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STUDY OF THE ASSESSMENTS OF URBAN PUBLIC SECONDARY SCHOOL TEACHERS WITH REGARD TO SOURCES OF INFORMATION

A Dissertation Presented

by

FRANCIS A. BARAN

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University of Massachusetts in partial fulfillment
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Education

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DEDICATION

To my most precious gems, the August peridot and the September sapphires.

ABSTRACT

Study of the Assessments of Urban Public Secondary School Teachers with Regard to Sources of Information

(February 1984)

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The general purpose of this study was to ascertain the assessments of urban public secondary school teachers toward sources of information which are related to their professional practice. The specific purposes were:

1. To ascertain relationships between various demographic variables (sex, age, training, experience and major teaching subject area) and the types of sources of information identified as important to personal practice.

2. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified the various sources of information: cosmopolite, localite, impersonal, personal, personal cosmopolite, personal localite, impersonal localite and impersonal cosmopolite as important to their practice.

3. To identify from a selected list, reasons selected urban public secondary school teachers need information.

4. To identify those characteristics considered most important by selected urban public secondary school teachers, in a source of information.

5. To determine if the view of the Educational Resources Information Center services offered in the 70's had carried over into the 80's.

The study outcomes indicate that basic demographic variables are not good predictors of how urban public secondary school teachers assess different types of sources of information. Only sex and number of years of experience produced consistent patterns of assessments. The extremely high rating for the reason "Keeping aware of developments in my particular subject area," reaffirms the strong position of subject matter orientation in the area of secondary education. Specific characteristics associated with a source of information, that is easily accessible and relevant, are of primary importance to urban public secondary school teachers. The study outcomes indicate that services such as the Educational Resources Information Center (ERIC) services have experienced increased recognition by urban public secondary school teachers. However, as a source of information, the ERIC services are assessed poorly by the urban public secondary school teachers surveyed.

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THE PROBLEM

We can view our social order in many ways. One way is to see it coping with an increase in knowledge and an accelerated rate of societal change never before experienced by mankind. It would be most inaccurate to say, however, that all segments of society have utilized new knowledge or have adapted to the increased rate of change with the same degree of efficiency and thoroughness. Fields such as medicine, agriculture and some areas of industry have not only adapted to the increase in the rate of societal change but have also fostered those changes. By establishing efficienct methods of communication between the knowledge producers (universities, research centers, research and development laboratories, etc.) and the knowledge users (doctors, farmers, industrialists, etc.) these fields have encouraged the development of new knowledge and so have stimulated change.

Changes in society obviously have enormous implications for education. Public education personnel, unfortunately, have been slow to utilize knowledge produced by research and development specialists and have been slow to adapt to the demands of a rapidly changing society. Critics of public education argue that the nation's schools have been weakened by such institutional lethargy and thus have frequently failed to cope with the challenges of change. Franks and Howard (1974:29) say that, "Though the world is in transition to a post-industrial society, our school systems are still busy preparing students for a nineteenth century industrial world." Heckinger (1979:20) also sees us in a crisis

situation when he states that, "Public education in the United States is in mortal danger...not within recent memory have the public schools had so few friends or so many detractors."

As in most other areas of society, there has been an explosion in the amount of research and development completed pertaining to the processes, products and procedures of education. The heart of the knowledge utilization problem in public education appears to lie, not in the production of new knowledge, but rather in the communication of that knowledge to the practitioner and its utilization by the practitioner. Too few people in public education have demonstrated a capacity to use relevant new knowledge.

Much educational change is aimed at and should eventually affect, either directly or indirectly, the classroom teacher. However, very little is known about sources of new knowledge concerning educational practices utilized by educational practitioners (teachers). In describing the focus of educational reform Fullan (1972:31) says, "I believe that it is vastly more productive to reverse the emphasis by starting with the individual user and then considering the resources, organizational needs, and eventually the type of social system to support the desired process." This user-based start is in contrast to starting with the system as a whole and specifying changes that presumably will help the individual user. Mann (1978), addressing this issue, suggested that federal program/project strategies designed to facilitate change at the user level do not take into account the unique features of user knowledge acquisition and utilization.

Miles (1981:93), in a paper titled "Mapping the Common Properties of Schools," reinforces this concern by stating that researchers lacked data on "actual seeking utilization of externally available knowledge of people in schools..." Miles (1981:110-111) goes on to say that there is a need for "...much more directly descriptive data...of the most straightforward sort...of the main types of knowledge people seek inside and outside their local organizations and from whom/what they seek it..." And Hood (1979:Appendix B-1) in a summary of what is known about what information educators need and use states "...the information utilization behavior of practitioners...has not been studied as closely as that of educational researchers." Are there patterns of assessments, given by teachers in general and public secondary school teachers in particular, in regard to information sources that can be described in order to aid producers of new knowledge in directing their information to the classroom teacher?

In answer to this question, Mann (1978:406) summarizes the research findings succinctly: "People use that information which is most convenient--chronologically, geographically, physically, politically, and economically. They do not make exhaustive searches of a hypothetical universe of alternatives. They do not attempt to determine maximum expected utility on all possible alternatives." Hood (1976:II-4), in referring to the average educational practitioner, supports Mann's statement by commenting that: "Practitioners usually need information from a large data base and have little time to gather and use it. They are also frequently limited in formal training in information search

and retrieval. The most frequently used and preferred information sources are colleagues and other informal contacts."

There are a number of sources in the literature which support Mann and Hood. However, most of them describe the educational practitioner in a very general or collective sense: Chorness, Rittenhous and Heald (1968) described the patterns of information retrieval for district staff, principals and vice principals and teachers; Pastre (1968) dealt with elementary principals; Reid (1969) studied elementary teachers; Havelock (1973) reported on the feelings of superintendents; Hood et al. (1976) reported on pre-school, elementary and secondary staff; and Oelschlager (1980) studied rural teachers.

Federal officials have attempted to facilitate the linkage of new know-how to the needs of knowledge users in a variety of ways. An information storage and retrieval system called the Educational Resources Information Center (ERIC) was created, and a variety of modus operandi for gaining access to ERIC were put into place. Unfortunately, practitioner response to these federal initiatives has been variable and generally infrequent.

Teachers in general are a group least likely to make use of resources like ERIC. Hood (1976), in The Educational Information Market Study: Study of Information Requirements in Education, utilized a practitioner audience including preschool, elementary, and secondary staff connected with local educational agencies. When asked to indicate from which human and organizational sources they would seek information in their work, zero percent of the respondents picked the National Information Services (ERIC, NITS) as a first choice. Only two percent indicated

National Information Services (ERIC, NITS) as a second choice, and one percent ranked it third. Looking at secondary school teachers, Fry (1972), in the Evaluation Study of ERIC Products and Services: Final Report, reported that of the respondents indicating that they made use of the ERIC system, only 19.2 percent were secondary school teachers. While federal officials, responsible for modifying ERIC to meet user needs more effectively, are aware of the problem, they are at a loss to resolve the problem. One important aspect of their frustration relates to the fact that these federal officials know little about the information search behavior of teachers in general or specifically about urban secondary school teachers, and little research exists to help resolve their lack of understanding of the problem.

One relevant study by Hood and Hayes (1967) appeared prior to the time ERIC was well-developed. These researchers offered information pertaining to teachers' and administrators' interest in and attitudes toward innovation and knowledge production. They reported that sources of information most frequently utilized by high school teachers included one-way forms of media, informal contact, professional journals, and research reports or bulletins. ERIC was not mentioned because it was still in a "toddler" stage of development. What is not known is how these knowledge user patterns of the sixties have carried over into the early eighties.

Federal officials may have gotten the cart before the horse when they established and subsequently expanded the ERIC system, when they sponsored information package development (such as the PIP reports), and when they established an array of intermediate service agencies

(such as the regional educational laboratory network). As the cited studies indicated, little information pertaining to knowledge users' information search behavior or to knowledge users' information needs was available at the time ERIC, PIP, and the regional laboratories came into being. Policy makers made assumptions about user behavior during this period of institution building which they hoped were accurate.

It is now evident that segments of audiences targeted to make use of services like ERIC, PIP, and the regional educational laboratories have failed to do so. Secondary school teachers, as a group, and urban public secondary school teachers in particular, illustrate one segment of the targeted audience which has not capitalized upon these services. If policy makers intend to meet needs of these educators, more information will have to be obtained about their information acquisition modus operandi. We need to know more about information search behavior and information needs of segments of the targeted audience--e.g., urban public secondary school teachers--which do not routinely make use of services like ERIC, PIP, and the regional educational laboratories.

Purpose of the Study

The general purpose of this study is to ascertain the assessments of urban public secondary school teachers toward sources of information which are related to their professional practice. Specific purposes are:

1. To ascertain relationships between sex and the types of sources of information identified as important to personal practice.

2. To ascertain relationships between age and the types of sources of information identified as important to personal practice.

3. To ascertain relationships between training and the types of sources of information identified as important to personal practice.

4. To ascertain relationships between experience and the types of sources of information identified as important to personal practice.

5. To ascertain relationships between major teaching subject area and the types of sources of information identified as important to personal practice.

6. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified cosmopolite sources of information as important to their practice.

7. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified localite sources of information as important to their practice.

8. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified impersonal sources of information as important to their practice.

9. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified personal sources of information as important to their practice.

10. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified personal cosmopolite sources of information as important to their practice.

11. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified impersonal cosmopolite sources of information as important to their practice.

12. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified personal localite sources of information as important to their practice.

13. To ascertain characteristics (i.e., age, training, experience, etc.) of subjects who identified impersonal localite sources of information as important to their practice.

14. To identify from a selected list, reasons selected urban public secondary school teachers need information.

15. To identify those characteristics considered most important by selected urban public secondary school teachers in a source of information.

Specific hypotheses of this study are: (1) the demographic variables of sex, age, amount of formal training, number of years of experience and specific subject matter taught will produce distinct patterns of assessments in regard to types of sources of information; (2) urban public secondary school teachers will indicate, in significant numbers, that the Educational Resources Information Center (ERIC) Services is a source of information that they have never used in the context of their work; and (3) the characteristics "easily accessible" (near-at-hand, can be reached with minimum effort) and "quickly retrievable" (information available immediately or within twenty-four hours) will be ranked

as the two most important characteristics in their respective lists significantly more often by urban public secondary school teachers than any of the other listed choices.

Significance of the Study

In order for public education to cope effectively with the challenges of a changing society, the classroom teacher must keep abreast of advances in education in addition to the advances in the specific subject matter in which he/she deals. The nature of education makes this a particularly difficult task. Asking teachers to change is like telling them that they are doing something wrong. This can lead too often to feelings of hostility and a negative view of change.

If classroom teachers are not only going to accept but also to seek change, channels of communication between knowledge producers and classroom teachers must be improved. On the one hand, knowledge producers must deal with problems that teachers feel are significant and they must report their findings in a style with which teachers can deal. On the other hand, teachers must make an active effort to seek out and to utilize sources of new knowledge, both in the field of education and in their specific subject matter fields.

The results of this study may be useful for the improvement of methods of dissemination used for information intended to reach the urban public secondary school teacher. The study may also be useful for the planning of new information sources and for the improvement of current information sources intended to reach the urban public secondary school teacher.

Limitations of the Study

Any conclusions or recommendations in the study should be viewed with the following considerations in mind:

1. Data for the study were gathered by using instruments which were self-reporting and involve the perceptions of the subjects rather than direct measures of behavior or conditions.

2. The study sample consisted of persons working in urban public secondary settings in the western section of Massachusetts, which restricts the generalizability of the study outcomes.

Definition of Terms

The following definitions are offered to facilitate the reading and understanding of this study:

1. Adoption - the decision to make full use of a new idea, procedure, process, etc.

2. Assessment - the determination of the importance of a source of information by a teacher in the context of his/her work.

3. Communication - the process by which messages are transferred from a source to a receiver.

4. Cosmopolite source - a source of information from outside the social system being studied.

5. Diffusion - the process by which innovations spread to the members of a social system.

6. Dissemination - the process by which new ideas are communicated to the members of a social system.

7. Experience - the number of years a teacher has taught at the secondary level.

8. Impersonal source - a source of information which involves one-way forms of media.

9. Impersonal cosmopolite source - a source of information which involves one-way forms of media and is from outside the social system being studied.

10. Impersonal localite source - a source of information which involves one-way forms of media and is from within the social system being studied.

11. Information retrieval - the degree to which a person utilizes communication channels to obtain ideas, advice, or information about specific issues, programs, procedures, etc.

12. Knowledge - information concerning educational practices, procedures or programs.

13. Localite source - a source of information from within the social system being studied.

14. Major teaching subject area - the subject material a teacher spends the majority of his/her time instructing.

15. Personal source - a source of information which involves two-way forms of media.

16. Personal cosmopolite source - a source of information which is from outside the social system being studied and involves two-way forms of media.

17. Personal localite source - a source of information which is from within the social system being studied and involves two-way forms of media.

18. Practitioner - a teacher.

19. Public - a system of financial support solely through the use of tax generated revenues.

20. Secondary school - a school encompassing grade nine through grade twelve or a school encompassing grade ten through grade twelve.

21. Teacher - a person (male or female) who spends all or a majority of the school day as the primary instructor in a classroom setting.

22. Training - the highest level of undergraduate or graduate work completed by a teacher.

23. Urban - describing the characteristics of or constituting a city.

24. Utilization - the full use of a new idea, procedure, process, etc.

CHAPTER II

REVIEW OF THE RELATED RESEARCH AND LITERATURE

Introduction

The saying, "The only things that are certain are death and taxes," should be altered to, "The only things that are certain are death, taxes and change." Change in society is inevitable. Some changes may appear trivial, such as a change in the printing style of a local newspaper. Other changes may be quite profound, such as changes in medical technology or military armaments. Over the past fifty years part of the world has changed from a concrete to a conceptual one. A better understanding of the atom, discoveries in the fields of organic and biochemistry, and advances in computer and laser technology have helped to create a rate of change never before experienced by mankind. The inescapable reality is that societies change in a variety of aspects and some of the changes can have lasting effects on the institutions and organizations operating within the society.

Change and Public Education

Public education as an institution in the United States of America is entering a period during which it will need to make some major adjustments in its efforts to educate our young people. We have in our nation's capital a government which has made massive cutbacks in financial aid to education. Our Senators, Representatives and Supreme Court Justices are reexamining their stands on issues such as tuition tax credits and the busing of students to achieve racial integration. Many

states have seen voted into law, measures restricting the ability and the amounts of money local communities can raise to support their local public schools. A federal commission appointed in August 1981 by T. H. Bell, the Secretary of Education, in a report titled "A Nation at Risk: The Imperative for Educational Reform," described education in our society in the following manner:

> ...the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and as a people (1981:5).

The report goes on to say that "...we have allowed this to happen to ourselves." All of this change in education, along with the criticisms, are taking place in a society in which the amount of new knowledge is increasing at an ever accelerating rate, yet the public school student population has experienced a drop in standardized test scores and has been described as lazy and unwilling to learn.

The Importance of Planned Change

The manner in which education as an institution effects the necessary changes over the next few years is important. The changes that occur must not be allowed to happen spontaneously or to evolve slowly over a period of time. If the public schools are going to both educate our young people and change during the coming years, those people in positions of leadership and responsibility must view change as a process and not as a single event. Spontaneous change can be too erratic and haphazard while slow evolutionary change would be ineffective in a rapidly changing society. Planned change is the systematic, controlled effort to alter more than one of the following aspects of a social

system: (1) its tasks, (2) its structure, (3) its technology, or (4) its participants in ways thought to be effective in achieving the system's or organization's goals (Owens and Steinhoff, 1976). It is planned change, or what he called neomobilistic change, that Guba (1968:10) was referring to when he said, "...unless we can produce more dramatic and startling changes than we have until now, the system may be doomed."

Two very important aspects of any planned change process are the retrieval of information and the methods of dissemination utilized to diffuse that information throughout a social system. There is no one person involved in any change process that possesses more than a discreet portion of the information pertinent and available in a given situation. Information retrieval must be recognized as a necessary function of all personnel involved in a change process (Havelock/ Havelock, 1973). Information retrieval alone, however, will only result in well-informed but isolated individuals or small groups. Once accumulated and sorted, information must be accurately communicated to other persons within the social system. Therefore the most effective methods must be chosen to thoroughly diffuse new information throughout a social system.

