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Computers and social work education a comparative study of professionals' and students' attitudes and interests.

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COMPUTERS AND SOCIAL WORK EDUCATION: A COMPARATIVE STUDY OF PROFESSIONALS' AND STUDENTS' ATTITUDES AND INTERESTS

by

Linda Diane Desmarais Kennette

A Thesis
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ABSTRACT

COMPUTERS AND SOCIAL WORK EDUCATION: A COMPARATIVE STUDY OF PROFESSIONALS' AND STUDENTS' ATTITUDES AND INTERESTS

by

Linda Diane Desmarais Kennette

The attitudes and interests of social work professionals and students regarding computer use were compared and analysed in this study by means of a survey. Recommendations for a Social Work Education response were made.

A review of the current literature defined a need for training in the use of computers in human services. The population of this study was the total number of 1984-85 undergraduate social work students, all members of OAPSW Windsor-Essex County Branch, a selection of United Way executives and other Windsor social agencies, and members of the faculty at the University of Windsor School of Social Work. The sample consisted of 445 respondents, which included 316 students and 129 professionals, who completed and returned their questionnaires.

The findings indicate that there is an association

between attitudes toward computers and variables such as type of computer exposure, age, gender, present methods and fields of practice, future desired methods and fields of practice, as well as source of agency income. There is also an association between attitudes toward computers and the level of agreement in having a computer course offered in a social work program.

It was also found that the students' and professionals' attitudes toward computers are positive in general, and a need for training was indicated by both groups.

It is recommended that action be taken in the form of offering a computer course for students in the social work program and conducting workshops or seminars for professionals in the community who are seeking computer training.

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CHAPTER I

PURPOSE OF STUDY

The current popularity of microcomputers and their potential use is changing society as we know it. Because of the micro's convenient size and affordable price, many human service agencies are now considering the use of computer systems in their organizations. This trend will undoubtedly affect social workers employed in these agencies to various degrees. How will they respond to the challenges which arise as part of the process of change? Will they accept the use of computer technology in their practice as beneficial or will this be seen as a threat? Will the workers be willing to seek the obvious training needed in order to fully utilize the new system? Are agencies eventually going to expect workers to be familiar with computers? Will this knowledge of computers increase employment marketability for students and promote career advancement for workers?

In an attempt to answer these initial questions, this writer realized the need for further research on the relationship of information technology and social work. Hence, the purpose of this study was to analyse the attitudes and interests of social work professionals and students regarding computer use in social work education and

practice, and to increase the knowledge base of social work by attempting to find relationships between the variables under study. A basic assumption was that the respondents' attitudes and interests toward computers would be associated with the type of exposure they had to computers.

At present, students in the social work program are briefly exposed to computers in their research courses. Although this is an important method of exposing students to computers, this writer felt that it remains limited in its scope, focusing primarily on research and neglecting to address the use of computers in other areas of social work, such as administration and direct practice.

It was important, therefore, to find out if the students were interested in learning more about the use of computers in all areas of social work. Of equal significance was the need to study the professionals' (especially employers) perception of the importance of social work students and professionals being more knowledgeable in the use of computers.

In order to obtain the above information, a survey was conducted which included social work students from all levels of the undergraduate program. Social work faculty members, executive directors of most Windsor social agencies, and all members of the Ontario Association of Professional Social Workers in the Windsor/Essex County Branch were also surveyed. The purpose of conducting such

an extensive survey was to include social workers at all levels of study and practice in order to compare them and perhaps, find significant differences among the groups.

Relevance to Social Work

The study of computer use in social work is quite relevant at this time, since many social work theorists are now focusing primarily on the ecological systems perspective (which includes biological, psychological, social and cultural aspects) as a knowledge base for social work education and practice (Compton & Galaway, 1979; Germain & Gitterman, 1980; Hartman & Laird, 1983; Northen, 1982). In order for social workers to utilize their skills in helping clients, a vast amount of information is required regarding client systems; from the basic family unit to the many systems involved in making up a society. Whether the worker is a generalist or a specialist, this immense knowledge base can be overwhelming and, at times, prove to be problematic in terms of a worker's human capacity to fully assess the client's needs.

A computer may be highly beneficial in assisting social workers in their decision making processes, by helping to sort out relevant data in each specific case. The use of a computer could also help them keep better records. With the use of various accounting and wordprocessing software packages and the development of a database system, social

workers would be able to collect data for more efficient research and evaluation of their own practice (Chandler, Cockerham, Sparks & Spekkens, 1983). Computerized systems would also provide a better means of accountability for administrative and funding purposes, a factor which currently appears to be a major issue in the management of social services.

As time goes on, social workers will have to become more familiar with computers and available software that will assist them in their daily practice. Is this a responsibility that should rest solely upon the individual social worker? Should the agencies be forced to train their employees or should some of the responsibility rest upon those who are involved in the formal education of these social workers? Lola Selby, a professor at the University of Southern California School of Social Work states:

> Each school has to produce personnel who can man today's jobs and meet tomorrow's challenges. Each school must also take some responsibility for furthering the development of the profession of social work by leading out into new areas of practice and theory development (cited in Dea, 1972, p. 19).

Hence, it is important that schools of social work begin to seriously examine the need for computer training of social workers in order to better prepare their students to meet the challenges of a career in modern social agencies.

Setting of the Study

This study was conducted in Windsor, a Canadian city located in Southwestern Ontario, with an approximate population of 200,000 people. Its close physical proximity to Detroit, Michigan has influenced the type of industries found in the city; chiefly, the automotive industry. Throughout its industrial history, Windsor's economy has been affected by its dependence on the cyclical auto industry.

During the past few years, following the latest recession of 1980-83, city planners have attempted to diversify the city's economic reliance on the auto industry. It was hoped that high technology would become an area of future growth and prosperity for the city (Windsor Star, 1982). This trend has also influenced the University of Windsor, which opened a new computer centre in January 1985, and installed two new mainframe computers that substantially increased the university's technological capacity (Long Range Planning Committee, 1985). Various departments have applied for the purchase of microcomputers for the purpose of research and student training. Over 270 microcomputers have already been purchased and are now available on campus. The Long Range Planning Committee is in the process of making arrangements to provide the opportunity for students in areas such as business administration, social work, psychology, physics, human kinetics and education to make

use of the available computer facilities (1985). In view of these facts, the need for this study was quite relevant to the university's long range plans.

This writer also welcomed the School of Social Work's commitment to meet community needs. The study was an opportunity to carry out the School's objectives which state:

> As a matter of educational policy, the school acknowledges a prime obligation of responsiveness and social accountability towards the population and the professional institutions of Windsor and its wider regional context. As a matter of policy, the school not only draws upon, conceptualizes and transmits the accumulated wisdom of social work practice and experience, but at the same time, subjects these to constant scrutiny in the light of new theoretical perceptions and innovative approaches. It encourages in its students a responsibly critical stance in respect to the officially prescribed patterns, policies and assumptions of the contemporary professional scene (Undergraduate Practicum Manual, 1983).

