paired Source of Information		X^2	Results
	College Text	vs Media		
ER	38	6		
JrT	31	14	<3.84	n.sig.
	Teacher's J.	vs Media		
ER	45	0		
JrT	43	2	<3.84	n.sig.

APPENDIX R

DISTRIBUTION OF EDUCATIONAL RESEARCHERS (ER) AND SENIOR SECONDARY TEACHERS (SrT) THAT CHOSE TO BELIEVE EACH SOURCE OF INFORMATION IN SELECTED CONFLICTING PAIRS

Group	Paired Source of Information		X^2	Results
	Teacher's J. vs Univ.Prof.			
ER	22	19		
SrT	41	6	10.54	sig.
	Research J. vs Teacher's J.			
ER	45	1		
SrT	31	15	12.79	sig.
	Teacher's J. vs B.C.Dept.			
ER	36	8		
SrT	40	7	0.48	n.sig.
	College Text vs B.C.Dept.			
ER	28	15		
SrT	14	32	9.38	sig.
	Teacher's J. vs College Text			
ER	27	16		
SrT	43	4	9.10	sig.
	Research J. vs B.C.Dept.			
ER	43	2		
SrT	42	4	0.16	n.sig.

APPENDIX R (Cont'd)

Group	Paired Source of Information		X^2	Results
	Univ.Prof. vs College Text			
ER	26	16		
SrT	35	11	1.46	n.sig.
	B.C.Dept. vs Univ.Prof.			
ER	11	33		
SrT	25	21	6.89	sig.
	College Text vs Research J.			
ER	1	44		
SrT	3	44	<3.84	n.sig.
	Univ.Prof. vs Research J.			
ER	12	32		
SrT	6	41	2.17	n.sig.
	Univ.Prof. vs Media			
ER	43	1		
SrT	43	3	<3.84	n.sig.
	B.C.Dept. vs Media			
ER	41	4		
SrT	42	5	<3.84	n.sig.
	Research J. vs Media			
ER	45	0		
SrT	45	1	<3.84	n.sig.

APPENDIX R (Cont'd)

Group	Paired Source of Information		X^2	Results
	College Text	vs Media		
ER	38	6		
SrT	36	10	<3.84	n.sig.
	Teacher's J.	vs Media		
ER	45	0		
SrT	45	2	<3.84	n.sig.

APPENDIX S

DISTRIBUTION OF EDUCATIONAL RESEARCHERS (ER) AND ALL TEACHERS (AT) THAT CHOSE TO BELIEVE EACH SOURCE OF INFORMATION IN SELECTED CONFLICTING PAIRS

Group	Paired Source of Information		X^2	Results
	Teacher's J. vs Univ.Prof.			
ER	22	19		
AT	148	30	>3.84	sig.
	Research J. vs Teacher's J.			
ER	45	1		
AT	117	58	16.30	sig.
	Teacher's J. vs B.C.Dept.			
ER	36	8		
AT	129	46	<3.84	n.sig.
	College Text vs B.C.Dept.			
ER	28	15		
AT	48	123	>3.84	sig.
	Teacher's J. vs College Text			
ER	27	16		
AT	159	14	>3.84	sig.
	Research J. vs B.C.Dept.			
ER	43	2		
AT	138	42	4.50	sig.

APPENDIX S (Cont'd)

Group	Paired Source of Information		X^2	Results
	Univ.Prof. vs College Text			
ER	26	16		
AT	134	40	3.27	n.sig.
	B.C.Dept. vs Univ.Prof.			
ER	11	33		
AT	102	73	>3.84	sig.
	College Text vs Research J.			
ER	1	44		
AT	6	171	<3.84	n.sig.
	Univ.Prof. vs Research J.			
ER	12	32		
AT	24	151	<3.84	n.sig.
	Univ.Prof. vs Media			
ER	43	1		
AT	158	16	<3.84	n.sig.
	B.C.Dept. vs Media			
ER	41	4		
AT	159	18	<3.84	n.sig.
	Research J. vs Media			
ER	54	0		
AT	174	2	<3.84	n.sig.

APPENDIX S (Cont'd)

Group	Paired Source of Information		X^2	Results
	College Text	vs Media		
ER	38	6		
AT	141	33	<3.84	n.sig.
	Teacher's J.	vs Media		
ER	45	0		
AT	167	6	<3.84	n.sig.

Surname: CAMP Given Names: DONALD BARRINGTON MELVIN

Place of Birth: LONDON, ONTARIO Date of Birth: OCTOBER 9, 1929

Educational Institutions Attended, with Dates of Entering and Leaving:

ACADIA UNIVERSITY	1954	to	1958
UNIVERSITY OF ROCHESTER	1958	to	1960
UNIVERSITY OF TORONTO	1960	to	1961
UNIVERSITY OF VICTORIA (Part Time)	1968	to	1974

Degrees, Diplomas, Etc., Awarded, with Dates and Names of Institutions:

BACHELOR OF SCIENCE	1958	ACADIA UNIVERSITY

Honors and Awards:

Khaki University and YMCA Memorial Scholarship

Murdock C. Smith Scholarship in Marine Biology

Gould Memorial Prize in Biology

Fellow, University of Toronto School of Hygiene

Publications:

_____

_____

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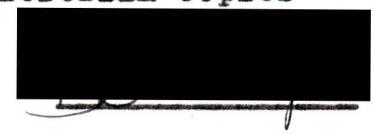

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