Dissemination is the process by which new ideas are communicated to the members of a social system. Therefore communication must be viewed as an important ingredient throughout any social change process. In fact, all explanations of human behavior directly stem from an examination of how individuals acquire and modify ideas through communication with others. Communication in its simplest form is the process

by which a message or information is transferred from a source to a receiver. Communication channels or the means by which the message or information gets from the source to the receiver can be divided into two categories, personal and impersonal. A personal channel is one that involves a face-to-face exchange between two or more individuals. An impersonal channel is one that does not involve person-to-person contact but rather involves mass media such as radio, television, magazines and the like (Rogers and Shoemaker, 1971).

Theories of Diffusion Methodology

Since, as Patton (1978) indicates, it is people, individual, idiosyncratic people, that consume information, it is the various channels of communication chosen by people that determine how effectively new information will diffuse through a social system. The essence of the dissemination process then is the human interchange by which one person communicates a new idea to one or several other persons. The more prevalent theories of diffusion methodology are best summarized by Havelock and Havelock (1973). First there is change as a process of social interaction. In this model, the individual's place in the network, his group membership and reference group identification are major predictors of individual adoption. Second, there is change as a research-development process. This model assumes that a rational consumer will accept and adopt an innovation if it is presented in the proper fashion. Third, change is presented as a problem solving model. The emphasis here is on the ability of the client-user system to sense and articulate a specific need. The user then must evaluate alternatives,

make a choice, implement and evaluate the effectiveness of the change in satisfying the original need. And finally, change is presented as a linkage model. Here the focus is on the problem-solver with meaningful relations to outside resources. The initial resource person must in turn have access to more remote and more expert sources than himself. As presented, however, the four theories do not deal with a basic issue: In what form is information best transmitted from producer to user (Madey, 1981)? Wolf (:4), in an unpublished paper titled "Linking Knowledge Production and Needs of Knowledge Users," summarizes the major problem with current diffusion theory:

> Knowledge diffusion/utilization theory, a subset of social change theory, accurately mirrors perturbations of the mother theory. Several different conceptual systems which address pertinent facts of diffusion/utilization are recognized; however, each more accurately represents a point of view than a theoretical model.

Knowledge Search and Utilization in Fields Other than Education

If present knowledge diffusion theory does only represent various points of view, then how does new knowledge get from the producer to the user? There must be mechanisms available which successfully accomplish the transfer of information from the research and development field to the user. We are continually being told by the medical profession that an operation or a drug thought revolutionary, in a short period of time is considered obsolete because of new information. In agriculture, the number of active farmers is steadily declining, yet our farmers are continually feeding larger numbers of people.

Information concerning new machines, new fertilizers, new and more resistant plant strains, and new methods of animal care must be making their way to the farmers. Just in the past fifteen years we have seen tremendous advances in the area of computerization. The home computers that are flooding the marketplace today are being compared to computers found only in industry just a few years ago. How do fields such as medicine, agriculture, and industry communicate new information to the user? Coleman et al. (1966) indicated that physicians described as being early adopters of new information tended to utilize the following sources of information: (1) they attended specialist (as opposed to generalist) meetings, (2) they read several medical journals, (3) they appeal to several resources before making a judgement, and (4) they visit out of town medical institutions which they use as a point of reference. Gertsberger and Allen (1968), reporting on the industrial arena, indicated that research and development engineers tended to use information sources which were considered more readily accessible, easier to use, and which were believed to provide information of higher quality. Amey (1968:12), in a study of industrial firms, states that "...at the lowest and highest levels...verbal communication is the most important." In the area of agriculture, Lionberger (1960) and Carlson (1965) found that early adopters of innovations tended to use non-local sources for their information. Lionberger (1960:103) specifically indicated that such non-local sources such as county agents and college of agriculture and vocational agricultural teachers were utilized by farmers described as early adopters of innovations. The implication here is that at least some members of each of these various professions

actively seek information. These studies also suggest considerable variations both within and between the professional settings.

The Nature of Public Schools

The fields of agriculture, industry and medicine have been successful, using a variety of methods, in the area of knowledge search and utilization. One would think that other fields might be just as successful in the area of knowledge search and utilization if some of those same successful methods were employed. Education, however, has not met with the same degree of success as agriculture, industry and medicine. Can the field of education be so different as to make the communication of information appear to be an impossible task? The very nature of the public schools does create special problems for the successful transmission of new information. Unlike commercial and industrial enterprises the public schools have not had to depend upon the quality of their products for their existence. Within broad limits it can be said that the public schools have not had to overly exert themselves to please their pupils or their pupils' parents. Enrollment in public schools can be tied to factors such as the birth rate and transfers into and out of a district (Yates, 1971).

The goals of industry, agriculture and medicine are often precise and well defined. Research and development specialists can target these goals and expect, at least, to receive encouragement in their efforts. Public school officials seldom set forth precise, well-defined goals (Carlson et al., 1965). Goals for public education vary on the federal, state and local levels. Along with these differences there

are differences based upon geographic location and the economic and experiential base of a community.

The output of education, unlike that of many enterprises, is not immediately open to inspection. A doctor's patients are cured or not cured; a manufacturer's products can be evaluated as good or inferior. Thus, both the doctor and the manufacturer look to sources of new information to improve their performance or their products to insure that their reputations do not suffer. Educators, on the other hand, are able to claim that their methods or procedures will have positive effects over the long run and it is difficult for the layman to question their claims (Yates, 1971).

The manufacturer is concerned with a better product to increase profits. The physician is looking for better drugs or treatments to lengthen life and to reduce suffering. The farmer is interested in a greater yield from the same or less acreage. These basically singular tasks make evaluating and choosing new knowledge a much easier task than that found in the public schools. The task of educating young people places the schools in a delicate position. On the one hand the institution is interested in transmitting and sustaining the culture; therefore, the schools have a stake in maintaining stability so that traditional results can be produced. On the other hand, the schools can initiate change in the culture through the education of the young. From this point of view, the schools must be particularly responsive to demands for new kinds of results (Glass, 1977; Brickell, 1980).

The Classroom Teacher and Change

In order to fully understand the unique nature of information transfer in public education, we must look to the classroom teacher. Much literature characterizes educational practitioners, especially teachers, as conservative, resistant and hostile to change, and satisfied with the status quo (Van Wyck, 1971; Miller, 1971; Engel, 1974; Harthberger, 1974). The school for the teacher is the organization in which one does the work of a teacher. Except in a disjointed fashion, it is not the social organism that provides the goals, the relationships and the setting within which a teacher channels efforts to produce something in consort with others. The act of teaching is a unique and idiosyncratic act. Teachers develop a repertoire of methods to deal with the learning environment. Telling teachers that there is a new way or possibly a better method of teaching is like telling them that they are doing something wrong. This often leads to feelings of hostility and a negative view not only of the new information but also of the source of the new information.

The Researcher Practitioner Gap

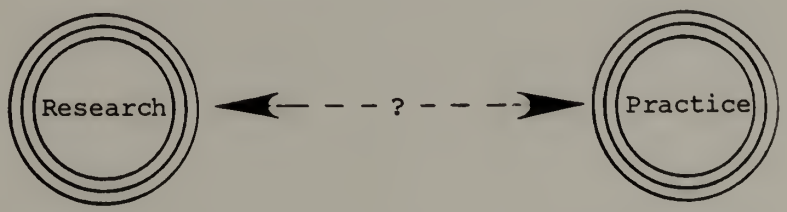
As Ben-David (1960) and Zuckerman (1967) point out, researcher and practitioner must both have an interest before communication between them can arise, and indifference is as common with the layman as with the researcher. Eve (1971) indicates that educational practitioners do not consider that the scientific method is of any great significance to their work, and consequently tend to view educational research activities as somewhat "dubious" enterprises. Yates (1971) would interpret

this indifference or dubious attitude of the practitioner for the researcher more as a feeling of being threatened. Yates (1971:71) illustrates this threatened attitude by stating:

> Researchers talk blandly of curriculum evaluation, of defining the aims of education in behavioral terms, and measuring the extent to which they are attained. Their standardized tests of achievement have already encouraged a number of uncomfortable comparisons between different forms of organization and different methods of teaching. If they are allowed a free hand in this respect, the consequences of every...decision might one day be open to public scrutiny, and the pupils themselves and their parents could conceivably point to objective evidence to show that some schools or teachers were less effective than others.

Unfortunately, these negative perspectives, especially of the teacher for the researcher, have helped to create a gap between the two groups.

The gap between the researcher, the producer of new knowledge, and the practitioner, the user of new knowledge, is accurately illustrated in the following diagram offered by Havelock (1968:64):



> The two enclosures represent two social systems each defined by its own set of rules, values, language and communication patterns. Those norms which are shared within each system also define their separateness from each other. There is an inadequacy of shared values, common perceptions, and inter-system communication patterns.

Havelock and Benne (1964:126) further describe the gap between these two ends of the same continuum while at the same time subtly indicating

the need for an effective connection by comparing the situation to the human brain:

> The basic research 'establishment' functions... like the new brain (cerebrum) abstracting, generalizing and ruminating, while at the other end the consumer functions like the old brain (thalamus, hypothalamus) needing, demanding, willing.

The basic values differences between the fields of research and practice are traced to an early distinction between the terms and concepts for talking about and interpreting the cognitive and the affective aspects of man's behavior (Benne, Bennis and Chin, 1969:118-119).

> Due to the process of abstracting, necessary for the creation of terms and concepts, a gulf between the two omnipresent aspects of man's behavior is made and widened. And we are then constrained to talk about separate and polarized entities: ideas versus emotions, rational versus nonrational, perceptions and cognitions as effected by emotions, rational task structures versus the structure of interpersonal relations in groups, and so on.

Any description of the distinction between the researcher and practitioner orientation must take into account the reasons for which the two groups diagnose particular cases. Benne, Bennis and Chin (1969:117) describe this basic difference in orientation nicely:

> ...practitioners are certainly concerned with particular 'cases,' with their diagnosis and with planning treatments to effect improvement in them. Scientists, on the other hand, are concerned with particular 'cases' primarily to verify or disprove generalizations about the relationships between variables that are somehow exemplified in the 'cases.'

In addition, the exchange of information between a basic scientist and an applied scientist, or between a practitioner and a consumer is an

act of communication and therefore the message must be expressed in terms familiar to both sides. Unfortunately, however, the gap between the researcher and the practitioner is complicated by the fact that the researcher is often not only using unfamiliar words but often refers to concepts that the practitioner has not established (Yates, 1971).

Universities, teacher corps, National Institute for Education, regional research centers and local education agencies have generated research findings which have direct implications for practice in terms of the development of classroom materials, complete instructional systems, implementation processes, and procedures for evaluation. However, research outcomes which sit unused on shelves are a far cry from improved educational practice. For research to be effective as an instrument of educational improvement, it must make an impact on those who make the decisions that affect day-to-day practice in the classrooms--teachers. The gap which exists between the educational practitioner and the researcher has been bridged on numerous occasions; however, the image of knowledge search and utilization by educational practitioners is a fuzzy one.

Knowledge Search and Utilization in Education

The fuzzy image of knowledge search and utilization by educational practitioners is due to the variety of populations studied under the umbrella description of educational practitioners. Fullan (1981:214) explains this fuzzy image of knowledge search and utilization by educational practitioners:

> ...sometimes research on KU consists of examining individualistic users while at other times groups of users are involved. Thus, the causal factors related to KU could differ in a number of respects, depending on which of these two instances are at hand.

Using different terms to describe their study audiences, many authors have highlighted the importance of colleagues and oral communication in knowledge search and utilization in education, while offering varied opinions as to the importance of journals. Rittenhouse (1970:71), studying elementary and secondary school districts, states:

> The tendency, therefore, is for most individuals to make direct and informal contact with friends or others in the field whom they believe to be knowledgeable regarding the area of interest.

Rittenhouse (1970:71-72) goes on to say that:

> For printed media...users prefer operationally oriented information and are less interested in the research findings presented conventionally in many professional journals.

Hood (1979:31-32), describing his study population as "practitioners," supports Rittenhouse in relation to the importance of colleagues when he says:

> ...practitioners and other educational information users require relatively small amounts of information from a large highly diverse body of information. Generally, the local, easily accessible, and typically personal sources are used in preference to more distant, inaccessible or formal sources.

Fernig (1980:12), talking about "educators," agrees with the importance of colleagues; however, he introduces the news media as an important source of information when he states:

> Educators tend to obtain much, if not most, of their information directly from colleagues... also appear to make a great deal of use of the media--the daily press, radio, and television.

Fry (1972), in the Evaluation Study of ERIC Products and Services: Volume I of IV. Final Report, reverses the order of importance of "users" channels for obtaining information. Fry lists journal articles first and oral communication second in importance. The importance of oral communication and journal articles in the area of knowledge search and utilization in education is affirmed by Hendrick (1970:219), generally and in a specific sense, when he reports that:

> . Word of mouth techniques were by far the most popular sources of knowledge, followed by 'other professional journals.' Research publications and bulletins were found to be least useful by a healthy margin...the overwhelming impact of these findings is the preference for talking and listening rather than for reading, and that in the choice of reading materials, ERIC and AERA publications ranked at the bottom of the R&D best seller list.

A number of authors have used different segments of the overall population of educators and offer a wide range of findings in relation to knowledge search and utilization in education. Havelock (1973:82), in a survey of five hundred superintendents to discover linkage patterns in school district innovations, reports the following findings:

- external sources are less used than internal sources
- teacher participation/training predominates as the most widely used inside sources
- large districts (80,000 or more) make greater use of specialists in curriculum/research as well as media centers and libraries
- federal sources in aggregate are the leading outside source, but no one federal source is as important as the state agency or university.

Pastre (1968) and Orlich (1975) studied elementary school principals. Pastre (1968), in an investigation about the sources and channels of information which elementary principals perceive to be most effective at each stage of an adoption of innovation continuum, reported that elementary principals rely on generalized processes of communication in the early stages of the continuum but depend almost entirely on specific interpersonal relations at the final stages of the continuum. Orlich (1975) found that elementary principals consider curriculum coordinators and other district resources, professional literature and conferences and workshops especially those of the National Science Foundation to be good sources of information. However, publishers were the most frequently mentioned best sources of information.

Using a combined study population of superintendents, assistant superintendents, district staff, principals, vice-principals, and teachers, Chorness, Rittenhouse and Heald (1968) reported that sources of information most frequently used were: (1) colleagues in the same school system, (2) principals and vice-principals, (3) professional meetings, (4) curriculum specialists, and (5) school district superintendents and assistant superintendents. Chorness, Rittenhouse and Heald (1968:49-50) go on to describe the general pattern of knowledge search and utilization for educators in general when they state:

> The pattern here is quite clear. Sources close to home and, therefore, presumably readily available, predominate. Further, all of the first five in frequency of use involve person-to-person contact.

Douglas A. Paul (1977:42) in "Change Processes at the Elementary, Secondary, and Post Secondary Levels of Education" reaffirms and explains the general pattern of using sources of information which are close to home and involve person-to-person contact found in education.

> Face-to-face interaction and two-way communication are a most effective mode of conveying information. Face-to-face interaction allows mutual needs to be determined, messages to be adjusted according to reactions, and mutual influence to occur. These are characteristics of two-way communication and they are absent from alternative modes of communication such as print media. Encouragement and support may be stimulated and nurtured through face-to-face interaction.

The literature which refers to "teachers" in relation to knowledge search and utilization in education confirms the importance of sources of information which can be described as readily available and offering the use of two-way communication. Sieber (1981:157) says, "Despite the common image of teachers as being incommunicado from one another and shunning the discussion of problems, there is a good deal of information sharing." Fullan (1981:220) strengthens this general picture of the importance of colleagues as a source of information for teachers when he states: "...peer dialogue and collegiality (frequent meetings, discussions, support) among teachers is positively related to Knowledge Utilization." Magisos (1971) and Brittain (1971) add to the evidence supporting the importance of colleagues and two-way forms of communication for teachers. Magisos (1971), in a study using 1072 teachers as the study population, reported that 76.2 percent of those surveyed indicated that they used fellow workers as the most frequent sources of information. In contrast only 49.5 percent used colleagues in other

organizations and even fewer, 32.5 percent, used information service personnel. Brittain (1971:23) states that:

> The majority of communications that took place between school teachers and other sections of the community were through informal channels, and this was also the case of communications amongst school teachers themselves. School teachers received some information through the mass media...but rarely if ever through the literature of education and the social sciences.