The results of this study have been presented in the remaining chapters of the thesis. Chapter II provides the reader with a review of literature in relation to computer use in human services. The chapter begins by looking at the influence of societal changes on social work and goes on to review books, articles and reports about the need for training, relevant studies and current courses being offered. Chapter III presents the problem formulation in the form of a research paradigm, as well as operational definitions and the statements of the major hypothesis and its sub-hypothesis.

Chapter IV describes the methodology of the study, research design, the population and sample, method of data collection and in conclusion, the limitations of the study.

Results of the data analysis are included in Chapter V, and a summary of the findings, conclusions and recommendations for further research are located in the final chapter.

CHAPTER II

REVIEW OF LITERATURE

An integral phase in the process of research is reviewing the relevant literature. This chapter presents a review of pertinent books, articles and reports addressing the topic of computer use in human services. The chapter begins by looking at the influence of societal changes on social work and how the profession has met this challenge throughout its history. Other sections of the literature review focus on areas such as the need for training, studies describing the current uses of computers in social work, and the attitudes of workers toward them. A brief look at computer use in other human service professions is also presented, as well as a review of computer courses being presently offered by various schools of social work.

Societal Effects upon Social Work

Throughout its history as a developing profession, social work has been influenced by societal changes in its application of theory in practice. The attempt to keep abreast with trends of the day is evident in the following short summary of how social work evolved during this century.

As one studies the history of social work, it is interesting to note that the current trend of focusing on an ecological systems perspective is rather similar to the views of the founder of casework, Mary Richmond. It has been stated that:

> As Mary Richmond developed a professional model of casework and devised the now familiar practice steps of social study, social diagnosis, and social treatment, the unit of study, diagnosis and treatment was the family. This emphasis was based on her philosophy of the "theory of the wider self" which characterized people as being deeply immersed in and affected by their social environments. "A man really is the company he keeps plus the company that his ancestors kept," Mary Richmond wrote in Social Diagnosis (1917), her monumental formulation of practice (Hartman & Laird, 1983, p. 12).

Richmond's "systems" approach was adapted by the Charity Organization Societies during the beginning of this century. However, an interest in the area of psychiatry, psychology, and psychoanalytic theory began to develop in the twenties, and encouraged a shift in social work's theoretical perspective. The individual became the focus of study and treatment (Hartman & Laird 1983). This shift developed another change in the following decade of social work history.

The profession was now divided into three separate specialties in terms of methods used for practice: casework, group work and community organization (Tolson & Reid, 1981). It was argued that there was a difference in processes and skills required for these different levels of social

organization; hence, there was a need for specialization. Another reason for these divisions in practice was an attempt to develop a more specialized concentration in specific areas in order to facilitate the definition of social work practice as a developing profession (Tolson & Reid, 1981).

This division of specializations was later heightened in the sixties when social injustice, War on Poverty, and the issue of civil rights became the most important concern of social work. Casework was seen as an "ineffective method at best, and at worst as a manipulative instrument of social control" (Hartman & Laird, 1983, p. 20). Social work as a profession was now experiencing difficulty in defining its specific purpose. Some believed that its main focus should be on the individual dealing with a personal problem, whereas others argued that the main goal of social work was to improve the environment that may be causing the problem for people.

With the development of systems theory, there is presently a tendency to consider that the two views discussed above are incomplete, and that what is needed is an integration of both (Compton & Galaway, 1979). This current view is based primarily on ecology, which is a science that studies the interrelationship between organisms and their environment. It views all organisms, including humans, as being part of a system that is continuously

evolving in order to adapt to the demands of its environment, and at the same time, the environment is continuously changed and shaped to meet the needs of the organism (Germain & Gitterman, 1980). With this holistic view of man, the trend has now changed toward a generalist approach in social work practice, rather than specialization. Those who argue in favour of this approach state that "such a view (holistic) of human behaviour requires that a social worker be competent to intervene in any part of the person-group-environment gestalt" (Northen, 1982, p. 7-8).

Since social work's current focus is upon the systems theory and a generalist perspective, and society is in the process of experiencing a "revolution" in terms of information technology, one would naturally assume that the profession would be addressing issues related to the use of computer technology in its educational programs and practice. Apparently this is not the case. James M. Gripton (1981), defines this situation as a paradox. He states:

> If there is a logical affinity between applied systems theory and computer applications, then the recent history of social work in the United States and Canada presents a paradox. During the past two decades the profession has embraced systems theory while ignoring or rejecting computers. The development of social work theory has been characterized by extensive incorporation of systems concepts on the one hand, and general indifference or antagonism to computers on the other (p. 1422).

Gripton also explains that this paradox may be the result of administrators not adopting the use of systems theory as do social work educators, and thus, are slow to change their methods of administering the agencies. The author goes on to say that other reasons for this phenomenon may be based upon factors such as the application of computers being perceived as a threat in terms of loss of professional power, status and prestige. Another important element mentioned in the article is the value base of the social work profession, which is oriented toward a humanistic doctrine. Computers tend to be viewed as "depersonalizing, intrusive and alienating" by many social workers who value the opportunity for human interaction (Gripton, 1981, p. 1423).

In order to appreciate the issues examined by Gripton, it is important to review the current social work literature in terms of how the use of computers in human services has been presented and analysed.

Need for Training

Boyd, Hylton and Price (1978) reviewed the social work literature to examine how computers were being used in social service agencies. This search included professional journals and unpublished studies for the period of 1970 to 1976. Thirty-one articles were written during that time. The majority of articles were basically focusing on the use

of computers for administrative purposes, with only one article touching upon its use in direct practice. The major concern in most articles was the threat to confidentiality. The unpublished studies were only beginning to consider the use of decision making support systems at that time. One must appreciate the year this article was published and realize that microcomputers were not available then. However, it is an important article to start with, in terms of looking at the gradual process of computer applications in social work.

The authors were concerned with the fact that their survey indicated the most relevant use of computers was for administrative purposes: for clerical work, record keeping and accounting, to meet the needs for the growing pressure to be financially accountable. To use a computer for research and direct services was practically ignored. The need for computer training was ignored as well. The authors concluded that these omissions were probably due to "poor understanding of computer technology" which in turn may account for the lack of interest. They went on to say:

> The use of computer technology in the area of professional decision-making, as distinct from administration, involves professional standards and ethics. For this reason, it may be unrealistic to expect that the full potential of computers will be realized. If this is to happen, the leaders of the profession--in particular social work educators--will have to be fully involved. These professionals, who provide a meeting point between technology and client services, may be in the best position to resolve the questions raised in this article. Integrating special courses into the curriculum and involving

> social workers in the design and implementation of computer systems are two important steps in assuring the development of this kind of professional competence in the years ahead. (Boyd, et al, 1978, p. 370-371).