The importance of colleagues and two-way forms of communication to teachers as a means of knowledge search and utilization appears to transcend even international boundaries. Fernig (1980), referring to a study in which Kristiansen used a population of Norwegian teachers, indicates that teachers made wide use of more personal sources of information and that information from central school authorities reaches more than half of the teaching staff only through intermediaries. Aoki (1977), in a study of social science teachers in British Columbia, found that fellow teachers, as a group, were rated highest (4.01 on a 5 point scale) in terms of their helpfulness. District staff were rated as moderately helpful (2.94), while department of education, teacher union personnel and university consultants were rated low (1.56 to 2.54). Kornos and Enns (1979), studying Canadian teachers, also indicated that fellow teachers were the most preferred source of help.

The importance of colleagues and professional literature is mentioned by Oelschlager (1980) in his study of teachers in rural Kansas schools and also by Reid (1969) in his study of elementary school teachers. Referring to teachers in general, Boyd (1978) mentions an

apparently often overlooked group of publications as a source of information for educators. Boyd (1978:602) states:

> Although there is no thorough research on the topic, there is every reason to believe that the textbook industry dominates the teachers' field of choice...in the U.S....

Paul Hood et al. (1976:IV-22) succinctly summarized what has been said concerning teachers as a whole with regard to knowledge search and utilization.

> This group makes frequent use of textbooks and reference books, notes and files in own office, curriculum materials, face-to-face discussions with people in own organization, and compared to other users, teachers are relatively more frequent users of personal library, own organization library, and other libraries. Relative to other audiences teachers are less frequent users of: technical reports and government publications, telephone calls--own organization, other organizations; face-to-face discussions with people in other organizations and memos and correspondence.

In one of the few reports referring specifically to high school teachers, Hood and Hayes (1967) reinforce the importance of colleagues in knowledge search and utililization. However, the ordering of the sources used by high school teachers indicates that they might represent a unique group within the larger population of educators. Hood and Hayes (1967) indicated that for high school teachers the four highest used sources in rank order were: (1) public media, (2) informal contacts, (3) professional journals, and (4) research reports and bulletins.

If one is looking to give an all-encompassing description to the knowledge search and utilization pattern of teachers, one might combine

the observations of Hood (1979) and Fernig (1980). Hood (1979:34) states:

> Most of the information is locally based and informal in character. When individuals do search beyond personal and local sources for information they really need, they tend to use more than one source.

However, as Fernig (1980:13) indicates:

> The extent to which the needs of different user groups are met by documentation and information sources seems to vary and the existing studies do not give a consistent view of the matter.

Benson (1973:15) points to this lack of consistency in educational information services as a major flaw in the education enterprises by stating:

> Education is one of the largest businesses in the United States, yet unlike major, successful businesses, it lacks adequate market research, product quality control and assessment, and an adequate planning process. All of these inadequacies which have lead to the rise of serious questions regarding resource allocations for education can be traced to one single, basic oversight--the lack of a comprehensive educational information system.

The Educational Resources Information Center

One particular system, the Educational Resources Information Center (ERIC) intended to meet this need, has not reached all segments of the education population. The lack of success of the ERIC system can be traced to its development based upon its original purpose. Trester (1979:10) indicates the original purpose of ERIC:

> It will be able to furnish information to individuals engaged in pure research. And it will also be able to furnish information to individuals who are charged with the task of establishing and presenting guidelines for application in teaching and administration.

With this original lack of targeting of the teacher it is no wonder that few teachers have made use of the ERIC system in the past. Using a population of 1072 teachers, Magisos (1971) indicated that only 21.7 percent of his population were even familiar with the ERIC system.

Fry (1972), in an Evaluation Study of ERIC Products and Services Summary Volume. Final Report, specifies that of a population of 99 teachers who indicated using the ERIC system, only 19.2 percent were secondary school teachers.

ERIC has become a mature information analysis system. However, it has concentrated primarily on the report literature and has targeted the research and scholarly community. Steiger succinctly states ERIC's orientation from the practitioner point of view (1975:12):

> ...ERIC has a disappointingly small collection of practitioner-oriented documents. Teachers, supervisors, administrators and curriculum developers seeking practical information to assist them in improving instruction require 'how to' documents rather than theoretical papers. The ERIC system was not originally established to meet this need, and would require a considerable addition of documents concerning educational products, programs and practices to serve as a comprehensive resource for practitioners.

ERIC's greatest challenge in the future will be in making all potential users aware of its materials and how to provide access to those materials for all those individuals who want to use them.

In order to improve access to education information sources, such as the ERIC materials, individuals in charge of such systems must become aware of characteristics of information sources classroom teachers consider desirable. In addition, it is vital to the future success of informational systems, such as the ERIC system, to be aware of those reasons for which teachers most often utilize a source of information. The tendency among teachers to prefer colleagues and other two-way means of communication to receive new information is probably best explained by Seiber (1981:116-117) when he states:

> This tendency is commonly attributed to sheer convenience of local resources or to ignorance of external ones. Equally, or more important, however, might be the functioning of reaffirming social bonds within the local work group, and in particular the norms of autonomy and self-sufficiency in the planning and implementation of new innovative schools, school personnel tend to prefer local sources of information and assistance. It is also probable that referral of a professional problem to an external agency is an admission of failure to nonpracticing experts, who invariably occupy higher status in the profession. Thus the offer of external resources and expertise might pose a disincentive for knowledge utilization.

Characteristics Considered Important in a Source of Information

Whatever the social or psychological reasons behind the use of colleagues and other two-way means of communication by teachers, there is adequate research to indicate that certain characteristics are considered desirable in a source of information. Seiber (1981:128) states the basic situation well when he says "...relevance might be regarded as the basic prerequisite for ultimate use of information." Studies done by Magisos (1971), Hood (1979) and Hood et al. (1976), agree with

the statement offered by Seiber. Using a population of 1072 teachers, Magisos (1971:28) offers the following table as an assessment of the importance of characteristics in a source of information.

Relevance to problem	61.7%
Speed of obtaining	47.7%
Currentness	47.7%
Brevity	29.4%
Ease in identifying	27.1%
Authenticity	22.5%
Comprehensiveness	22.4%
Cost of obtaining	21.4%
Detail	10.7%
Physical form	3.1%

Hood states (1979:32):

> Regardless of the source preferred, most are likely to turn to this source because it is: 1) likely to have the wanted information, 2) near at hand or accessible, 3) responsive to the individual's problem or question, 4) easy to use, 5) usually available when needed.

In another study Hood and Hayes (1967) found that "ease of access to the information," "currency of the information," and "comprehensive coverage" were listed as the characteristics of a source of information considered most important. It would seem to be apparent that, in choosing a source of information other than colleagues and other than two-way means of communication, teachers prefer sources that are: relevant, easily accessible, near at hand and easy to use. These characteristics might seem most desirable because teachers have so little time available and because of their limited training in information search and retrieval.

Reasons Why Teachers Need Information

The field of education is comprised of many different roles: teachers, principals, superintendents, curriculum supervisors, guidance personnel, etc. It only makes common sense that each of these various roles would have different reasons for requiring information. Hood (1979:32) summarizes reasons for needing information found in education:

> There are perhaps as many as eight very general clusters of purposes for seeking educational information. These are: 1) to improve one's own work by keeping aware of what others are doing, 2) to identify new sources of assistance or new competencies, 3) to evaluate or make specific decisions about educational practices or products, 4) to make or set educational policy, 5) to find answers, support decisions, or develop alternatives, 6) to support scholarship, 7) to teach and maintain instructional competence, 8) to provide information to others.

However, when we look just at the teacher segment of the education population, as we might expect, the scope of the reasons for needing information somewhat narrows. Mick, Paisley and Paisley (1972:15) offer the following list of reasons for needing information compiled from questioning 2244 teachers:

> ...teaching techniques, motivation, curriculum planning and development, testing and assessment, reading, teacher-student relations, grading, early childhood education, learning and mathematics.

As we narrow the field of educators even further, it might be interesting to note that certain types of teachers (secondary, elementary, early childhood, special needs, etc.) express even more specific needs for requiring information. Berman (1981:279) points to this possible difference by stating:

> ...it may be that educational change occurs so differently in elementary schools as compared to secondary schools (particularly in urban areas) that essentially different theories are needed.

In relation to secondary school teachers, Mann (1976:329) states: "High school teachers relate to their topical fields more than to an over-all schooling mission." This subject matter orientation would naturally lead secondary school teachers to sources of information which stress subject matter rather than methodology presentations.

The Effects of Demographic Variables

Adding to the perplexing and often times confusing picture of knowledge search and utilization in education is the situation created by looking at effects created by various demographic variables. Louis (1977) reported that typical demographic variables such as age, career history and professional status were not related to information utilization. And Brickley and Trohoski (1974) found that neither format of presentation nor information topic can be used to indicate distribution in relation to the various subpopulations of educators (teachers, administrators and counselors). However, on the other hand, Corwin (1975) indicated that the tendency to embrace new programs was related to the demographics of educational background, the proportion of male teachers in a population and the amount of experience an individual possesses.

Producing an accurate picture of knowledge search and utilization in education has thus far proven to be a difficult and confusing task. The various subpopulations among the large population of educators and

their various characteristics appear to have produced the greatest stumbling block to producing an accurate picture. The various reasons for needing information, characteristics considered desirable in a source of information and the various demographics used across the numerous studies conducted have added to the larger yet somewhat fuzzy picture of knowledge search and utilization in education. Hull, Magisos and Singer (1978:7) have stated the present situation accurately:

> At present, no reliable means exists, for sensing the dissemination needs of local practitioners nationwide. Nor is enough known about how to communicate with local practitioners in ways which heighten the significance of national priorities in relation to their own priorities and ongoing practice.

Hull, Magisos and Singer go on to say:

> The problem of poor access to educational products, information and practices for professional educators...needs careful study. Some practitioners desire information but lack ready access to it. Others do not value accessible information and hence do not seek it. Further, there seems to be limited relevance of much educational to the needs of teachers for help with their instructional problems...insufficient access to relevant, applicable information and products seems to result in failure to use knowledge derived from R&D and outstanding practice.

And Thayer (1982:23) accurately states the need for further study by stating:

> Much more needs to be learned about knowledge user capacities, knowledge transformation activities, and organizational influences on knowledge user acquisition and utilization characteristics.

If a clear picture of knowledge search and utilization in education is going to become a reality, studies utilizing specifically and

narrowly defined populations need to be designed, carried out and replicated. This study was designed with such a specific need in mind. The present study utilizes a population composed of urban public secondary school teachers.

The research literature concentrates on the specific types of information education practitioners use in connection with their daily activities. Reasons for needing information and the characteristics associated with a source of information are two additional areas frequently researched in connection to knowledge search and utilization in education. Therefore, the present study was designed around these same general concerns. However, the specific objectives were to examine how members of the study population felt about various types of sources of information presently available to them, rather than to determine how frequently the sources are utilized.

In order to parallel the research reported to date, the effects of various demographic variables on the assessments of types of sources of information were examined. In addition, the assessments of the study population toward the ERIC system were examined to determine if the view of ERIC offered in the 70's had carried over into the 80's.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this chapter is to present the research procedures used in this study. The chapter is divided into four sections: the population, the instrumentation, the data collection and analysis.

The Population

The study population consisted of approximately four hundred urban public secondary school teachers from six different high schools in the western section of Massachusetts, who were employed during the 1982-83 school year. Two hundred sixty-two members of the population, or 66 percent, returned questionnaires. Of the 262 returned questionnaires, 245 were usable. The seventeen questionnaires considered unusable were disqualified for the following reasons: five were completed by guidance counselors (guidance counselors were not intended to be a part of the study population); three were returned with incomplete demographic data sheets; and nine had incorrectly filled out page seven of the questionnaire. The 245 usable questionnaires represented 61 percent of the original population.

Instrumentation

This study used a questionnaire adapted from an original questionnaire used by Paul Hood et al. in a Study of Information Requirements

in Education, Vol. II: A Mail Survey of User Information Requirements, and a demographic data sheet. Each subject was requested to complete both of these instruments.

The Questionnaire

The original study conducted by Hood (1976) was a two-stage effort, consisting of field interviews and an extensive mail survey. One intent of the field interviews was to develop an indepth understanding of user information. The field interviews were conducted with a stratified sample of 137 persons, representing eighteen different educational roles, and located in over forty communities throughout the United States. The questionnaire, which was based upon the interview data, was modified to meet the needs of the six different populations sampled.

The instrument used in this study is an adaptation of the original form intended for use by classroom teachers. Four basic adaptations were made in the original questionnaire: first, the format for recording answers was changed; second, the amount of information requested from the respondent was reduced; third, sources of information were added or expanded upon to more accurately fit the purposes of this study; fourth, the questionnaire has been modified to measure the assessments of urban public secondary school teachers with regard to sources of information they might use in connection with their work activities rather than to measure how often a source of information is utilized.

The finalized form of the survey instrument evolved after a series of revisions during which five teachers from the study population evaluated the various changes and offered suggestions with regard to: the meaning of words, the wording of various items, the validity of grouping items into specific subcategories and the clarity and ease of directions. The questionnaire was then field tested. Fifteen teachers from the study population completed the questionnaire on two separate occasions. The test group first completed the questionnaire during the week of February 14 - February 18, 1983 and then again during the week of March 21 - March 25, 1983. The test-retest data yielded coefficients of correlation for the four week interval ranging from a low of .81 on the items categorized as local and impersonal sources of information to a high of .97 on the items categorized as personal sources of information. Item analysis yielded coefficients alpha ranging from a low of .64 for the items categorized as cosmopolite and impersonal sources of information to a high of .85 for the items categorized as local sources of information. Based upon the coefficients of correlation and the coefficients alpha, the reliability, stability and internal consistency of the survey instrument were considered satisfactory for the purposes of this study.

The survey instrument used in this study has been subdivided into four parts. The first part is composed of a list of thirty-three sources of information. The respondent is to evaluate each source of information by placing a check mark along a continuum which is divided into seven sections ranging from very important to not very important. Part two of the instrument is composed of a list of eight reasons why a

secondary school teacher might need information. Again, the respondent is to evaluate each need by placing a check mark along a continuum which is divided into seven sections ranging from great need to little need. Two blank continuum arrangements are offered to allow the respondent the opportunity to list his/her own specific reasons for needing information. The third section of the questionnaire is composed of two lists of characteristics associated with sources of information. The first list deals with the nature of a source of information and the second list deals with the content of the information offered by the source. The five characteristics in each list are to be ranked from 1 to 5, 1 being the most important characteristic and 5 being the least important characteristic. Finally, a set of "open-ended" questions, designed to offer respondents the opportunity to express opinions or expand on thoughts not possible in the first three sections of the questionnaire, is presented in section four. It was estimated that the questionnaire should take approximately twenty minutes to complete.

Demographic Data Sheet

The demographic data sheet was designed with two purposes in mind. The demographics of age, sex, amount of formal training, number of years as a secondary school teacher and major teaching subject area were utilized to subdivide the population in order to describe differences in assessments of the importance of types of sources of information in relation to work activities. These variables also helped to describe the sample population of this study for future replication.

Data Collection

Permission to distribute the questionnaire was obtained either from the superintendent or the assistant superintendent of the school systems involved in the study. The principal of each high school involved was given a copy of the survey instrument and either during a personal interview or by means of a telephone conversation with the researcher learned of the purpose of the study and various aspects of the questionnaire.

One faculty member from each of the schools involved with the study agreed to serve as a distributor/collector for his/her particular school. The questionnaire along with cover letters were initially distributed during the week of March 28, 1983. Over the next three weeks additional questionnaires were given to the distributor/collectors as they were requested. The researcher collected the returned questionnaires on a periodic basis over the three week period from March 28 to April 15, 1983. Distribution and collection of the questionnaires was halted on April 15, 1983.

Data Analysis

The responses to the demographic data sheet and to the survey instrument were coded and transferred to a computer coding sheet. From the computer coding sheet the data was entered directly into the computer. All calculations were completed by the University of Massachusetts Computing Center which utilized the Statistical Package for the Social Sciences (SPSS).

The first two sections of the survey instrument were coded so that a positive response would receive the highest numerical value. In section one, a response of very important was coded as a 7 and a response of not very important was coded as a 1. Responses in between very important and not very important were coded from 6 to 2 accordingly. For section two a response of great need was coded as a 7 while a response of little need was coded as a 1. Responses in between great need and little need were coded from 6 to 2 accordingly. For section three the order in which the items were ranked was transferred directly onto the coding sheets and then to the computer. Responses to the "open-ended" items from page eight of the questionnaire were collated and reported on an item by item basis.

Data for the study was analyzed in relation to demographic variables (i.e., age, training, experience, etc.) of the study population. Analysis of variance and calculations of central tendency were utilized where appropriate. Mean scores were used to compare the different subgroups of the population in relation to their assessments of the sources of information, their need for information and characteristics they considered important in a source of information. Analysis of variance was used to test the significance of mean differences among the groups investigated. The level of significance was set at 0.05.

First, tables are presented which express the mean scores generated for each of the demographic variables across the eight categories of types of sources of information. Next are described patterns produced by the various demographic variables for each of the categories

of types of sources of information. Then, a table of mean scores and standard deviations generated by the questionnaire section dealing with reasons for needing information is presented and discussed. Also in table format, the rank orders and mean scores for the set of characteristics describing the contents of a source of information and for the set of characteristics describing the nature of a source of information are presented and discussed.

The nine individual sources of information producing the highest mean scores and the nine individual sources of information producing the lowest mean scores are listed. These two lists are then compared to determine if any additional patterns exist in the assessments offered by urban public secondary school teachers of the sources of information. The specific demographic variables associated with the highest mean scores for each category of types of sources of information are presented. Any patterns or profiles of special interest produced by these demographic variables are followed up.

Responses to page 8, the "open-ended" items of the questionnaire, have been collated and are presented in descriptive rather than in statistical format. Because of their individual natures each of the "open-ended" items is treated separately. Salient comments, explanations and descriptions are presented and, where appropriate, percentages indicating rates of response are offered.

CHAPTER IV

PRESENTATION AND INTERPRETATION OF DATA

Introduction

This chapter will present, describe and analyze the data collected for this study. The chapter, containing four sections, will describe the population surveyed; the treatment of the data; the presentation and analysis of the data; and a discussion.

The Population of the Study

The data presented in this chapter represent a collation of responses from 245 urban public secondary school teachers from six different high schools in the western section of Massachusetts. The 245 completed questionnaires represent 61 percent of the population of 400 teachers in the six different high schools. The decision to treat the population as a whole rather than separately by schools was made after comparing the total scores generated by the questionnaire across the six different schools. The analysis of variance test produced an F level of .92354 which is not a significant difference at the .05 level. Therefore, the decision to treat the population as a whole was considered justifiable.

Table 1 presents the demographic profile of the respondents. Sixty percent or 147 of the 245 participants in the study were male, while 40 percent or 98 of the participants were female. The single largest group by age were those people in the 31 to 40 age category which

Table 1

DEMOGRAPHIC PROFILE OF RESPONDENTS (N=245)

Sex*	Number	Percent
Female	98	40%
Male	147	60%
Total	245	100%
Age		
30 or under	12	4.9%
31 to 40	89	36.3%
41 to 50	65	26.5%
51 to 60	68	27.8%
61 or older	11	4.5%
Total	245	100%
Amount of Formal Training		
Bachelor's Degree	51	20.8%
Master's Degree	99	40.4%
Master's Degree & 30 Hours	45	18.4%
Certificate of Advanced Graduate Study	33	13.5%
Master's Degree & 60 Hours	13	5.3%
Ph.D./Ed.D.	4	1.6%
Total	245	100%
Number of Years of Experience		
Under 6 years	16	6.5%
6-10 years	24	9.8%
11-15 years	76	31.0%
16-20 years	58	23.7%
21 years or more	71	29.0%
Total	245	100%

*The male/female breakdown of the individual schools corresponds to the breakdown for the total population.

Table 1 (continued)

Major Subject Teaching Area	Number	Percent
Art	6	2.4%
Business	27	11.0%
English	43	17.6%
Foreign Language	23	9.4%
Home Economics	8	3.3%
Industrial Arts	5	2.0%
Mathematics	36	14.7%
Music	3	1.2%
Physical Education	10	4.1%
Science	38	15.5%
Social Studies	29	11.8%
Other	17	6.9%
Total	245	100%

composed 36.3% of the study population. A total of 205 of the respondents, or 83.7 percent of the population, had eleven or more years of experience at the secondary level. This coupled with the fact that 90.6 percent, or 222 of the respondents, are between ages 31 and 60 helps to describe a relatively stable and experienced population. The largest number of respondents, 99, or 40.4 percent of the population, earned a masters's degree. Only 1.6 percent of the population, or four respondents, hold a Ph.D. or Ed.D. degree, while 20.8 percent of the population, or 51 respondents, hold a bachelor's degree. Distribution of the population by subject matter taught conforms to what one might find in a typical high school setting. The bulk of the population,

80 percent of the respondents, are listed as teaching one of the six "major" subjects: English, science, mathematics, social studies, business subjects and foreign language. The often referred to "minor" subjects: art, physical education, home economics, industrial arts and music, compose 13 percent of the population; whereas 6.9 percent or seventeen people classified themselves as "other." Included in the category "other" were the following titles: special education/bilingual, special education, reading, English as a second language, special needs, moderate needs and remedial reading. In order not to create a large number of categories each with a small number of people, all respondents that listed themselves as "other" were grouped into one category for statistical purposes.

Treatment of the Data

In order to compare the different subgroups (sex, age, etc.) within the population by the different types of sources of information, eight categories of sources of information were established from the thirty-three sources of information offered in section one of the questionnaire. There were four singular categories and four combined categories of types of sources of information investigated. The four singular categories of types of sources of information were: local sources of information, cosmopolite sources of information, personal sources of information, and impersonal sources of information. The four combined categories of types of sources of information were: local and personal sources of information, local and impersonal sources of information,

cosmopolite and personal sources of information, and cosmopolite and impersonal sources of information. Each of the eight categories of sources of information was established by grouping items with similar characteristics from section one of the questionnaire. The eight various categories of sources of information are presented in appendices D - K. Each of the categories of sources of information was compared across the various demographics (sex, age, etc.) using mean scores for the total number of items in each category. Analysis of variance was used to test the significance of mean differences among the groups investigated.

The total population mean scores for the individual items from section one of the questionnaire were examined and compared to ascertain if characteristics other than localite, cosmopolite, personal, and impersonal could be identified as being important in regard to the assessments of sources of information offered by urban public secondary school teachers.

Sections two and three of the questionnaire were also analyzed across the total population using mean scores to determine which reasons for needing information were most important and which characteristics associated with a source of information were considered most desirable. The four open-ended items from page 8 were presented and analyzed individually. Because of the individual nature of the responses offered by each respondent, the responses were collated and presented in a descriptive rather than a statistical fashion.

Data Presentation and Analysis

This section presents and analyzes the data for the sources of information from section one of the questionnaire grouped into the following eight categories: local sources of information, cosmopolite sources of information, personal sources of information, impersonal sources of information, local and personal sources of information, local and impersonal sources of information, cosmopolite and personal sources of information, and cosmopolite and impersonal sources of information. Each category of types of sources of information is analyzed using the various demographics of sex, age, amount of formal training, number of years of teaching experience, and specific subject matter taught. Data from specific items from section one of the questionnaire are presented in order to clarify assessments of urban public secondary school teachers in regard to types of sources of information. Next the data from section two of the questionnaire, reasons for needing information, are presented and analyzed. Then, the data for section three, characteristics associated with a source of information, are presented and analyzed. Finally, the responses to the open-ended items are presented and analyzed.

The Demographic Variables

Sex. Tables 2-9 present the means, standard deviations and analysis of variance data for the demographic variable sex across the eight categories of types of sources of information. In each of the four singular categories females have a higher mean score than do the males. Statistically significant differences are produced in the two singular

Table 2

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCALITE BY SEX

Group	N	X	SD
Female	65	65.15	13.54
Male	94	59.75	12.83
Total	159	61.96	13.12

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	1	1119.939	1119.939	6.503*
Within Groups	157	27039.834	172.228	
Total	158	28159.774		

*$p < 0.05$ significance level

Table 3

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE BY SEX

Group	N	$\overline{X}$	SD
Female	45	95.20	17.82
Male	47	88.55	19.83
Total	92	91.80	19.07

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	1	1015.661	1015.661	2.850
Within Groups	90	32072.817	356.364	
Total	91	33088.478		

Table 4

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS PERSONAL BY SEX

Group	N	X	SD
Female	64	69.15	17.16
Male	85	62.62	16.64
Total	149	65.42	17.12

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	1	1558.119	1558.119	5.478*
Within Groups	147	41810.390	284.424	
Total	148	43368.510		

*$p < 0.05$ significance level

Table 5

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS IMPERSONAL BY SEX

Group	N	$\bar{X}$	SD
Female	46	88.32	15.554
Male	52	83.94	15.779
Total	98	86.00	15.747

Analysis of Variance Table

Source	df			
Between Groups	1	469.064	469.064	1.909
Within Groups	96	23584.935	245.676	
Total	97	24054.000		

Table 6

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND PERSONAL BY SEX

Group	N	X	SD
Female	71	29.77	6.80
Male	109	27.45	6.91
Total	180	28.37	6.94

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	1	232.433	232.433	4.927*
Within Groups	178	8397.367	47.176	
Total	179	8629.800		

*$p < 0.05$ significance level

Table 7

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND IMPERSONAL BY SEX

Group	N	$\bar{X}$	SD
Female	74	30.41	7.09
Male	111	29.03	6.15
Total	185	29.58	6.56

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	1	84.357	84.357	1.971
Within Groups	183	7832.757	42.801	
Total	184	7917.114		

Table 8

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND PERSONAL BY SEX

Group	N	$\bar{X}$	SD
Female	68	44.47	13.39
Male	85	40.41	13.22
Total	153	42.22	13.41

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	1	622.353	622.353	3.519
Within Groups	151	26701.529	176.831	
Total	152	27323.882		

Table 9

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND IMPERSONAL BY SEX

Group	N	$\overline{X}$	SD
Female	48	52.69	9.86
Male	56	50.88	10.24
Total	104	51.71	10.06

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	1	84.909	84.909	.838
Within Groups	102	10338.438	101.357	
Total	103	10423.346		

categories of local sources of information and personal sources of information. In the four categories of types of information in which characteristics are combined, females again have higher mean scores in each case than do the males. Local and personal sources of information is the one combined category in which a statistically significant difference is recorded between males and females.

Age. Means, standard deviations and analysis of variance data for the demographic variable age across the various categories of types of sources of information are presented in Tables 10-17. Although there are no statistically significant differences recorded in either the four singular categories of types of sources of information or in the four combined categories of types of sources of information, there are some interesting observations to be made. The two age groups, 31-40 and 41-50, each have the highest mean scores for four of the eight categories of types of sources of information. The 31-40 age group has the highest mean scores in the singular categories of local sources of information and personal sources of information. In the combined categories of types of sources of information, the 31-40 age group has the highest mean scores for sources described as both local and personal and for sources described as cosmopolite and personal. The age group 41-50 scores the highest means for the singular categories, cosmopolite sources of information and impersonal sources of information. In the combined categories of types of sources of information the 41-50 age group has the highest means for the categories local and impersonal sources of information and cosmopolite and impersonal sources of information. On the two extremes of the age spectrum the emphasis on

Table 10

MEANS, STANDARD DEVIATIONS AND ANALYIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCALITE BY AGE

Group	N	$\bar{X}$	SD
Under 30	7	61.57	5.442
31-40	50	63.40	12.947
41-50	46	63.13	13.796
51-60	49	60.94	13.248
61 or older	7	51.57	17.338
Total	159	61.96	13.350

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	974.311	243.577	1.380
Within Groups	154	27185.462	176.529	
Total	158	28159.774		

Table 11

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE BY AGE

Group	N	$\bar{X}$	SD
Under 30	4	83.000	4.546
31-40	26	89.75	17.721
41-50	29	97.76	19.210
51-60	29	88.89	20.224
61 or older	4	92.00	23.768
Total	92	91.80	19.068

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	1695.362	423.840	1.175
Within Groups	87	31393.115	360.840	
Total	91	33088.478		

Table 12

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLES FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS PERSONAL BY AGE

Group	N	$\bar{X}$	SD
Under 30	6	64.50	7.092
31-40	43	69.26	16.962
41-50	45	66.20	16.508
51-60	49	62.31	18.128
61 or older	6	58.67	19.252
Total	149	65.43	

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	1413.883	353.471	1.213
Within Groups	144	41954.628	291.352	
Total	148	43368.510		

Table 13

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS IMPERSONAL BY AGE

Group	N	$\bar{X}$	SD
Under 30	5	81.80	17.796
31-40	32	83.47	13.678
41-50	30	90.97	16.589
51-60	27	84.52	16.298
61 or older	4	84.25	18.209
Total	98	86.00	15.747

Analysis of Variance Table

Source	df	SS	MS	
Between Groups	4	1104.774	276.194	1.119
Within Groups	93	22949.226	246.766	
Total	97	24054.000		

Table 14

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND PERSONAL BY AGE

Group	N	$\overline{X}$	SD
Under 30	7	26.71	5.31
31-40	60	29.72	5.94
41-50	51	28.09	7.67
51-60	55	28.09	6.96
61 or older	7	22.57	8.62
Total	180	28.37	6.94

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	371.418	92.854	1.968
Within Groups	175	8258.381	47.190	
Total	179	8629.800		

Table 15

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND IMPERSONAL BY AGE

Group	N	$\overline{X}$	SD
Under 30	10	27.90	8.034
31-40	64	29.75	6.081
41-50	50	30.50	6.331
51-60	53	29.34	6.699
61 or older	8	26.13	8.757
Total	185	29.58	6.559

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	170.951	42.737	.993
Within Groups	180	7746.161	43.034	
Total	184	7917.113		

Table 16

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND PERSONAL BY AGE

Group	N	$\overline{X}$	SD
Under 30	7	42.71	7.181
31-40	45	44.11	13.331
41-50	46	43.19	13.232
51-60	48	39.18	14.026
61 or older	7	43.86	15.279
Total	153	42.2157	13.407

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	666.601	166.650	.925
Within Groups	148	26657.281	180.112	
Total	152	27323.882		

Table 17

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND IMPERSONAL BY AGE

Group	N	$\bar{X}$	SD
Under 30	5	49.00	10.770
31-40	33	50.21	9.002
41-50	32	55.19	10.387
51-60	30	49.97	10.176
61 or older	4	52.75	11.898
Total	104	51.72	10.060

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	593.239	148.309	1.494
Within Groups	99	9839.107	99.294	
Total	103	10423.346		

the importance of types of sources of information appears to do a flip-flop. The under 30 age group scores low on all categories except the singular categories of local sources of information and personal sources of information. The 61 and over age group scores low on all types of sources of information except the singular categories of cosmopolite sources of information and impersonal sources of information and the combined categories of cosmopolite and personal sources of information and cosmopolite and impersonal sources of information.