Another interesting article was written by Dick Schoech and Tony Arangio in 1979. They discuss four areas in which the use of computers would be highly beneficial: increased accountability, increasing use of information systems, program evaluation and integration of services. The authors provide an interesting summary of the potential use of computers in areas that are mainly involved in direct practice; for example, assisting in interviews, therapy, counselling, and review of literature. Actual examples of computer use are noted in the article, such as public assistance agencies in Maine and South Dakota determining client eligibility for services by computer systems, and a Mental Health Clinic in Texas having an information system devised to assist therapists in their decision making processes. The authors predict that within the next five to fifteen years, most human services will be using computers. Their major concern is the reluctance of social workers to learn more about computers and the problems that may arise by this reluctance. They state:

> If service personnel do not become more knowledgeable and experienced about the use of computers, other professionals with less understanding of human services will be placed in charge of the computerization effort when it occurs. Computers bring power to those who control them and those who know how to use the information they generate. Replacement of human service personnel by computer and systems

> professionals can cause the same problems as replacement of human service managers with professional managers, that is, lack of communication between the different professions, conflicts of values, misunderstandings and mistrust, and power struggles. Since computer information is no better than the people who supply it and use it, these problems can waste valuable time and energy as well as turn potentially helpful technology into a senseless battleground and a costly failure. The client and the community are the ultimate victims. The community pays for unproductive activities, and the client receives less beneficial services. (Schoech & Arangio, 1979, pp. 99-100).

The authors go on to say:

> A survey of ninety managers--representative of several levels of administration in public, quasi-public, and voluntary agencies--concluded that competence in the area of management information systems is essential because of the emphasis on accountability, especially for upper-level management.
>
> Even if human service professionals are not educated to become developers and designers of such systems, they should at least have exposure at some point in their education to a course that will acquaint them with the knowledge, attitudes, and skills associated with the present use of computers in a human service agency. (Schoech & Arangio, 1979, p. 100).

In his book Computer Use in Human Services (1982), Schoech discusses the various theoretical aspects involved in the processes of management information systems and the decisions made based upon this information. He looks at the experiences and knowledge gained by other professions; for example, the business world, in an attempt to integrate this information for a better adaptation in human services. In conclusion, he stresses the importance of human service personnel becoming more educated in computer use in order to

gain a more positive attitude toward them. As he did in his article, Schoech argues that if these workers don't get trained, "development and control of the agency's information management effort will be left to other professions with less understanding of human service agencies and of human service in general" (Schoech, 1982, p.266).

A similar argument is expressed by Robert Lefferts (1982). He warns the reader, however, that this type of training is problematic, despite the current trend toward increased accountability. Lefferts states:

> Although evaluation of effectiveness at the policy level and at the individual level is essential, social work values recognizing the dignity of all people and supporting redistribution and self-determination are in conflict with this new ideology. We are in a dilemma. Social work students must be prepared for jobs that exist. They must compete with graduates of business schools for policy jobs and with professional and clinical psychology, the relatively new 'human service' professionals, and many others in the field of mental health for practitioner jobs. We thus have no choice but to teach the new technology even if we are uncomfortable with it. But let us not teach it uncritically, ignoring its contradictions (cited in Washington, Toomey, 1982, p. 159).

Schoech goes on to say how important it is for students to be exposed to computerized information management. He states:

> The core responsibility of training human service professionals falls to our universities. It is in the bachelor's, master's and doctorate degree programs that human service professionals must be exposed to information management and their role in it....The gap between what education concepts and skills are needed and what is being offered in

> educational institutions is apparently one of the causes of the resistance and the refusal of human service personnel to accept the role of computerized information management in service delivery. (Schoech, 1982, pp. 268-269).

Schoech also encourages the training of existing personnel through training packages "developed and contracted out to universities, national, state or local professional associations, or other organizations" (1982, p. 276). We all need to know and understand computers in order to make full use of their potential, while at the same time, be aware of the human ethics involved.

David Dery examined statewide information systems and analysed the effectiveness of these systems (1981). He described the systems at great length, and discussed the various stages organizations go through in this challenging process of change and adjustment. Dery noted the "politics" involved that hamper the system; such as, improperly entered data, unnoticed errors, biased decisions of what to feed into the system, etc. Dery concluded that the success of information systems working well for agencies rests specifically on those persons who "feed the system", such as managers, supervisors and workers (Dery, 1981, p. 252). There is a need for better understanding of computer systems among human service personnel in order to reduce the biases found by Dery in his studies. Possibly if these workers had better training, the problems would decrease and the system would be accepted and used in a more positive manner.

Conclusions of a mail survey of 500 non-profit Chicago organizations indicated that there was a high interest in management information systems and that the need for education and training was great. The actual findings showed that 42% of the respondents were using computer based systems, whereas 32% of the remaining 58% of the respondents planned to computerize in the coming year. Only 20% of all the organizations' technical staff were involved in writing actual software applications. The majority (80%) of the software was purchased from external sources, either consultants or software houses (Comprehensive Community Services, 1981).

Another study analysed factors which were associated with the success and failure of information systems in human service agencies (Mutscher, Cnaan, 1982). The authors compared two case studies of computer systems used in two Israel agencies. One system was developed and implemented with success and the other was not. The key factor in the successful system was that the human service administrators and practitioners were directly involved in the development and design of it. The other system was designed by systems analysts and information experts who based their decisions upon industrial organizations management systems, disregarding the special needs of a human service organization.

An informative book has been written by James Taylor regarding the use of microcomputers in agencies (Taylor, 1981). He briefly introduces the reader to the basics of computers in a "non-technical" manner. He also discusses the process of developing computer systems, taking into account such factors as: agency needs, costs, availability of hardware and software, use of consultation, etc. This book is a very good resource as an introduction to microcomputers for novices.

A newsletter currently available, Computer Use in Social Services Network is also an excellent source of information for any professional or student interested in computers (Schoech, 1984). The editor, Dick Schoech, describes his newsletter as "a nonprofit association of professionals interested in exchanging information and experiences on using computers in the social sciences" (Schoech, 1984, p. 1). Schoech began publishing a journal titled Computers in Human Services in the spring of 1985. This journal provides an opportunity for professionals to publish papers relating to this topic, a very important step in the process of educating us all.

Computer Use in Direct Practice

A small number of studies have been conducted in the area of computer use in direct practice. Eliezer D. Jaffe (1979) describes a study in which computers were used to

assist in the placement of children. These recommendations were then compared to placements made by social workers. Results showed that there was very little difference in computer and worker recommendations when dealing with young children; however, there was quite a difference in results when the children were older. The major assumption for this difference was that the computer was programmed with social work values in mind, which would have influenced the programmer to recommend placing the older child back in his own home. In reality, older children were being placed in institutions because of financial considerations. This shows that there is a difference between how the worker feels about a situation and what is actually done about it. The author states that perhaps the computer will help define social work methods in decision making in the future, to assist in "conceptualization, completion of operational definitions, and the verbalizations of criteria for practice" (Jaffe, 1979, p. 384). This will be a necessity in the future for social workers as they are faced with more and more pressure to be accountable. Therefore, computer use could help social workers to define their practice in more scientific, measurable terms.