Formal Training. Means, standard deviations and analysis of variance data for the demographic variable, amount of formal training, across the eight categories of types of sources of information are presented in Tables 18-25. The demographic variable, amount of formal training, does not appear to offer any specific patterns to help describe the assessments of urban public secondary school teachers toward sources of information. Individuals holding a bachelor's degree show consistently higher mean scores across the eight categories of types of sources of information than any of the other five groups based on amount of formal training. The holders of bachelor's degrees score the highest mean scores for the singular category, personal sources of information, and for the combined category, local and impersonal sources of information. However, for the remaining six categories of types of sources of information, the holders of bachelor's degrees score the second highest mean scores for the singular category local sources of information and for the combined category cosmopolite and personal sources of information, and then only the third highest mean score for the last four categories of types of sources of information. As the

Table 18

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCALITE BY TRAINING

Group	N	$\bar{X}$	SD
Bachelor's Degree	30	62.36	13.598
Master's Degree	66	62.80	14.239
Master's Degree & 30 Hours	27	60.85	6.520
Certificate of Advanced Graduate Study	24	60.96	13.630
Master's Degree & 60 Hours	9	61.77	18.164
Ph.D./Ed.D.	3	58.00	26.851
Total	159	61.96	13.350

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	156.446	31.289	.171
Within Groups	153	28003.327	183.028	
Total	158	28159.773		

Table 19

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE BY TRAINING

Group	N	$\bar{X}$	SD
Bachelor's Degree	14	92.00	26.448
Master's Degree	38	90.66	18.518
Master's Degree & 30 Hours	16	94.06	14.364
Certificate of Advanced Graduate Study	16	91.68	18.365
Master's Degree & 60 Hours	5	97.20	21.206
Ph.D./Ed.D.	3	85.00	21.633
Total	92	91.80	19.068

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	416.750	83.350	.219
Within Groups	86	32617.727	379.903	
Total	91	33088.478		

Table 20

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS PERSONAL BY TRAINING

Group	N	$\overline{X}$	SD
Bachelor's Degree	25	67.80	21.579
Master's Degree	64	66.21	16.614
Master's Degree & 30 Hours	27	61.18	12.923
Certificate of Advanced Graduate Study	21	67.28	14.846
Master's Degree & 60 Hours	9	62.11	20.447
Ph.D./Ed.D.	3	64.00	30.512
Total	149	65.43	17.118

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	844.323	168.864	.568
Within Groups	143	42524.186	297.371	
Total	148	43368.510		

Table 21

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS IMPERSONAL BY TRAINING

Group	N	$\bar{X}$	SD
Bachelor's Degree	20	86.80	17.392
Master's Degree	38	84.74	17.401
Master's Degree & 30 Hours	15	87.40	9.854
Certificate of Advanced Graduate Study	17	84.24	14.523
Master's Degree & 60 Hours	5	98.40	13.371
Ph.D./Ed/D/	3	79.00	17.058
Total	98	86.00	15.747

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	1071.572	214.314	.858
Within Groups	92	22982.427	249.809	
Total	97	24054.000		

Table 22

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND PERSONAL BY TRAINING

Group	N	$\bar{X}$	SD
Bachelor's Degree	35	27.77	7.573
Master's Degree	75	29.32	6.439
Master's Degree & 30 Hours	31	28.35	4.715
Certificate of Advanced Graduate Study	25	27.72	7.214
Master's Degree & 60 Hours	11	25.91	10.084
Ph.D./Ed.D.	3	26.00	15.874
Total	180	28.36	6.943

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	174.262	34.852	.717
Within Groups	174	8455.537	48.595	
Total	179	8629.800		

Table 23

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND IMPERSONAL BY TRAINING

Group	N	$\bar{X}$	SD
Bachelor's Degree	37	31.03	6.016
Master's Degree	77	29.53	7.315
Master's Degree & 30 Hours	34	28.76	4.612
Certificate of Advanced Graduate Study	25	28.36	6.903
Master's Degree & 60 Hours	9	31.00	6.801
Ph.D./Ed.D.	3	28.00	9.165
Total	185	29.57	6.559

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	163.094	32.618	.753
Within Groups	179	7754.019	43.318	
Total	184	7917.113		

Table 24

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND PERSONAL BY TRAINING

Group	N	$\bar{X}$	SD
Bachelor's Degree	25	43.92	16.082
Master's Degree	66	42.34	12.659
Master's Degree & 30 Hours	30	38.73	13.681
Certificate of Advanced Graduate Study	21	44.43	12.217
Master's Degree & 60 Hours	8	43.25	12.020
Ph.D./Ed.D.	3	41.66	19.035
Total	153	42.21	13.407

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	549.881	109.976	.604
Within Groups	147	26774.001	182.136	
Total	152	27323.882		

Table 25

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND IMPERSONAL BY TRAINING

Group	N	$\bar{X}$	SD
Bachelor's Degree	21	52.57	12.306
Master's Degree	39	50.15	10.312
Master's Degree & 30 Hours	18	53.22	6.839
Certificate of Advanced Graduate Study	17	51.76	9.826
Master's Degree & 60 Hours	6	56.33	10.726
Ph.D./Ed.D/	3	47.33	7.094
Total	104	51.71	10.059

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	5	336.956	67.391	.655
Within Groups	98	10086.389	102.922	
Total	103	10423.346		

amount of formal training increases, the assessments of the various categories of sources of information fluctuate. Holders of master's degrees assess the singular category, local sources of information and the combined category local and personal sources of information, highest of the eight categories. Holders of a Certificate of Advanced Graduate Study assess the combined category cosmopolite and personal as most important while individuals with a master's degree plus sixty hours of formal training assess the singular categories cosmopolite sources of information and impersonal sources of information and the combined category cosmopolite and impersonal sources of information as the most important, thus suggesting a shift away from local and personal sources of information to cosmopolite and impersonal sources of information. Although only 1.2 percent of the population, or three people, holding a Ph.D. or an Ed.D. degree, responded to the questionnaire, their placement among the other five groups for formal training is surprising. The highest assessment offered by this group is for the singular category personal sources of information, for which they ranked fourth of the six groups. They were consistently last or next to last in their assessments of the remaining seven categories of types of sources of information.

Experience. The means, standard deviations and analysis of variance data for the demographic variable experience (number of years as a secondary school teacher) across the eight categories of types of sources of information are presented in Tables 26-33. With the exception of the demographic variable, sex, the demographic variable,

Table 26

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCALITE BY EXPERIENCE

Group	N	$\overline{X}$	SD
Under 6 years	9	72.33	10.428
6-10 years	13	66.23	13.590
11-15 years	47	62.93	12.580
16-20 years	40	59.82	14.391
21 years or more	50	59.78	12.813
Total	159	61.96	13.350

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	1670.302	417.575	2.428*
Within Groups	154	26489.471	172.009	
Total	158	28159.773		

Table 27

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE BY EXPERIENCE

Group	N	$\bar{X}$	SD
Under 6 years	5	98.40	15.773
6-10 years	5	92.00	13.114
11-15 years	30	96.26	18.807
16-20 years	25	86.92	19.267
21 years or more	27	90.11	20.332
Total	92	91.80	19.068

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	1489.904	372.226	1.025
Within Groups	87	31599.573	363.213	
Total	91	33088.478		

Table 28

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS PERSONAL BY EXPERIENCE

Group	N	$\bar{X}$	SD
Under 6 years	8	76.60	11.892
6-10 years	14	72.07	15.833
11-15 years	41	69.87	16.269
16-20 years	40	61.32	16.828
21 years or more	46	61.17	17.420
Total	149	65.42	17.118

Analysis of Variance Table

Source	df	SS	MS	
Between Groups	4	3829.807	957.451	3.487*
Within Groups	144	39538.702	274.574	
Total	148	43368.510		

*$p < 0.05$ significance level

Table 29

MEANS, STANDARD DEVIATION AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS IMPERSONAL BY EXPERIENCE

Group	N	$\bar{X}$	SD
Under 6 years	7	94.71	13.720
6-10 years	6	85.83	16.797
11-15 years	34	86.79	14.383
16-20 years	25	83.92	17.911
21 years or more	26	84.65	15.846
Total	98	86.00	15.747

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	708.454	177.113	.706
Within Groups	93	23345.545	251.027	7
Total	97	24054.000		

Table 30

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND PERSONAL BY EXPERIENCE

Group	N	$\bar{X}$	SD
Under 6 years	11	32.27	6.018
6-10 years	16	28.81	7.850
11-15 years	55	29.36	6.246
16-20 years	44	26.86	7.340
21 years or more	54	27.64	6.958
Total	180	28.36	6.943

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	352.956	88.239	1.866
Within Groups	175	8276.843	47.296	
Total	179	8629.800		

Table 31

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND IMPERSONAL BY EXPERIENCE

Group	N	$\overline{X}$	SD
Under 6 years	10	32.90	6.154
6-10 years	19	29.78	8.462
11-15 years	59	30.15	5.933
16-20 years	45	29.17	6.520
21 years or more	52	28.55	6.542
Total	185	29.57	6.559

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	192.023	48.005	1.119
Within Groups	180	7725.089	42.917	
Total	184	7917.113		

Table 32

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND PERSONAL BY EXPERIENCE

Group	N	$\bar{X}$	SD
Under 6 years	8	46.62	9.782
6-10 years	16	48.68	10.656
11-15 years	44	45.31	12.591
16-20 years	40	38.50	13.625
21 years or more	45	39.40	14.089
Total	153	42.21	13.407

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	2158.224	539.556	3.173*
Within Groups	148	25165.658	170.038	
Total	152	27323.882		

*$p < 0.05$ significance level

Table 33

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND IMPERSONAL BY EXPERIENCE

Group	N	$\bar{X}$	SD
Under 6 years	7	58.00	9.309
6-10 years	6	49.66	10.500
11-15 years	36	52.63	9.387
16-20 years	28	50.39	9.938
21 years or more	27	50.66	11.076
Total	104	51.71	10.058

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	4	411.028	102.757	1.091
Within Groups	99	10012.317	101.134	
Total	103	10423.346		

experience, offers the clearest pattern of assessments of urban public secondary school teachers with regard to types of sources of information. The group with less than six years of experience offered the highest assessments in seven of the eight categories of types of sources of information. In the case of the eighth category, cosmopolite and personal sources of information, the group with less than six years of experience offered the second highest assessment of the five experience groups. For the two singular categories, local sources of information and personal sources of information, a perfect negative relationship exists with the experience groups. As the number of years of experience increases, the assessments for those two specific categories decreases. For the combined category, local and impersonal sources of information, the negative relationship exists between number of years of experience and the order of assessment with only a slight variation--the experience groups 6-10 years and 11-15 years change places in the order of arrangement. For the singular categories cosmopolite sources of information and impersonal sources of information and for the combined category local and impersonal sources of information the negative relationship between years of experience and assessment of the categories of types of sources of information exists with identical breaks in the pattern. In these three cases the experience groups 6-10 years and 11-15 years change places in the order of arrangement, while the experience groups 16-20 years and 21 years or over also change places. Only the combined category of cosmpolite and impersonal sources of information varies drastically from the negative relationship with years of experience as a secondary school teacher. In this

case the group labeled under six years of experience still assesses the category the highest; whereas the experience group labeled 6-10 years assesses the category lowest, while the group labeled 21 years or more is ranked third in assessing the importance of this category of sources of information. For the demographic variable, experience, the difference in mean scores is considered statistically significant for the singular category personal sources of information and for the combined category cosmopolite and personal sources of information.

Major Teaching Subject Area. Means, standard deviations and analysis of variance data for the demographic variable, major teaching subject area, across the eight categories of types of sources of information are presented in Tables 34-41. The demographic variable, major teaching subject area, like the demographic variable training appears to be a poor characteristic from which to ascertain patterns of assessments in regards to types of sources of information. There are, however, three observations to be made. First, physical education teachers and home economics teachers consistently assess the various categories of types of sources of information highly. Second, social studies teachers consistently assess the various categories of types of sources of information as not being important. Third, and somewhat interesting, the "major" subject area teachers, social studies teachers, business subject teachers, science teachers, and mathematics teachers tend to give the various categories of types of sources of information rather low assessments. And the "minor" subject area teachers, art teachers, home economics teachers, industrial arts

Table 34

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCALITE BY SUBJECT

Group	N	$\bar{X}$	SD
Art	3	74.00	8.717
Business	16	60.50	17.297
English	29	61.10	14.929
Foreign Language	18	63.55	10.650
Home Economics	5	71.40	11.013
Industrial Arts	3	66.00	9.165
Mathematics	19	59.42	9.400
Music	1	59.00	--
Physical Education	8	65.50	15.017
Science	23	60.17	11.085
Social Studies	23	58.17	15.798
Other	11	68.81	10.675
Total	159	61.96	13.293

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	11	2182.562	198.414	1.123
Within Groups	147	25977.210	176.715	
Total	158	28159.773		

Table 35

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE BY SUBJECT

Group	N	$\bar{X}$	SD
Art	2	101.00	21.213
Business	8	86.50	19.712
English	19	92.73	20.373
Foreign Language	11	92.27	20.120
Home Economics	4	108.00	12.832
Industrial Arts	3	99.33	25.423
Mathematics	10	86.80	12.708
Music	--	--	--
Physical Education	4	113.50	8.426
Science	14	89.07	16.093
Social Studies	12	83.33	23.975
Other	5	95.20	10.802

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	10	4788.950	478.895	1.371
Within Groups	81	28299.527	349.376	
Total	91	33088.478		

Table 36

MEANS, STANDARD DEVIATION AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS PERSONAL BY SUBJECT

Group	N	$\bar{X}$	SD
Art	3	79.00	6.082
Business	13	64.69	19.661
English	27	63.22	19.295
Foreign Language	17	65.88	16.661
Home Economics	6	79.66	17.578
Industrial Arts	3	81.00	17.578
Mathematics	21	60.47	12.812
Music	1	55.00	---
Physical Education	5	85.20	8.584
Science	24	61.66	12.946
Social Studies	19	58.57	18.258
Other	10	77.90	11.298
Total	149	65.42	17.118

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	11	8003.073	727.552	2.818
Within Groups	137	35365.436	258.141	
Total	148	43368.510		

Table 37

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS IMPERSONAL BY SUBJECT

Group	N	$\bar{X}$	SD
Art	2	100.50	23.334
Business	9	80.66	18.041
English	22	87.18	15.780
Foreign Language	12	91.00	15.059
Home Economics	3	99.33	4.725
Industrial Arts	2	85.00	28.284
Mathematics	12	79.91	10.663
Music	--	--	--
Physical Education	4	101.00	7.831
Science	12	87.33	12.419
Social Studies	14	78.71	19.761
Other	6	85.00	9.359
Total	98	86.00	15.747

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	10	3657.120	365.712	1.560
Within Groups	87	20396.879	234.446	
Total	97	24054.000		

Table 38

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND PERSONAL BY SUBJECT

Group	N	$\bar{X}$	SD
Art	4	31.25	8.180
Business	17	27.29	7.556
English	31	27.74	8.078
Foreign Language	20	29.00	6.561
Home Economics	7	32.00	6.377
Industrial Arts	4	32.25	6.238
Mathematics	25	27.96	5.419
Music	1	21.00	--
Physical Education	8	32.12	6.401
Science	27	27.18	6.385
Social Studies	23	26.13	7.162
Other	13	31.69	6.485
Total	180	28.36	6.943

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	11	693.548	63.049	1.335
Within Groups	168	7936.251	47.239	
Total	179	8629.800		

Table 39

MEANS, STANDARD DEVIATION AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' AGREEMENTS OF SOURCES OF INFORMATION DESCRIBED AS LOCAL AND IMPERSONAL BY SUBJECT

Group	N	$\bar{X}$	SD
Art	3	34.66	5.507
Business	20	27.60	8.702
English	37	30.21	6.218
Foreign Language	19	31.05	4.971
Home Economics	5	34.40	5.224
Industrial Arts	4	32.00	4.242
Mathematics	23	27.08	6.156
Music	2	36.00	--
Physical Education	9	27.77	7.067
Science	25	29.76	5.539
Social Studies	26	29.07	7.304
Other	12	30.25	6.703
Total	185	29.57	6.559

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	11	619.191	56.290	1.334
Within Groups	173	7297.922	42.184	
Total	184	7917.113		

Table 40

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND PERSONAL BY SUBJECT

Group	N	$\bar{X}$	SD
Art	3	49.00	9.165
Business	14	42.57	13.732
English	27	41.22	15.358
Foreign Language	17	42.00	13.004
Home Economics	6	51.83	12.797
Industrial Arts	4	53.25	9.742
Mathematics	22	38.09	11.876
Music	2	51.50	17.677
Physical Education	5	57.00	6.324
Science	24	39.16	12.338
Social Studies	19	36.94	12.760
Other	10	49.70	9.043
Total	153	42.21	13.407

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	11	4159.504	378.136	2.302
Within Groups	141	23164.377	164.286	
Total	152	27323.882		

Table 41

MEANS, STANDARD DEVIATIONS AND ANALYSIS OF VARIANCE TABLE FOR URBAN PUBLIC SECONDARY SCHOOL TEACHERS' ASSESSMENTS OF SOURCES OF INFORMATION DESCRIBED AS COSMOPOLITE AND IMPERSONAL BY SUBJECT

Group	N	$\bar{X}$	SD
Art	2	59.50	13.435
Business	9	47.44	10.393
English	22	51.81	10.909
Foreign Language	12	53.33	11.235
Home Economics	4	61.00	3.559
Industrial Arts	3	53.00	15.620
Mathematics	12	47.83	5.271
Music	--	--	--
Physical Education	4	63.00	5.416
Science	15	52.93	8.729
Social Studies	15	48.46	11.388
Other	6	50.33	5.278
Total	104	51.71	10.059

Analysis of Variance Table

Source	df	SS	MS	F
Between Groups	10	1549.017	154.901	1.623
Within Groups	93	8874.328	95.422	
Total	103	10423.346		

teachers, music teachers, and physical education teachers tend to give the various categories of types of sources of information high assessments. Physical education teachers give the highest assessments to the singular categories cosmopolite sources of information, personal sources of information and impersonal sources of information and to the combined categories of cosmopolite and personal sources of information and cosmopolite and impersonal sources of information. Home economics teachers rank no lower than third in assessing the eight categories of types of sources of information; and, for the singular categories local sources of information and cosmopolite sources of information and for the combined category of cosmopolite and impersonal sources of information they record the second highest assessment.