Another study that emphasizes the importance of categorizing actual processes of social work is discussed by Dick Schoech and Lawrence Schkade, and describes the use of a decision support system to assist caseworkers in child

welfare (1980). A decision support system may be defined as a "computer-based data processing application designed to assist professionals in making complex decisions" (Schoech & Schkade, 1980, p. 567). One may visualize this system as "multiple computerized databases connected and organized to help the decision maker retrieve, manage and display information relevant to the decision at hand" (Schoech & Schkade, 1980, p. 567).

Once again, the most important task mentioned in this article is to feed the computer with good information. Schoech and Schkade state:

> Just as important as knowing what a DSS is, is knowing what a DSS is not. It is not a substitute for the user's experience and judgment. For example, it contains only data and key activities, not the politics and experience surrounding the data and activities. The role of a DSS is not in making decisions, but in helping the caseworker to find and explore options and probabilities. This allows a worker to make better decisions, realizing that the information a DSS provides is only as good as the information that the organization has put into it. (1980, p. 568).

The authors go on to say how important it is for social workers to be knowledgeable in computer applications in order to assure that the systems designed are beneficial for the service delivery to clients, and not just for the benefit of management.

In the near future, the possibility of software becoming available for use by family therapists is imminent. In a Calgary project, family therapists at the Alberta Children's Hospital and programmer/analysts have worked

together in the development of a decision support system. The primary objectives of the project were:

1. To assist social workers in providing more comprehensive and valid assessments, treatment plans, intervention strategies and practice evaluations in the context of a family therapy agency;
2. To introduce technology to provide this assistance in a productive and compatible fashion;
3. To demonstrate the use and value of computers in providing this assistance. (Gripton, 1983, p. 3).

This project began in September, 1982 and ended in August, 1985 at which time the final report was to be written. The software package will be tested and presented in workshops to prospective users. Results of projects such as this would be valuable information to include in a computer course if one was offered to social work students interested in working with families. However, the commitment to increase the knowledge base of social work in this area is still greatly influenced by the attitudes toward computers of potential researchers. It is important to study this issue further.

Social Work Attitudes Toward Computers

In order to analyse the concept of social work attitudes toward computers, it is important to first define the basic values of the profession itself. The general values of social work may be defined as follows:

> Social work originates from humanitarian ideals and democratic philosophy and has universal application to meet human needs arising from personal-societal interactions and to develop human potential. Professional social workers are dedicated to service for the welfare and self-realization of human beings; to the disciplined use of scientific knowledge regarding human and societal behaviour; to the development of resources to meet individual, group, national and international needs and aspirations; and to the achievement of social justice (Morales & Sheafor, 1980, P. 124).

A basic belief in the person as a unique individual to be treated with dignity is a very important concept supported by social work (Compton & Galaway, 1979). Such a strong value in human dignity and uniqueness will undoubtedly influence the attitude of those who are members of this profession. One can easily understand how most of us would assume that social workers find it difficult to accept the "depersonalized" world of computers.

Although the basic assumption of many authors in the literature is that social workers tend to have negative attitudes toward computers, very few actual studies have been carried out. In 1982, a research project was conducted at the University of Houston. The purpose of the study was to survey human service professionals in administrative positions regarding their attitudes toward computers (Pinkerton, Raffoul, 1982). Results of the analysis indicated that there was an association between the size of the agency and the attitude of the administrator, ($r = -.32$, $p < .01$) which showed that administrators of smaller

agencies were more positive about computers. Among other variables that were associated with a positive attitude were: years of experience (12 years or less), private agencies (as compared to public), and computer training. It is interesting to note that those with no training were more positive than those administrators with some training in computer use. There was no relationship between attitudes and use of computers outside the work setting, prior experience with computers, educational level and gender of the administrator. The authors concluded that although attitudes have tended to be negative in the past, "the survey findings reported here indicate that there may be some easing of these negative attitudes as computers become simpler to use, less expensive, and their adoption even more inevitable" (Pinkerton, Raffoul, 1982, p. 66).

A research project was also conducted at the School of Social Work, Western Michigan University, in 1982. The main purpose of this study was to evaluate a computer assisted instruction program for training child placing agency staff. Upon completion of CAI lessons, twenty-nine workers were surveyed for the purpose of program evaluation. It was found that attitudes toward CAI were quite positive among the respondents. Seventy-five percent of the sample felt positive about the use of computers for training, regardless of the amount of experience, training or source of training they had. Hence, the hypothesis that human service workers would not accept CAI was rejected (Flynn, 1982).

Another study was reported in 1983, comparing attitudes of graduate students in business, public affairs, nursing and social work programs, as well as personnel from one agency serving the aged (Sutton, Eller & Schcech, 1984). Questions were developed to study computer resistance in the following areas: employment/profession, social, control, humanistic, privacy and misuse, feedback and overall resistance. The mean scores of each group were compared. It is interesting to note that only 51 of the 229 social work students (22%) returned their questionnaires as compared to 44% of the business students, 27% of the public affairs students, 70% of the nursing students, and 38% of the agency personnel. In general, the mean scores of the social work students were lower than all other students. The agency group's mean scores were also lower than the total group, but higher than the social work students in most categories. Based upon the fact that the results of this study were purely descriptive in nature, no major conclusions in terms of relationships were reported.

Of the many books, articles and papers reviewed for this study, no reports of comparable studies were found. As previously mentioned in the 1982 study of human service administrators, only a few factors were related to a positive attitude toward computers. That study applied to administrators and may not be generalized to other areas of social work. Hence, in this study, it was important to

survey social workers at various levels of professional development in order to gain knowledge of those factors that would be relevant to students as well as professionals.

For the sake of comparison, it was also important to briefly look at how other helping professionals are adapting to the use of computers in their disciplines.

Computer Use in Other Helping Professions

When studying a relatively new concept, it is often difficult to conduct an adequate review of literature. One must often turn to similar areas of specialization, in this case psychology and psychiatry, in order to study how these disciplines have dealt with the topic in question and compare these findings with the current social work view. In his book, Using Computers in Clinical Practice, Marc D. Schwartz (1984) provides an excellent, comprehensive examination of the use of computers in the areas of psychology and psychiatry. The book is a compilation of various articles touching upon all areas of computer use such as administration, word processing, accounting, assessment and diagnosis, and also programs that assist during client interviews or test performances. The author also offers practical advice to mental health practitioners about the selection of hardware and software, since many professionals in these disciplines are in private practice. It is important for social workers to be aware of the

progress that has already taken place in these disciplines since many of the computer systems and programs being developed are directly related to areas of social work practice. Social workers need to be able to responsibly address the ethical implications of these practices, based upon their formal education and experience.

Researchers are predicting an increase in social work private practitioners in the future, which may likely increase the use of computers in social work as noted in these other disciplines (Gripton, 1983, LaMendola, 1985). One social worker who is committed to the integration of computers in social work practice is Gerald Bostwick, an assistant professor at the University of Michigan. He was interviewed by Practice Digest, a quarterly publication of the National Association of Professional Social Workers, in the winter of 1983. He spoke of his interests in family therapy and experiences with computers. He also has taught the use of computers to graduate students and has written an article about using computers in family therapy (National Association of Professional Social Workers, 1983). Bostwick discussed the problems he encountered in his practice because of the "knowledge explosion". He began to develop computer models to assist him which proved to be helpful. He went on to say:

> What I envision for the future is that the computer will make the job of social work easier. It will supplement the social worker's efforts by making information readily accessible. The question of compromising confidentiality as a

> result of computerization is not as big a problem as it is sometimes thought to be. Access to records requires a certain level of computer knowledge, which will, to some extent, limit those who have access. Also, if individual workers or agency departments have their own microcomputers, the information then stays with them alone. Furthermore, there are ways to protect information. In short, protection of confidentiality is less of a problem with computers than with a centrally located set of file cabinets (NAPSW, 1983, p.9).

It is interesting to note that, during the interview, Bostwick also mentioned:

> All social workers are going to be using computers at some point in the future. I'd say that within the next five years there will be a widespread acceptance and use of computers, both by agencies and by individual practitioners. Therefore, exposure to computer technology in schools of social work will greatly enhance the students' marketability and the ability of agencies to take full advantage of technological advances (NAPSW, 1983, p. 10).

These statements tend to compare with views from other researchers such as Schoech (1979, 1982) and Lefferts (1982). The general agreement found among them regarding the importance of social work students being exposed to computer training seems to demonstrate the demand for schools of social work to respond to this need.

Current Computer Courses

Throughout the literature, the need for more training of social workers in computer use was quite evident. In 1982, a report on the Council of Social Work Education Conference in New York, summarized that although the number

of schools offering computer or information system related courses was increasing, the need was not being met. The fact that students reported being asked about knowledge of computers and information systems by three out of five job interviewers was also mentioned. Another comment made was that faculty seemed to be more resistant than students to computers and their uses. One final concern of the Council was that computers were seen as a research or management tool by most social workers, and not as a direct service tool (Schoech, 1982).

Some articles were written by social work educators who are attempting to meet the need for training in computers. At the University of Michigan, Mutschler and Nurius (1984) described a course being offered to MSW students. The three basic objectives of the course are:

1. to develop skills in using research methods as an aid to interpersonal practice,
2. to develop skills in evaluating the effectiveness of interpersonal helping methods,
3. to acquaint students with the concepts and utility of client information systems as a means of summarizing, monitoring, and evaluating information on clients (Mutscher & Nurius, 1984, p. 87-88).

The course appears to have been very successful, and plans to offer the course to all students are in progress. The University has also offered workshops to practitioners,

which have also proven to be very successful. The authors state, however, that this can only be seen as a beginning and that "additional work in developing paradigms for teaching and utilization are needed to keep abreast of advancing technology and contemporary service needs" (Mutscher & Nurius, 1984, p. 93).

In Australia, a computer course is also being offered to social work students. Smith (1984) states:

> Social work students just beginning their professional education are born into, naturally exposed to, an 'information gathering society' based on computer technology. They will naturally expect that we, as social work educators, are equipped and will equip them to practice social work with the help of this technology. This expectation concerns not only the problems and values of a computerized society but the ways in which the technology is and can be used to deal with social problems.
>
> At present, the traditional concept of computers in social work education still centers on the teaching of specialized software packages for data analysis in research. Few schools of social work offer or require general courses on computers. Even when these courses are offered, the teaching is left to other disciplines. Thus, the computer needs specific to social work and the interface between social work and computer applications are not addressed (p. 65-66).

The author describes the course being offered at Monash University in Victoria, as an attempt to "introduce the students to fundamental computer concepts and principles and to the basic approaches used in applying computer technology to social work situations through demonstrations, discussions, and actual experience with computers" (Smith, 1984, p. 66). The author also stresses that the importance

of this course is to help "graduates be more aware of the implications of computer technology for social work and for society in general. The best way this can be achieved is through understanding and knowledge rather than ignorance and fear" (Smith, 1984, p. 70).

CUSSN, the newsletter previously mentioned, is an excellent source for educators to communicate to others in the field. Many of them are describing courses they are offering or are in the process of developing, and through this newsletter, are able to learn from each other how and what to include in their course outlines (Schoech, 1983, 1984).

Before concluding this discussion, it is important to mention another area of study that may have an effect on social work education; that being, the use of computer assisted instruction. In 1979, a study was conducted to investigate the possibility of using CAI for "increasing the research capacity of social workers" (Hansen, Nease & Patil, 1979, p. 1). The results of this study indicated that very little attention was given to this concept at that time. However, in 1981, Forrest Hansen conducted an evaluative study in Toronto in the use of CAI for teaching statistics to social work students. He concluded that the use of a computer helped those students that were having difficulty with mathematics, an area which is looked upon by many social work students with apprehension. Hansen further

suggested that since social work is becoming more scientifically oriented, computers would be an asset to social work education if they promote a more positive attitude toward research in students, as they did in this study (Hansen, 1981).

Flynn (1977) described the use of computer assisted instruction in a complex social policy course at the School of Social Work, University of Illinois. The author reported that some of the benefits from this program were "increased student satisfaction, evidence of efficient learning, successful simulation of social service procedures, and increase in course continuity" (Flynn, 1977, p. 58). It was found that members of faculty were freed of fifty hours per semester of instruction time, and were able to perform other tasks such as: "faculty-student conferences, research and writing, administrative responsibility, or development of additional programmed material" (Flynn, 1977, p. 57). Some of the problems experienced during the program were basically technical difficulties; for example, lack of theory or databases for social policy (since this article was written eight years ago, it is assumed that there have been improvements in these areas). Another difficulty arose in the acceptance of the program by some faculty members whose attitudes toward computers were negative. They tended to be "people-oriented" and based their arguments in a belief that "computers are inhuman and incapable of dealing

with real problems" (Flynn, 1977, p. 57). This situation indicated that faculty members, as well as students, needed to be treated with care in the introduction of information technology.

Computer assisted instruction is also currently being utilized in agencies. In Chicago, a CAI program is being developed to train the staff in the areas of child abuse and neglect (Nystrom, 1984). It is not the purpose of this project to go into more detail of this area of study; however, it is important to mention the development of this concept, one that will undoubtedly continue to grow.

Although there has been a substantial number of articles focusing upon the need for computer training of social workers and some describing actual courses, very little research has actually been done in answer to the questions of how and where computer training should be implemented in social work education. The nature of this study was in response to the need for more research in this area. In order to meet the needs of the social work community in Windsor, it was important to identify other relevant studies conducted in this location, as a starting point for this project.