When the population is divided into the "major" subject fields and the "minor" subject fields, an interesting observation can be made. No group within the "major" subject area teachers rank higher than fourth in assessing the various categories of types of sources of information. Foreign language teachers, considered a "major" subject area, are ranked fourth for the singular category impersonal sources of information and for the combined category cosmopolite and impersonal sources of information. It is also interesting to note that social studies teachers are either eleventh or twelfth in assessing the various categories except when they are ninth in assessing the combined categories of local and impersonal sources of information and cosmopolite and impersonal sources of information. Statistically, only the mean scores for the singular category personal sources of information and for the combined category

cosmopolite and personal sources of information across the various subject matter areas are considered significant.

Reasons for Needing Information. Section two of the questionnaire was designed to identify, from a selected list, reasons selected urban public secondary school teachers need information. Table 42 presents the means and rank ordering data for section two of the questionnaire across the entire study population. Table 42 is arranged in decreasing order of mean scores. The fact that the reason "Keeping aware of developments in my particular subject area," produced the highest mean score is in keeping with the often stated observation of secondary school teachers that they are subject matter oriented. The item included to measure the felt need for actively seeking out information for the express purpose of sharing with other teachers ranks only seventh among the list of eight reasons. The two reasons, "Keeping abreast of new products, procedures and developments related to secondary education" and "Evaluating educational practices and products" included to measure the felt need for educational information have mean scores which fall slightly better than midway on the evaluation spectrum. However, their relatively large standard deviations indicate a wide variation in the assessments of the need for educational oriented information.

Characteristics of a Source of Information. Section three of the questionnaire was designed to describe those characteristics thought most desirable in a source of information. Tables 43 and 44 present the means and rank order data for section three of the questionnaire

Table 42

MEANS AND STANDARD DEVIATIONS FOR REASONS FOR NEEDING INFORMATION AS INDICATED BY URBAN PUBLIC SECONDARY SCHOOL TEACHERS

Reason	N	$\bar{X}$	SD
Keeping aware of developments in my particular subject area	244	6.082	1.165
Identifying new ways to improve my work	245	5.984	1.123
Finding answers to specific questions arising in my work	244	5.713	1.414
Keeping abreast of new products, procedures and developments related to secondary education	243	5.041	1.849
Identifying people who have expertise in a subject or problem area	243	4.856	1.798
Evaluating educational practices and products	244	4.537	1.932
Locating information to share with other teachers	245	4.510	1.792
Preparing reports, articles, and speeches	244	3.107	1.926

Table 43

RANK ORDER AND MEAN SCORES FOR CHARACTERISTICS DESCRIBING THE CONTENTS OF A SOURCE OF INFORMATION AS INDICATED BY URBAN PUBLIC SECONDARY SCHOOL TEACHERS

Characteristic	First Choice	Second Choice	Third Choice	Fourth Choice	Fifth Choice	$\bar{X}$
Relevant (information should be directly related to satisfying my original needs)	118	58	39	23	7	1.95
Up-to-date, able to keep me aware of new developments, ideas and viewpoints	76	77	49	35	8	2.27
Comprehensive (covers all facets of a subject)	35	63	78	45	24	2.84
Able to lead me to other sources	8	22	55	99	61	3.87
Technical (information should include abundant detail)	8	25	24	43	145	4.19

Table 44

RANK ORDER AND MEAN SCORES FOR CHARACTERISTICS DESCRIBING THE NATURE OF A SOURCE OF INFORMATION AS INDICATED BY URBAN PUBLIC SECONDARY SCHOOL TEACHERS

Characteristic	First Choice	Second Choice	Third Choice	Fourth Choice	Fifth Choice	$\bar{X}$
Easily accessible (near-at-hand, can be reached with minimum effort)	130	57	24	23	11	1.89
Understandable (information presented in a fashion that is easy to comprehend or absorb)	56	49	60	46	34	2.81
Quickly retrievable (information available immediately or within 24 hours)	24	65	53	58	45	3.14
Easy to use (requires few steps or directions)	11	38	78	85	33	3.37
Free or inexpensive	24	36	30	33	122	3.79

for the entire study population. For those characteristics associated with the content of a source of information, the characteristic "Relevant (information should be directly related to satisfying my original need)" is overwhelmingly ranked first. In contrast, the characteristic "Technical (information should include abundant detail)" is ranked fifth or last overwhelmingly. For those characteristics associated with the nature of a source of information, the characteristic "Easily accessible (near-at-hand, can be reached with minimum effort)" is overwhelmingly ranked first. Interestingly, especially in what are considered tight economic times, the characteristic "Free or inexpensive" is consistently ranked fifth or last.

The demographic characteristics associated with the highest mean scores for the eight different categories of types of sources of information are summarized below.

Localite sources of information - female, age group 31-40, holders of a master's degree, less than six years of teaching experience, teaching a "minor" subject (specifically art).

Cosmpolite sources of information - female, age group 41-50, holders of a master's degree & 60 hours, less than six years of teaching experience, teaching a "minor" subject (specifically physical education).

Personal sources of information - female, age group 31-40, holder of a bachelor's degree, less than six years of teaching experience, teaching a "minor" subject (specifically physical education).

Impersonal sources of information - female, age group 41-50, holder of a master's degree & 60 hours, less than six years of teaching experience, teaching a "minor" subject (specifically physical education).

Localite and personal sources of information - female, age group 31-40, holder of a master's degree, less than six years of teaching experience, teaching a "minor" subject (specifically industrial arts).

Localite and impersonal sources of information - female, age group 41-50, holder of a bachelor's degree, less than six years of teaching experience, teaching a "minor" subject (specifically music).

Cosmopolite and personal sources of information - female, age group 31-40, holder of a Certificate of Advanced Graduate Study, 6-10 years of teaching experience, teaching a "minor" subject (specifically physical education).

Cosmopolite and impersonal sources of information - female, age group 41-50, holder of a master's degree & 60 hours, less than six years of teaching experience, teaching a "minor" subject (specifically physical education).

Using the demographic characteristics age, training, and years of teaching experience to ascertain those individuals which would assess the various categories of types of sources of information as important to their practice produces an interesting situation. Of particular interest, are those cases where age groups 31-40 and 41-50, along with holding an advanced degree and having less than six years of teaching experience describe the teachers who identified the sources of information as important to their work. Are these teachers who have chosen to pursue advanced degrees before entering the field of education? Are these people who have worked in other fields before becoming teachers? The questions to be answered here are: (1) Does it make a difference, in relation to knowledge search and utilization, when a teacher pursues

an advanced degree? (2) Does experience in another profession make a difference in a teacher's attitude toward knowledge search and utilization?

An examination of the data associated with the thirty-three individual sources of information listed in section one of the questionnaire and presented in Appendix L warrants mentioning at this point. The nine sources of information, considered most important, from section one of the questionnaire are listed below in descending order of importance, as indicated by their mean scores.

- personal library notes and files $\bar{X} = 6.260$
- subject matter textbooks and reference books $\bar{X} = 6.222$
- informal discussions with other teachers in my own school or school system $\bar{X} = 5.767$
- face-to-face conferences with people in my own school or school system $\bar{X} = 5.465$
- subject matter journals, newsletters, bulletins and announcements $\bar{X} = 5.318$
- graduate subject matter courses or special courses $\bar{X} = 5.169$
- other libraries or resource centers $\bar{X} = 5.130$
- library or resource center in my own school or school system $\bar{X} = 5.111$
- face-to-face discussions with my school administrator, department chairman, central office supervisor, or curriculum specialist $\bar{X} = 5.004$

It should be noted that these sources of information tend to be subject matter oriented, readily available, and two-way forms of communication.

Looking at the nine items ranked as least important as indicated by their mean scores gives an interesting contrast. The nine sources of information, considered least important, from section one of the questionnaire are listed below in ascending order of importance as indicated by their mean scores.

- telephone calls to people in other school systems, state department of education, college or university faculties, etc. $\bar{X} = 3.071$
- correspondence with people in other school systems, state department of education, college or university faculties, etc. $\bar{X} = 3.383$
- The Educational Resources Information (ERIC) Services $\bar{X} = 3.397$
- education abstracts, indexes and bibliographies $\bar{X} = 3.447$
- information services (PIP reports, Title IVC programs, Regional Educational Laboratories, etc.) $\bar{X} = 3.483$
- telephone calls to people in my own school or school system $\bar{X} = 3.520$
- classroom visits within my own school or school system $\bar{X} = 3.688$
- education conventions and professional association meetings $\bar{X} = 3.750$
- classroom visits to other school systems $\bar{X} = 3.803$

In contrast to the nine most important sources of information, the nine least important sources of information tend to be education-oriented and might be characterized as requiring some time and effort to be utilized.

Of interest at this point are the low assessments given for both the Educational Resources Information Center (ERIC) services and the

information services (PIP reports, Title IVC programs, Regional Education Laboratories, etc.). They ranked thirty-first and twenty-ninth respectively among the list of thirty-three sources of information. Of the 245 respondents 114, or 46.5 percent of the study population, said they have never used the ERIC services and 39.2 percent, or 96 of the respondents, have never used the information services listed.

Page 8 of the questionnaire produced a response rate of 26 percent, or 64 of the 245 respondents answered the open-ended portion of the questionnaire. The responses to item 1 - "Please identify (by name, title, or description) the single most important source of information in the context of your work. Then, please explain why you prefer this specific source of information," - confirm the impression that the sources of information used by teachers cover a wide and varied spectrum. Sources such as the Bible and the Holy Koran, Hampden County Extension Service, magazines, news media, dictionary, and audio visual aids were listed in response to this item. However, the overwhelming favorite was the response--textbooks. Twenty-four, or 38 percent of the responses, indicated that textbooks were the single most important source of information. Next in importance were journals, with fourteen people, or 22 percent, indicating that they were most important in the context of their work. News media followed in third position with seven people, or 11 percent of those responding to page 8, listing them as important. The types of journals mentioned highlight the importance of subject matter to secondary school teachers: Scientific American, Foreign Language Annuals, Instrumentalist Magazine, Physics Today,

English Journal, and The American Biology Teacher. The reason cited most often for choosing these sources of information was that they are up-to-date and offer current information.

Table 45

SIGNIFICANT F VALUES FOR TYPES OF SOURCES OF INFORMATION AND SPECIFIC DEMOGRAPHIC VARIABLES

Types of Information	Demographic Variable	F
Local	Sex	6.503*
Personal	Sex	5.478*
Local and Personal	Sex	4.927*
Personal	Experience	3.487**
Cosmopolite and Personal	Experience	3.173*

*$p < 0.05$ significance level

**$p < 0.01$ significance level

Item number 2 - "Considering the best of all possible situations would you please name, and explain your reason for naming, the characteristic(s) you feel is/are most desirable in a source of information," produced a wide range of responses. Terms such as: clear, current, objective, accurate, practical, relevant and easy to use were mentioned to describe desirable characteristics in a source of information. However, this item reaffirms what was found as a result of the responses to part one of page 7 of the questionnaire. The characteristic "accessible,"

Table 46

SALIENT MEAN SCORES FOR TYPES OF SOURCES OF INFORMATION AND THEIR SPECIFIC DEMOGRAPHIC VARIABLES

Types of Sources of Information	Demographic Variable	$\bar{X}$
Local	Female	65.15
Personal	Female	69.15
Local and Personal	Female	29.77
Cosmopolite	Age Group 41-50	97.76
Impersonal	Age Group 41-50	90.97
Impersonal	Master's Degree & 60 Hours	98.40
Personal	Under 6 Years Experience	76.60
Cosmopolite and Personal	6-10 Years Experience	48.68
Cosmopolite	Physical Education Teachers	113.50
Impersonal	Physical Education Teachers	101.00

"easy to get at" was listed 17 times or by 29 percent of those answering this item. The reason most often accompanying the characteristic "accessible" was - "because time is so short/valuable."

Items 3 and 4 of page 8 both produced few responses. Item number 3, "If there are specific kinds of information products or services which would be specifically useful to you, would you please describe them?" - was answered by twenty-four people or 10 percent of the entire study population. The most often mentioned types of information products or services desired were publications, magazines, textbooks (up-to-date) and college courses or seminars. In almost every case the information product or service was qualified with a desire for it to be subject matter oriented.

Item number 4, "In regard to your classroom activities, if you have ever had any serious difficulty locating, obtaining or using information, would you please explain the difficulty, and can you offer a possible solution to the problem?" - received a response rate of 11 percent or 26 of the 245 respondents answered this item. Unfortunately the majority of the responses to this item dealt with information used by students: workbooks, worksheets, lab manuals, study guides, etc., and not with teacher oriented materials. Forty-two percent of the respondents, or eleven people, indicated that they had no difficulty in retrieving information. The major difficulty listed was lack of time to search for information, and the solution offered most often was a central location for materials.

Discussion of Results

An examination of the mean scores generated by the various demographic variables across the various categories of sources of information indicates that the demographic variables of sex and experience offer the clearest patterns of assessments of the various categories of types of sources of information. Females consistently offer higher assessments of all categories of types of sources of information than do males. And as teaching experience increases, the assessments of importance of all categories of types of sources of information tends to decrease. The demographic variable, age, produced a flip-flop in the assessment of importance for the categories of types of sources of information. Younger teachers tended to favor local sources of information and personal sources of information. Whereas, older teachers tended to favor both the cosmopolite and personal sources of information and the cosmopolite and impersonal sources of information. The greatest interest in the various types of sources of information appears in the age range 31-50, with the indicated importance shifting from local and personal sources and cosmopolite and personal sources for the 31-40 age group to local and impersonal and cosmopolite and impersonal sources for the 41-50 age group. In terms of major teaching area, the interesting observation occurs when the population is divided into "major" subject area and "minor" subject area. The "minor" subject area teachers consistently assess the various categories of types of sources of information high, while the "major" subject area teachers offer low assessments of importance. Physical education teachers consistently

rate the various types of sources of information (except local and personal) very high. This might be explained from the comments offered on page 8 of the questionnaire. The physical education teachers that responded to page 8 referred to their coaching positions and their need for new methods and techniques with respect to coaching extra-curricular teams. Social studies teachers consistently offered the lowest assessments to the various categories of types of sources of information. The demographic variable, amount of formal training, offered the most random pattern of assessments of the various categories of types of sources of information. No one formal training group consistently scored the highest mean scores. Holders of a Certificate of Advanced Graduate Study and those holding either a Ph.D. or Ed.D. degree consistently indicated the lowest assessments for the various categories of types of sources of information.

Federal officials connected with the ERIC system might be both encouraged and concerned about the results of this survey. On the one hand, it would appear that a greater percentage of secondary school teachers are familiar with or have used the ERIC services than have done so in the past. On the other hand, the low assessment of importance offered by those who have used the services should be of some concern.