Current Studies

Two previous surveys that have been conducted provide relevant information for this study. A project was carried

out in Windsor in 1983, addressing the needs of eighteen local agencies relating to the application of computer systems in their organizations (Chandler, Cockerham, Sparks & Spekkens, 1983). It was found that the use of microcomputers would be beneficial to these agencies in the areas of word processing, accounting, and databases related to direct practice, depending on the service delivery of each agency (the point was made that training would be required in the adoption of data bases). The report also serves as a good resource for those agency directors who are in the process of identifying their agencies' need for a computer system. The report is relevant to this study in the sense that it appears to provide evidence of potential for use of microcomputers in Windsor area agencies.

Another survey was conducted in Toronto on a much wider scale. Out of 253 social service organizations, 177 responded to the study. Factors such as: the agency's location, size, function and sources of income were taken into consideration in the findings (Gandy & Tepperman, 1984). It was found that 47% of the organizations were using computers. When the future plans of the agencies were considered (within the next 12 months) the figure of computer use rose to two thirds of the sample. The availability of mini and microcomputers was a definite factor in the increasing use of computers, because smaller agencies were able to afford them.

Although the application of computers was still very much in the administrative areas, the report indicated that future use will be increasing in areas such as case management, staff monitoring and treatment planning applications.

This survey indicated some of the main problems reported by agencies in their development of computer systems. They were:

1. lack of staff education
2. lack of detailed manuals
3. overcoming the staff's basic anxieties about new systems
4. availability of appropriate software (Gandy & Tepperman, 1984, p. 14).

A third study is now in progress at the University of Windsor. Sharon McMahon, assistant professor of the School of Nursing, has surveyed 1500 health-related professionals in the Windsor-Detroit area. She is studying the need for a computer network among these professionals. Reports such as the results of McMahon's study should serve as important references for other professionals in human services.

Summary

A brief history of the societal effects upon social work was presented in this chapter. A review of the current social work literature defined a need for training in the

use of computers in human services. It was found that only a few studies have been reported regarding the present use of computers for administrative purposes, and much less in the area of direct practice. It appears that social work attitudes toward computers are becoming more positive, and a few schools of social work are beginning to respond to the need for training by offering computer courses.

CHAPTER III

PROBLEM FORMULATION

The problem formulation will be presented in this chapter in the form of a research paradigm. The operational definitions of the study will also be included. The major hypothesis and its sub-hypothesis will be stated. In conclusion, a short description of the analysis of the respondents' interest in a computer course will be described.

Research Paradigm

In order to conduct this study, it was very important to operationally define the relevant variables being measured. To facilitate the definition of these variables, a research paradigm was developed and has been illustrated in figure 1.

Antecedent Variables	Independent Variables	Dependent Variables
Prior Conditions	**Classification**	**Outcome**
Age Gender Marital Status Number of Children Social Work Experience Education -background -class year -enrolment status	Type of Exposure to Computers -number of formal courses -access to computers -familiarity -experience -children's exposure	Attitude toward computers
	Practice Field -present -future	Introduction of Computer Course Status: -required -elective Program: -MSW -BSW
	Practice Setting -income source -computer use at agency (present and future plans	Continuing Education Program: (workshop or seminar) -University -Community College -Professional Group (OAPSW)
	Practice Roles -present -future expectations	
	Personal Computer Use -present use -future expectations	

Figure 1: The Research Paradigm

Operational Definitions.

For the purpose of clarifying terms in this study, the following major definitions have been included:

Students In this study, students are persons who were registered full or part time in the social work BSW 1984-85 program at the University of Windsor.

Professionals This term is used to describe social workers who are members of the OAPSW Windsor-Essex County Branch, which may include MSW and BSW students. This category also included directors from 30 United Way agencies selected because they were judged to be offering primary social work services. One representative from each social work department at three Windsor hospitals, two Windsor school boards and the social services of Windsor were also included in this definition, as well as the executive directors from the two Windsor Children's Aid Societies. All members of the faculty at the School of Social Work during the 1984-85 semesters were also included in this definition, as well as the sessional professors involved in the BSW program.

Type of Exposure to Computers This variable refers to the number of formal computer courses taken by the respondent, the

number of locations respondents have access to a computer, and the amount of exposure the respondents' children have had to computers. The amount of computer experience and familiarity with use of microcomputers in human services are also part of this definition.

Amount of Children's Exposure

In addition to being defined as a type of exposure, this variable may be further described as being the number of locations the respondents' children have been exposed to computers; for example, at home, elementary school, etc.

Computer Courses

This term denotes the total number of formal computer courses taken by a respondent.

Familiarity

This term represents the respondents' self-perception of their knowledge of the use of microcomputers in human services. The variable is measured at the ordinal level, utilizing a scale of a) not familiar at all, b) somewhat familiar, c) familiar and d) very familiar.

Computer Experience An ordinal variable measuring the amount of computer experience self-rated by the respondents, based upon a scale of a) no experience, b) a little experience, c) a moderate degree of experience and d) a great deal of experience.

Career Goals This variable means the percentage of time the respondent is presently spending in a particular social work role at an agency or field placement (present role). The term also defines the percentage of time the respondent would like to spend in a particular social work role five to ten years from now (future role expectations).

Hypothesis Statement

Based on the assumptions of this writer and the review of literature, the major hypothesis states:

> There is an association between social work students' and professionals' attitudes toward computers and the following independent and antecedent variables:
>
> a) type of computer exposure.
>
> b) age, gender, education (background, class year, enrolment status), marital status, number of children and years of paid social work experience.
>
> c) present field of practice and percentage of time spent in a present role at an agency or field placement.

d) future field of practice and percentage of time spent in future circle expectations at an agency.

e) agency or field placement's source of income.

f) current use and future plans for use of computers in an agency or field placement, as well as the respondents' personal present use and expected future use of computers.

The independent variable "type of computer exposure" has been defined in the previous section; however, it is important to elaborate on the classification of the amount of children's exposure to computers. This classification has been included in the study based on the assumption that the child's experiences would be related to the parents' attitudes toward computers. The family life cycle theory tells us that a family evolves and develops in conjuction with the developmental stages of the children; hence, the parents would possibly be exposed to attitudinal changes in relation to what their children are learning (Rhodes, 1977, Bloom, 1980).

This writer also assumed that the respondents' attitudes toward computers would be associated with interest in a social work related computer course and/or seminar; hence, the sub-hypothesis states:

> Social work students' and professionals' attitudes toward computers are associated with their level of agreement in the introduction of a social work related computer course and/or seminar.

Respondents' Interest in a Computer Course

In addition to the analysis of the respondents' attitudes toward computers, their interests and opinions about including a computer course in a social work program were analysed in this study. In this section of the data analysis, respondents were asked how, when, and where a computer course should be implemented in a program. The respondents' interest in actually taking a course and their opinions about course content, computer hardware and software to be used were also included in the analysis.

Summary

This chapter has included the research paradigm, operational definitions, the major hypothesis and its sub-hypothesis, and a short description of the analysis of data related to the respondents' interests and opinions about a computer course being offered in a social work program.