An examination of the data associated with the nine sources of information with the highest mean scores and the nine sources with the lowest mean scores would indicate that secondary school teachers require sources which are subject matter oriented, easily accessible and offer two-way means of communcation. In addition, data from the

characteristics thought desirable in a source of information would indicate that these sources should also be relevant, up-to-date and understandable.

In summary, it might be said that this study confirms much of what has been said about knowledge search and utilization in education. Urban public secondary school teachers require and utilize a wide range of sources of information. However, their primary concern is finding up-to-date subject oriented sources, and that these sources, because of time restrictions, must be easily accessible. With the exceptions of sex and number of years of experience, the demographic variables examined in this study do not offer clear patterns of assessments for types of sources of information with respect to urban public secondary school teachers. Among this specific group of educators, the ERIC services have gained ground in terms of recognition and utilization. However, because characteristics such as relevance, accessibility and subject matter orientation are considered important by urban public secondary school teachers, sources such as the ERIC services, if utilized, are assessed poorly.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Statement of the Problem

Much of the research and literature pertaining to knowledge search and utilization in education suggests that educational practitioners utilize a wide variety of information sources, primarily determined by the specific role occupied by the specific practitioner. The literature also suggests that because of a lack of training in knowledge search and a lack of adequate time for knowledge search, educational practitioners rely on sources that are easily accessible, relevant, and offer the opportunity for two-way forms of communication. Secondary school teachers, and specifically urban public secondary school teachers, have rarely appeared as a part of the generalized population studied in relation to knowledge search and utilization in education. It seemed worthy, therefore, to investigate the assessments of urban public secondary school teachers in relation to various types of sources of information.

Purpose of the Study

The general purpose of this study was to ascertain the assessments of urban public secondary school teachers toward sources of information which are related to their professional practice. One secondary purpose was to identify from a selected list, reasons selected urban public secondary school teacher need information. Another secondary purpose was to identify those characteristics considered most important, by

selected urban public secondary school teachers, in a source of information.

Scope and Procedures

Two hundred and forty-five urban public secondary school teachers from the western section of Massachusetts comprised the population of this study. A questionnaire adapted from a survey instrument used by Paul Hood et al. in a Study of Information Requirements in Education, Vol. II: A Mail Survey of User Information Requirements, and a demographic data sheet were designed for use in this study.

Approximately 400 teachers were given a questionnaire and a demographic data sheet along with a cover letter explaining the purposes of the study. Of these 400 teachers, 245, or 61 percent, returned usable questionnaires. Returned questionnaires and demographic data sheets were hand scored, entered into the computer, and analyzed by the Statistical Package for the Social Sciences (SPSS) program at the University of Massachusetts Computer Center. Statistical treatments included the use of percentages, means, standard deviations and analysis of variance.

Summaries and Conclusions

First were investigated the relationships between various demographic variables (sex, age, training, experience and major teaching subject area) and the types of sources of information identified as important to personal practice. The demographic variables of age, amount

of formal training and major teaching subject area proved not to be meaningful predictors of how urban public secondary school teachers will assess various types of sources of information. However, the demographic variables of sex and number of years of experience as a secondary school teacher can be used as predictors of how urban public secondary school teachers will assess various types of sources of information. Female urban public secondary school teachers consistently gave higher assessments for the various types of sources of information than did male urban public secondary school teachers. As experience at the secondary level increased, the urban public secondary school teachers gave the various types of sources of information consistently poorer ratings.

Second, the study was designed to ascertain those characteristics (sex, age, training, etc.) of subjects who identified specific types of sources of information as important to their practice. This section of the study produced some interesting questions for further investigation. For seven of the eight categories of types of sources of information, the subjects that classified them as important were described as being in the 31-40 or 41-50 age group, holding an advanced degree and having less than six years of teaching experience. These particular sets of characteristics cause two questions to be raised: (1) Does it make a difference, in relation to knowledge search and utilization in education, when a teacher earns an advanced degree? (2) Does it make a difference, in relation to knowledge search and utilization in education, if a teacher has worked in another profession before entering education?

Then, reasons selected urban public secondary school teachers need information were identified from a selected list. Findings from this section of the study were in keeping with the often repeated description that secondary school teachers are subject matter oriented. The reason "Keeping aware of developments in my particular subject area," was the most often stated reason for needing information, achieving a mean score of 6.082 on a 7-point scale.

Next, the study identified those characteristics considered most important, by selected urban secondary school teachers, in a source of information. In relation to those characteristics which describe the contents of a source of information, relevancy (information should be directly related to satisfying my original need) was considered most important. In relation to the nature of a source of information the characteristic "easily accessible" (near-at-hand, can be reached with minimum effort) was ranked most important by an overwhelming majority of the study population.

In addition, the study investigated the perceptions of urban public secondary school teachers in relation to the Educational Resources Information Center (ERIC), as a source of information. Forty-six point five percent of the study population, or 114 people, indicated that they have never used the ERIC system. For those members of the study population who have used the ERIC system, it was ranked thirty-first out of the thirty-three sources listed.

Finally, the study compared the nine sources of information with the highest mean scores and the nine sources of information with the

lowest mean scores to determine if additional characteristics could be identified to describe the sources of information preferred by urban public secondary school teachers. This comparison revealed that the following characteristics are considered important by urban public secondary school teachers: subject matter orientation, readily accessible, and two-way forms of communication.

These study outcomes indicate that basic demographic variables are not good predictors of how urban public secondary school teachers assess different types of sources of information. Only sex and number of years of experience as a secondary school teacher produced consistent patterns of assessments. Also, the extremely high rating for the reason, "Keeping aware of developments in my particular subject area," reaffirms the strong position of subject matter orientation in the area of secondary education. In addition, the characteristics associated with a source of information, that is, easily accessible and relevant, are of primary importance to urban public secondary school teachers. And, finally, the study's outcomes indicate that information services such as the Educational Resources Information Center (ERIC) services intended for use by educational practitioners have experienced increased recognition by urban public secondary school teachers. However, as a source of information, the ERIC services are assessed poorly by the urban public secondary school teachers surveyed. These study outcomes suggest that the poor assessments of the ERIC system are due to its lack of subject matter orientation and to its lack of accessibility. The ERIC system will probably fail

to reach a large segment of the secondary school teacher population until these kinds of inadequacies are corrected.

The findings of this study confirm Chorness, Rittenhouse and Heald (1968); Hendrick (1970); Rittenhouse (1970); Magisos (1971); Brittain (1971); Aoki (1977); Hood (1979); Kornos and Enns (1979); Fernig (1980); Seiber (1981); and Fullan (1981) in relation to the importance of friends and colleagues and the use of direct, two-way forms of communication as a source of information for educational practitioners. In addition, the importance of textbooks, mentioned by Boyd (1978), and the importance of subject matter orientation in a source of information described by Mann (1976) are also confirmed by the results of this study. However, the importance that Hood and Hayes (1967) ascribe to the public media as a source of information for secondary school teachers is not confirmed by the results of this study.

In terms of the characteristics seen as important as a source of information, this study conforms the findings of Magisos (1971), Hood (1979), and Seiber (1981) when they state that "relevance" of information is of prominant importance to the educational practitioner.

The results of this study indicate an increase in the use of the ERIC system as a source of information by secondary school teachers. However, this study also confirms the findings of Hendrick (1970) in relation to the assessments of the importance of the ERIC system as a source of information. Even though the ERIC system is enjoying greater utilization, those individuals using the system give it poor assessments.

In relation to demographic variables and their use as predictors of assessments of importance of sources of information the results of this study confirm the findings of Brickley and Trohoski (1974) and Louis (1977) when they indicate that demographic variables in general are not related to knowledge search and utilization in education. However, the findings of this study contradict the specific findings of Corwin (1975) when he indicates that educational background, the proportion of males in a population and the amount of experience in education a person possesses are related to the tendency to embrace new programs.

Implications for Education

The Federal Commission appointed by T. H. Bell, the Secretary of Education, in a report titled, "A Nation at Risk: The Imperative for Educational Reform," in the recommendations for teachers section states, "Persons preparing to teach should...demonstrate competence in an academi- discipline." The Secretary's report should have gone even farther by indicating that people already in the profession should be required to periodically demonstrate competence in an academic discipline. In order to maintain academic competence, secondary school teachers must have readily available sources of information which will help them to keep abreast of changes and developments in their particular subject areas. In order to meet this need, individual sources of information and information services must become sensitive to the needs of secondary school teachers in general and urban public secondary school teachers in particular.

These study outcomes should be helpful to individuals concerned with the establishment of effective information sources and services. Certain demographic variables have been identified as good indicators of assessments of types of sources of information, whereas other demographic variables have been identified as poor indicators of assessments of types of sources of information. Urban public secondary school teachers offering the highest assessments of the various types of sources of information and therefore likely to utilize those sources of information tend to fit the following description:

> Female, between the ages of 31 and 50. She holds a Master's Degree or a Master's Degree plus 60 hours. Her subject area concentration is most likely one of the 'minor' subject fields, specifically physical education, home economics, or art. And she has been teaching for six years or less.

Urban public secondary school teachers offering the lowest assessments of the various types of sources of information and therefore not likely to utilize these sources of information tend to fit the following description:

> Male, either under 30 years of age or older than 50 years of age. He holds a Bachelor's degree. His subject area concentration is most likely one of the 'major' subject fields, specifically Business, Social Studies, Mathematics or Science. And he has been teaching for 16 years or more.

The findings of this study would indicate that those sources of information intended for urban public secondary school teachers, in addition to being designed with certain demographic variables in mind, should also be subject matter oriented and easily accessible.

Recommendations

Recommendations for policy and practice are:

1. Public high school libraries should devote space and resources for the express purpose of satisfying teachers needs in the area of information sources.

2. One person from each academic discipline should serve as a disseminator of new information and appropriate information sources. This role should be rotated within a specific discipline and additional time should be afforded the disseminator so that he/she may perform his/her duties effectively.

3. Teachers' schedules should be structured to allow time for the express purpose of information search activities.

4. School systems should take advantage of developing computer technologies to make various sources of information, such as the ERIC services, more accessible to high school teachers.

Recommendations for further study are:

1. A study utilizing a randomly sampled population or a population drawn from another region should be designed and carried out to see if the results of the present study can be replicated.

2. A further investigation should be made of the assessments of urban public secondary school teachers in relation to various types of sources of information using other demographic variables (salary schedule, national organization affiliations, school size, etc.) which may affect those assessments.

3. A follow-up study using interview techniques should be conducted with a randomly selected portion of the same population as this study to discover if the findings are consistent.

4. Since the knowledge search and utilization literature indicates that the population utilized in the past has been of a collective or general nature, more studies should be done utilizing specifically defined populations (such as the urban public secondary school population utilized in this study).

5. A study should be designed and carried out to explore further the effectiveness of the Educational Resources Information Center (ERIC) services in relation to urban public secondary school teachers.

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A P P E N D I X A

THE COVER LETTER

Dear Fellow Teacher:

I am carrying out a study of sources of information which have come into being to meet needs of knowledge users like yourself. These varied resources focus upon new practices, products, and ideas in education and specific subject fields apt to be of interest to secondary school teachers. Will you take twenty minutes to complete the enclosed questionnaire, which pertains to specific aspects of varied sources of information? Your responses, hopefully, will contribute to the improvement of such sources of information.

The survey instrument delves into four kinds of data. Routine demographic data is requested first. Then elicited is data pertaining to sources of information considered important to work activities, to characteristics of sources of information, and to needs apt to be met by sources of information. When responding to the various items on the questionnaire, keep in mind your ability to obtain information in areas such as: instructional methods, specific exercises, new or updated subject matter, etc.

All data will be treated in a confidential manner; hence, there is no need for you to sign the survey instrument. If you wish to receive a synopsis of the study outcomes, please include with the questionnaire a note with your mailing address on it.

Thank you for your help in this matter, your time and contribution are truly appreciated.

Sincerely,

Francis A. Baran
Classical High School
Springfield, MA

A P P E N D I X B

THE DEMOGRAPHIC DATA SHEET

STUDY OF THE ASSESSMENTS OF URBAN PUBLIC SECONDARY SCHOOL TEACHERS WITH REGARD TO INFORMATION SOURCES

Directions: The following five questions ask about demographic information. Using pen or pencil, please place a check mark indicating the appropriate answers in the spaces provided. If you change a response, make the change distinctly so there is no doubt about your intended answer. Please answer every item.

Please place the completed questionnaire in the envelope provided and return it to _____. Thank you for your cooperation and your assistance in this survey.

1. What is your sex? 1. ____ female 2. ____ male

2. What is your age?
   1. ____ 30 or under
   2. ____ 31 to 40
   3. ____ 41 to 50
   4. ____ 51 to 60
   5. ____ 61 or over

3. What is the extent of your formal training?
   1. ____ Bachelor's degree
   2. ____ Master's degree
   3. ____ Master's & 30 hours
   4. ____ Certificate of Advanced Graduate Study
   5. ____ Master's & 60 hours
   6. ____ Ph.D./Ed.D.

4. How many years have you been a secondary school teacher?
   1. ____ under 6 years
   2. ____ 6 through 10 years
   3. ____ 11 through 15 years
   4. ____ 16 through 20 years
   5. ____ 21 years or over

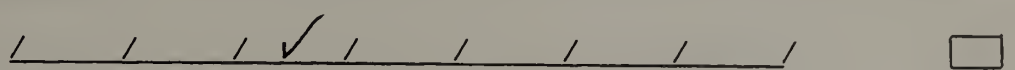
5. What is your major teaching subject area?
   1. ____ Art
   2. ____ Business
   3. ____ English
   4. ____ Foreign Language
   5. ____ Home Economics
   6. ____ Industrial Arts
   7. ____ Mathematics
   8. ____ Music
   9. ____ Physical Education
   10. ____ Science
   11. ____ Social Studies
   12. ____ Other (please specify) _____

A P P E N D I X C

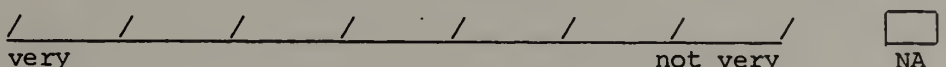
THE SURVEY INSTRUMENT

Below you will find a list of information sources. Please rate these, by placing a check mark in the appropriate space along the continuum, in terms of how important each is to you in the context of your work. If you have never used a particular source of information and cannot assess it in the context of your work, place a check mark in the box labeled NA (Not Applicable).

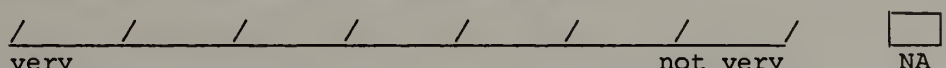
EXAMPLE:



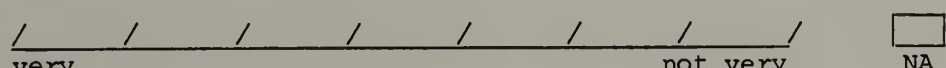
1. Workshops, seminars and committee meetings with people in my own school or school system.



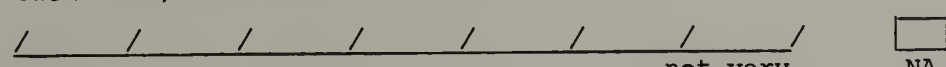
2. Workshops, seminars and committee meetings with people in other school systems, state department of education, college or university facilities, etc.



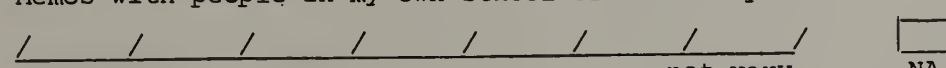
3. Telephone calls to people in my own school or school system.



4. Telephone calls to people in other school systems, state department of education, college or university faculties, etc.



5. Memos with people in my own school or school system.



6. Correspondence with people in other school systems, state department of education, college or university faculties, etc.

/____/____/____/____/____/____/____/

very important — not very important — ☐ NA

7. Education abstracts, indexes and bibliographies.

/____/____/____/____/____/____/____/

very important — not very important — ☐ NA

8. Subject matter abstracts, indexes and bibliographies.

/____/____/____/____/____/____/____/

very important — not very important — ☐ NA

9. Information services (PIP reports, Title IVC programs, Regional Education Laboratories, etc.).

/____/____/____/____/____/____/____/

very important — not very important — ☐ NA

10. The Educational Resources Information Center (ERIC) services.

/____/____/____/____/____/____/____/

very important — not very important — ☐ NA

11. Library or resource center in my own school or school system.

/____/____/____/____/____/____/____/

very important — not very important — ☐ NA

12. Other libraries or resource centers.

/____/____/____/____/____/____/____/

very important — not very important — ☐ NA

13. Face-to-face conferences with people in my own school or school system.

/ / / / / / / /

very important — not very important

☐ NA

14. Face-to-face conferences with people in other school systems, state department of education, college or university faculties, etc.

/ / / / / / / /

very important — not very important

☐ NA

15. Personal library, notes and files.

/ / / / / / / /

very important — not very important

☐ NA

16. Office department or school files.

/ / / / / / / /

very important — not very important

☐ NA

17. Education journals, newsletters, bulletins and announcements.

/ / / / / / / /

very important — not very important

☐ NA

18. Subject matter journals, newsletters, bulletins and announcements.

/ / / / / / / /

very important — not very important

☐ NA

19. Education conventions and professional association meetings.

/ / / / / / / /

very important — not very important

☐ NA

20. Subject matter conventions and professional association meetings.

/____/____/____/____/____/____/____/ ☐ NA

very important — not very important

21. Education textbooks, reference books and commercially prepared curriculum materials.

/____/____/____/____/____/____/____/ ☐ NA

very important — not very important

22. Subject matter textbooks and reference books.

/____/____/____/____/____/____/____/ ☐ NA

very important — not very important

23. Classroom visits within my own school or school system.

/____/____/____/____/____/____/____/ ☐ NA

very important — not very important

24. Classroom visits to other school systems.

/____/____/____/____/____/____/____/ ☐ NA

very important — not very important

25. Informal discussions with other teachers in my own school or school system.

/____/____/____/____/____/____/____/ ☐ NA

very important — not very important

26. Informal discussions with teachers in other school systems, state department of education, college or university faculties, etc.

/____/____/____/____/____/____/____/ ☐ NA

very important — not very important

27. Face-to-face discussions with my school administrator, department chairperson, central office supervisor or curriculum specialist.

/ / / / / / / ☐ NA

very important — not very important

28. Graduate education courses or special courses.

/ / / / / / / ☐ NA

very important — not very important

29. Graduate subject matter courses or special courses.

/ / / / / / / ☐ NA

very important — not very important

30. Curriculum materials developed in my own school or school system.

/ / / / / / / ☐ NA

very important — not very important

31. Studies, reports, papers generated within my own school or school system.

/ / / / / / / ☐ NA

very important — not very important

32. Public media (newspapers, television, radio, etc.).

/ / / / / / / ☐ NA

very important — not very important

33. Discussions with people not involved in education.

/ / / / / / / ☐ NA

very important — not very important

Below you will find a list of reasons why you, as a teacher, might need information. Please rate these, by placing a check mark in the appropriate space along the continuum, in terms of your degree of need for each in the context of your work.

1. Keeping abreast of new products, procedures and developments related to secondary education.

/____/____/____/____/____/____/____/____/
great need little need

2. Keeping aware of developments in my particular subject area.

/____/____/____/____/____/____/____/____/
great need little need

3. Identifying people who have expertise in a subject or problem area.

/____/____/____/____/____/____/____/____/
great need little need

4. Identifying new ways to improve my work.

/____/____/____/____/____/____/____/____/
great need little need

5. Evaluating educational practices and products.

/____/____/____/____/____/____/____/____/
great need little need

6. Finding answers to specific questions arising in my work.

/____/____/____/____/____/____/____/____/
great need little need

7. Locating information to share with other teachers.

/____/____/____/____/____/____/____/____/
great need little need

8. Preparing reports, articles or speeches.

/____/____/____/____/____/____/____/____/
great need little need

9. Other reason (please specify) _____

/____/____/____/____/____/____/____/____/
great need little need

10. Other reason (please specify) _____

/____/____/____/____/____/____/____/____/
great need little need

Below are two separate lists of characteristics associated with sources of information. The first list deals with the nature of the source of information. The second list deals with the content of the information offered by each source.

PLEASE RATE EACH LIST SEPARATELY

In the allotted space assign the number (1) to the most important characteristic in each list.

Assign the number (2) to the second most important characteristic in each list. Continue (3) through (5), for each list, assigning the number (5) to the least most important characteristic in each list.

Nature of the Source	Order of Importance:
The nature of a source of information should be:	
a. Easily accessible (near-at-hand, can be reached with minimum effort)	_____
b. Free or inexpensive	_____
c. Easy to use (requires few steps or directions) . .	_____
d. Quickly retrievable (information available immediately or within 24 hours)	_____
e. Understandable (information presented in a fashion that is easy to comprehend or absorb) . .	_____

Content of the Information	Order of Importance:
The content of the information should be:	
a. Comprehensive (covers all facets of a subject) . .	_____
b. Up-to-date, able to keep me aware of new developments, ideas and viewpoints	_____
c. Able to lead me to other sources	_____
d. Relevant (information should be directly related to satisfying my original need)	_____
e. Technical (information should include abundant detail)	_____

The next page of the questionnaire is optional. If you decide not to continue, I would like to thank you for your time and cooperation in this project. If you decide to complete the items on page 8, your responses will be greatly appreciated.

1. Please identify (by name, title or description) the single most important source of information in the context of your work. Then please explain why you prefer this specific source of information.

_____

_____

_____

_____

2. Considering the best of all possible situations would you please name, and explain your reasons for naming, the characteristic(s) you feel is/are most desirable in a source of information.

_____

_____

_____

_____

3. If there are specific kinds of information products or services which would be especially useful to you, would you please describe them?

_____

_____

_____

_____

4. In regard to your classroom activities, if you have ever had any serious difficulty locating, obtaining or using information, would you please explain the difficulty, and can you offer a possible solution to the problem?

_____

_____

_____

_____

Thank you for your time and cooperation in this project.

A P P E N D I X D

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS LOCALITE

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS LOCALITE

- Workshops, seminars and committee meetings with people in my own school or school system.
- Telephone calls to people in my own school or school system.
- Memos with people in my own school or school system.
- Library or resource center in my own school or school system.
- Face-to-face conferences with people in my own school or school system.
- Personal library, notes and files.
- Office, department or school files.
- Classroom visits within my own school or school system.
- Informal discussions with other teachers in my own school or school system.
- Face-to-face discussions with my school administrator, department chairperson, central office supervisor or curriculum specialist.
- Curriculum materials developed in my own school or school system.
- Studies, reports, papers generated within my own school or school system.

A P P E N D I X E

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS COSMOPOLITE

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS COSMOPOLITE

- Workshops, seminars and committee meetings with people in other school systems, state department of education, college or university faculties, etc.
- Telephone calls to people in other school systems, state department of education, college or university faculties, etc.
- Correspondence with people in other school systems, state department of education, college or university faculties, etc.
- Education abstracts, indexes and bibliographies.
- Subject matter abstracts, indexes and bibliographies.
- Information services (PIP reports, Title IVC programs, Regional Education Laboratories, etc.)
- The Educational Resources Information Center (ERIC) services.
- Other libraries or resource centers.
- Education journals, newsletters, bulletins and announcements.
- Subject matter journals, newsletters, bulletins and announcements.
- Education conventions and professional association meetings.
- Subject matter conventions and professional association meetings.
- Education textbooks, reference books, and commercially prepared curriculum materials.
- Subject matter textbooks and reference books.
- Classroom visits to other school systems.
- Informal discussions with teachers in other school systems, state department of education, college or university faculties, etc.
- Graduate education courses or special courses.
- Graduate subject matter courses or special courses.
- Public media (newspapers, television, radio, etc.)
- Discussions with people not involved in education.

A P P E N D I X F

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS PERSONAL

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS PERSONAL

- Workshops, seminars and committee meetings with people in my own school or school system.
- Workshops, seminars and committee meetings with people in other school systems, state department of education, college or university faculties, etc.
- Telephone calls to people in my own school or school system.
- Telephone calls to people in other school systems, state department of education, college or university faculties, etc.
- Face-to-face conferences with people in my own school or school system.
- Face-to-face conferences with people in other school systems, state department of education, college or university faculties, etc.
- Education convention and professional association meetings.
- Subject matter conventions and professional association meetings.
- Classroom visits within my own school or school system.
- Classroom visits to other school systems.
- Informal discussions with other teachers in my own school or school system.
- Informal discussions with teachers in other school systems, state department of education, college or university faculties, etc.
- Face-to-face discussions with my school administrator, department chairperson, central office supervisor or curriculum specialist.
- Memos with people in my own school or school system.
- Correspondence with people in other school systems, state department of education, college or university faculities, etc.
- Graduate education courses or special courses.
- Graduate subject matter courses or special courses.
- Discussions with people not involved in education.

A P P E N D I X G

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS IMPERSONAL

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS IMPERSONAL

- Education abstracts
- Subject matter abstracts, indexes and bibliographies
- Information services (PIP reports, Title IVC programs, Regional Education Laboratories, etc.)
- The Educational Resources Information Center (ERIC) services
- Library or resource center in my own school or school system
- Other libraries or resource centers
- Personal library, notes and files
- Office, department or school files
- Education journals, newsletters, bulletins and announcements
- Subject matter journals, newsletters, bulletins and announcements
- Education textbooks, reference books and commercially prepared curriculum materials
- Subject matter textbooks and reference books
- Curriculum materials developed in my own school or school system
- Studies, reports, papers generated within my own school or school system
- Public media (newspapers, television, radio, etc.)

A P P E N D I X H

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS LOCALITE AND PERSONAL

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS LOCALITE AND PERSONAL

- Workshops, seminars and committee meetings with people in my own school or school system
- Telephone calls to people in my own school or school system
- Face-to-face conferences with people in my own school or school system
- Memos with people in my own school or school system
- Classroom visits within my own school or school system
- Informal discussions with other teachers in my own school or school system
- Face-to-face discussions with my school administrator, department chairperson, central office supervisor, or curriculum specialist

A P P E N D I X I

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS LOCALITE AND IMPERSONAL

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY
DESCRIBED AS LOCALITE AND IMPERSONAL

- Library or resource center in my own school or school system.
- Personal library, notes and files.
- Office department or school files.
- Curriculum materials developed in my own school or school system.
- Studies, reports, papers generated within my own school or school system.

A P P E N D I X J

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS COSMOPOLITE AND PERSONAL

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY
DESCRIBED AS COSMOPOLITE AND PERSONAL

- Workshops, seminars and committee meetings with people in other school systems, state department of education, college or university faculties, etc.

- Telephone calls to people in other school systems, state department of education, college or university faculties, etc.

- Face-to-face conferences with people in other school systems, state department of education, college or university faculties, etc.

- Education conventions and professional association meetings.

- Subject matter conventions and professional association meetings.

- Classroom visits to other school systems.

- Informal discussions with teachers in other school systems, state department of education, college or university faculties, etc.

- Graduate education courses or special courses.

- Graduate subject matter courses or special courses.

- Discussions with people not involved in education.

- Correspondence with people in other school systems, state department of education, college or university faculties, etc.

A P P E N D I X K

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY DESCRIBED AS COSMOPOLITE AND IMPERSONAL

SOURCES OF INFORMATION INCLUDED IN THE CATEGORY
DESCRIBED AS COSMOPOLITE AND IMPERSONAL

- Education abstracts, indexes and bibliographies.
- Subject matter abstracts, indexes and bibliographies.
- Information services (PIP reports, Title IVC programs, Regional Education Laboratories, etc.).
- The Educational Resources Information Center (ERIC) services.
- Education journals, newsletters, bulletins and announcements.
- Subject matter journals, newsletters, bulletins and announcements.
- Education textbooks, reference books and commercially prepared curriculum materials.
- Subject matter textbooks and reference books.
- Public media (newspapers, television, radio, etc.).

A P P E N D I X L

MEAN SCORES AND STANDARD DEVIATIONS ASSOCIATED WITH THE THIRTY-THREE INDIVIDUAL SOURCES OF INFORMATION LISTED IN SECTION ONE OF THE QUESTIONNAIRE

MEAN SCORES AND STANDARD DEVIATIONS ASSOCIATED WITH THE THIRTY-THREE INDIVIDUAL SOURCES OF INFORMATION LISTED IN SECTION ONE OF THE QUESTIONNAIRE

1. Workshops, seminars and committee meetings with people in my own school or school system.

   $\bar{X}$ = 4.417 SD = 1.882

2. Workshops, seminars and committee meetings with people in other school systems, state department of education, college or university faculties, etc.

   $\bar{X}$ = 4.354 SD = 1.908

3. Telephone calls to people in my own school or school system.

   $\bar{X}$ = 3.520 SD = 1.900

4. Telephone calls to people in other school systems, state department of education, college or university faculties, etc.

   $\bar{X}$ = 3.071 SD = 1.835

5. Memos with people in my own school or school system.

   $\bar{X}$ = 4.209 SD = 1.764

6. Correspondence with people in other school systems, state department of education, college or university faculties, etc.

   $\bar{X}$ = 3.383 SD = 1.900

7. Education abstracts, indexes and bibliographies.

   $\bar{X}$ = 3.447 SD = 1.800

8. Subject matter abstracts, indexes and bibliographies.

   $\bar{X}$ = 4.739 SD = 1.783

9. Information services (PIP reports, Title IVC programs, Regional Education Laboratories, etc.).

   $\bar{X}$ = 3.483 SD = 1.898

10. The Educational Resources Information Center (ERIC) services.

    $\bar{X}$ = 3.397 SD = 1.766

11. Library or resource center in my own school or school system.

    $\bar{X}$ = 5.111 SD = 1.753

12. Other libraries or resource centers.

$\bar{X}$ = 5.130 SD = 1.634

13. Face-to-face conferences with people in my own school or school system.

$\bar{X}$ = 5.465 SD = 1.576

14. Face-to-face conferences with people in other school systems, state department of education, college or university faculties, etc.

$\bar{X}$ = 4.409 SD = 1.875

15. Personal library, notes and files.

$\bar{X}$ = 6.260 SD = 1.139

16. Office, department or school files.

$\bar{X}$ = 4.826 SD = 1.756

17. Education journals, newsletters, bulletins and announcements.

$\bar{X}$ = 4.293 SD = 1.849

18. Subject matter journals, newsletters, bulletins and announcements.

$\bar{X}$ = 5.318 SD = 1.528

19. Education conventions and professional association meetings.

$\bar{X}$ = 3.750 SD = 1.990

20. Subject matter conventions and professional association meetings.

$\bar{X}$ = 4.385 SD = 2.016

21. Education textbooks, reference books and commercially prepared curriculum materials.

$\bar{X}$ = 4.777 SD = 1.980

22. Subject matter textbooks and reference books.

$\bar{X}$ = 6.222 SD = 1.106

23. Classroom visits within my own school or school system.

$\bar{X}$ = 3.688 SD = 1.956

24. Classroom visits to other school systems.

$\bar{X}$ = 3.803 SD = 2.072

25. Informal discussions with other teachers in my own school or school system.

$\bar{X}$ = 5.767 SD = 1.420

26. Informal discussions with teachers in other school systems, state department of education, college or university faculties, etc.

$\bar{X}$ = 4.700 SD = 1.691

27. Face-to-face discussions with my school administrator, department chairperson, central office supervisor or curriculum specialist.

$\bar{X}$ = 5.004 SD = 1.795

28. Graduate education courses or special courses.

$\bar{X}$ = 4.125 SD = 2.017

29. Graduate subject matter courses or special courses.

$\bar{X}$ = 5.169 SD = 1.806

30. Curriculum materials developed in my own school or school system.

$\bar{X}$ = 4.797 SD = 1.915

31. Studies, reports, papers generated within my own school or school system.

$\bar{X}$ = 4.093 SD = 1.986

32. Public media (newspapers, television, radio, etc.).

$\bar{X}$ = 4.619 SD = 1.901

33. Discussions with people not involved in education.

$\bar{X}$ = 4.072 SD = 1.948