CHAPTER IV

METHODOLOGY

In this chapter, the classification of the study and selected research design will be described, as well as the rationale for its use. There will also be a brief discussion focusing upon the the description of the sample, method used for data collection and how the data was analysed. In conclusion, the limitations of the study will be noted.

Classification of Study and Research Design

Research studies all have a common goal: to increase the level of knowledge in the area being studied. The main purpose of this analysis was to seek relationships between the variables measured. Although many researchers have classified this type of design as quantitative descriptive (Atherton & Klemmack, 1982; Anderson, Curtis, Sheehan & Perkins, 1978; Polansky, 1975; Reid & Smith, 1981), Tony Tripodi extends this classification into a more specific term defined as associational, which encompasses "comparative designs for defining empirical associations between variables" (1981, p.198). Hence, Tripodi's associational design was selected for this study in order to attain the required objectives. In addition to meeting the

needs of the first two levels of knowledge which are: hypothesis researchability, measurement, accuracy and representative sampling, the study must also show evidence of attaining the third level of knowledge as well. In more specific terms, this means that there must be evidence of empirical relationships between two variables and the ability to replicate or repeat the results of the study. This level of knowledge requires statistical techniques to be used in order to show the degree of relationship between variables, but does not show cause-effect relationships. Tripcdi states:

> While associations are necessary for cause-effect knowledge, they are not sufficient. Two variables that are associated are not necessarily causally related. In other words, changes in one variable do not necessarily lead to, produce, or cause changes in another variable (1981, p. 202).

In an associational design such as this, where two groups are compared, it is possible to use the Static Group Comparison Design (Design 3B, Tripodi, 1981). In the text, Social Work Research and Evaluation, Tripodi states:

> A no-treatment comparison group need not be included in this design. For each group, measurements are obtained on the dependent variable. Statistically significant differences between the dependent variable would indicate that associational knowledge could be drawn (1981, p. 218).

Tripodi goes on to say that inferences about the direction of the associations between variables can be done with this design as well as determining statistical differences between the groups on an independent variable (1981).

Population and Sampling Plan

In order to analyse the respondents' perception of the importance of computer use in social work, it was essential to survey social workers at all levels of study and practice, from students to executive directors. To include all these groups provided a good variety in terms of types of workers such as, administrators, clinicians and community development workers. The four groups of students provided a variety in terms of age and experience, as well as their specific interests in indirect or direct practice. The students would also be personally involved in any future possible changes in the social work program.

In this study the student population consisted of all undergraduate students in the University of Windsor social work program during the spring of 1985. Social work graduate students were not included in the student sample. It was assumed that some of them would be surveyed as members of the Ontario Association of Professional Social Workers.

The population of professionals was made up of executive directors from Windsor's two Children's Aid Societies, three hospitals, two school boards and 30 United Way agencies judged to be most likely to employ social workers. In addition to these professionals, all social work practitioners who are members of the Ontario Association of Professional Social Workers, Windsor-Essex

County Branch, were surveyed. Questionnaires were also sent to twenty-two members of the faculty in the School of Social Work.

Questionnaires were distributed to the total populations of executive directors, faculty, CASSW members and students. Thus, the sample consisted of those respondents who completed and returned their questionnaires.

Data Collection Method and Instrument

The most practical instrument to be used in a survey such as this would be that of a questionnaire. It has been stated:

> Questionnaires have been very popular since they have been easy to quantify for computer analysis, and are rather inexpensive. The inexpense allows for larger samples and/or larger areas to be studied particularly when mailed. When anonymous, the questionnaire is better for both socially acceptable and socialllly unacceptable questions as it seems that the subject is less likely to lie than when data are gathered using other methods. Due to flexibility it can cover many subjects simultaneously. When mailed, the questionnaire does not require the researcher's presence. After the research is completed the researcher has the completed questionnaire to verify his findings for justification if questions are raised concerning the reliability of the researcher's findings (Anderson, Curtis, Sheehan & Perkins, 1978, p. 41).

The questionnaire was composed of three separate sections covering areas such as: 1) demographic data: age, gender, educational level, career goals, etc. 2) implementation of a computer course: questions relating to the respondents' opinion regarding the University of Windsor School of Social

Work offering a computer course in its undergraduate and graduate programs or in a continuing education program for professionals, and 3) attitudinal data: a section consisting of statements in which respondents would circle a number that would best represent their attitude about the statement made. The responses were scored by a rating given to each category included in this likert-type scale; for example, a statement such as: "computers can offer many benefits to Social Work" would be presented. The respondents would then circle the number in the scale from 1 to 6 to correspond to the following categories: strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree. The category of "do not know" was also included, represented by the number 7. However, in some cases, it was necessary to exclude this category from some of the data analysis requiring the measurement of mean scores and the squared multiple correlation.

This type of scaling has generally been used to measure variables such as attitudes and levels of interest because they are "the easiest scales to construct, make fewer assumptions than other scaling methods, it is easier to devise suitable items and because of their methods of selections and item analysis, their content is less likely to be unrepresentative than other scales" (Lemor, 1973, p. 182).

The instrument was pre-tested on seven MSW students from the University of Windsor, one MSW student from Wayne State University, and another MSW student from the University of Michigan. There were a few miror revisions made, based on the comments of the students.

The reliability of the instrument was tested by statistical analysis, using the coefficient alpha (or index of internal consistency), a correlation coefficient (Atherton & Klemmack, 1982). Results of this analysis indicated that the instrument is very reliable since the coefficient alpha = .89, a high correlation. In individual item to total analysis, the item-total correlation (which is the same as Pearson's r) ranged between .31 to .64. Similarly, the squared multiple correlation (R-Square) ranged from .21 to .46 (Atherton & Klemmack, 1982).

During the first two weeks of April, 1985, the students were surveyed during class time. In order tc include as many students as possible, the survey was conducted in all sections of required courses 47-118, 47-237, 47-337, and 47-447. The students were informed that their participation in the survey was strictly on a voluntary basis.

During the 1984-85 school year, 459 students were registered in the social work program on a full or part time basis. A response to the survey was obtained from 319 (69.5%) students. Three of the responderts returned incomplete questionnaires, which reduced the number to 316

or 69.3% of the student population. The remaining 30.7% of the students did not participate in this study because they were absent on the day of the survey.

In early May, 1985, the questionnaire was mailed to the community professionals and the members of faculty. These respondents were also informed of the voluntary participation and were encouraged to return their completed questionnaires within three weeks. The total number of questionnaires mailed to the community was 290. One may assume that 50 to 60% of all social work professionals in Windsor are CAPSW members; 230 of the total number of questionnaires mailed to the community were sent to these professionals. The remainder of the questionnaires were sent to 22 members of the social work faculty and 38 executive directors from the specified United Way and Windsor agencies.

The number of returned questionnaires was 144 or 49.7% of the community survey. From this number, four were undelivered, ten were sent back due to duplication (for example, a respondent being a member of both CAPSW and the faculty), and one was not completed, reducing the number of returned questionnaires by 15. Hence, the final number of unduplicated, delivered and completed questionnaires was 129 or 46.9% of the professional population. The final total number (students and professionals) of completed and returned questionnaires was 445 or 60.9% of the total number of 731.

Method of Data Analysis

With the use of a computer and the Statistical Analysis System (SAS), the data was tabulated and analysed (SAS Institute Inc., 1983). Univariate analysis and descriptive statistics were selected to study the demographic data. Inferential statistics such as F tests, were used to determine if there were any significant relationships being measured. In the analysis of multiple regression, a procedure called stepwise maximum multiple correlation was utilized to test the strength of the relationships by R-Square, the squared multiple correlation coefficient.

Limitations of Study

Since the sample of this study was not selected at random, the issue of generalization will be left to the readers to estimate the extent to which the findings apply to their respective areas. The results of the analysis may only apply to areas geographically similar to Windsor. It is important to note, however, that the total population of the student and faculty groups were surveyed, eliminating the need for random sampling. Hence, the issue of generalization may only apply to the professional group. This is the only group that may be defined as selective, since the OAPSW members surveyed represent approximately 50 to 60% of the total number of professional social workers in the Windsor-Essex County area.

Another limitation to this study may be centered around the fact that respondents participated on a voluntary basis and therefore, those who were interested in the subject matter would be more likely to become involved, which may have biased the results of the data.

Summary

This chapter described the classification and design of the research study. The method of data collection and the instrument used to fulfill the purpose of the study were discussed. It was noted that the response rate of the students was 69.3% and the response rate of the professionals was 46.9%. The total response rate of the survey was 60.9% of the population. A brief summary of how the data was analysed and the limitations of the study were also included in the chapter. The following chapter will be a detailed description of the data analysis.

CHAPTER V

ANALYSIS OF DATA

In this chapter, results of the data analysis will be presented in four sections. First, a description of the sample will be provided by means of a univariate analysis. The second section will present an analysis of data describing the respondents' use of computers. The third part of the chapter includes the presentation and interpretation of associations found between the respondents' attitudes toward computers and the previously defined antecedent and independent variables, as stated in the major hypothesis and sub-hypothesis. The chapter's final section is entirely devoted to the analysis of data relating to the respondents' interest in taking computer courses and their opinions about how, when, where, and the nature of such courses which should be offered.

It is important to note that throughout the chapter, the data findings were divided into sub groups of students and professionals. This procedure was necessary in order to analyse the need for computer training as perceived by the two groups. If the professionals identified a need for computer training in the community, it was important to study and compare the students' perception of this need and in turn, analyse their interests in seeking such training.

If they also perceive computer training as a need, then action could be taken in the form of a course offered to students and a continued education program for the training of professionals.

I. Description of the Sample

Gender.

The student group was made up of 260 (82.3%) females and 56 (17.7%) males. There were 88 (68.7%) females in the professional group, as compared to 40 (31.3%) males. A distribution of the gender of each group appears in Table 1.

Table 1: Gender of Respondents

Gender	Students	Professionals
Male	17.7%	31.3%
Female	82.3	68.7
Total[a]	100.0% (N=316)	100.0% (N=128)

[a] one response missing.

Age.

The age distribution of the groups may be seen in Table 2. As one would expect, the majority of students were between the ages of 20 to 29 years old (76.1%), with the mean age being 23.6 years and the standard deviation being 6.7 years. The highest percentage of professionals were

between the ages of 30 tc 39 years (34.4%); however, the percentage (33.6%) of 20 to 29 year old professionals ran a close second, with the mean age for this group being 35.3 years and the standard deviation being 13.0 years. It is important tc note that the number of students was high in this survey as compared to the professional group. As a result of this fact, the age distribution of the total group was positively skewed.

Table 2: Age of Students and Professionals

Age	Students	Professionals
under 20	10.9%	
20-29	76.1	33.6%
30-39	8.9	34.4
40-49	3.5	17.6
50+	.6	14.4
Total[a]	100.0% (N=313)	100.0% (N=125)
Mean	23.6	35.3

[a] 7 missing responses.

Marital Status.

The majority of students were single (81.3%), as compared to the professional (24.8%) group. The largest percentage cf respondents in the professional group (64.3%) were married as presented in Table 3.

Table 3: Marital Status of Respondents

Marital Status	Students	Professionals
Single, never married	81.3%	24.8%
Married, common-law	10.8	64.3
Separated	2.8	3.9
Divorced	5.1	7.0
Total	100.0% (N=316)	100.0% (N=129)

Children.

Most of the students did not have any children (84.8%). The largest percentage of professionals also did not have any children (47.3%), although 24% of them had a family of two children. The complete distribution of the number of children appears in Table 4.

Table 4: Number of Children

Number of Children	Students	Professionals
0	84.8%	47.3%
1	4.4	13.2
2	4.4	24.0
3+	6.4	15.5
Total	100.0% (N=316)	100.0% (N=129)

Education.

The distribution of the educational background of the groups may be seen in Table 5. Two hundred and sixty four (83.5%) students described themselves as high school graduates in terms of their highest level of education attained at the time of the survey. The educational background of the professional group is almost equally distributed between those holding a BSW (45.7%) and an MSW (42.6%).

Table 5: Educational Background of Respondents

Educational Level	Students	Professionals
Secondary School	83.5%	.8%
B.A.	9.5	3.1
B.S.W.		45.7
M.S.W.		42.6
Doctorate		4.7
Other [a]	7.0	3.1
Total	100.0% (N=316)	100.0% (N=129)

[a] Other includes: College Diploma, Early Childhood Education Diploma, Child Care Work Diploma, Teacher's College Diploma, Registered Nurse, Bachelor of Environmental Studies, Bachelor of Science in Nursing, Master of Education, Master of Arts, Master of Religious Studies, L.L.B., Post Graduate Studies.

Student Enrolment Status and Class Year.

The majority of the students (292 or 92.4%) were involved in the social work program on a full time basis. Twenty four (7.6%) students were attending school part time. The distribution of students in relation to their present class year is illustrated in Table 6.

Table 6: Students' Present Class Year

Year	Frequency	Percentage
1	122	38.6%
2	90	28.4
3	52	16.5
4	52	16.5
Total	316	100.0%

Social Work Experience.

Respondents were asked to state how many years of paid social work experience they had. Although 20.3% of the students have worked from 1 to 9 years, the majority of them have had no paid social work experience. The professionals tended to have 10 years or less (51.9%) of actual working experience. In the category of professionals with no work experience, it is important to note that 11 (9.3%) of them were also full time students and 9 (7.6%) of the

professionals were part time students. As was previously mentioned, an assumption was made that BSW and MSW students would likely be included in the CAPSW survey. It was found that, from these 20 professionals, one was a full time BSW student, four were professionals attending university classes, five were part time MSW students and ten were full time MSW students. These findings may be seen in Table 7.

Table 7: Paid Social Work Experience

Years	Students	Professionals
0 [a]	79.7%	7.8%
1-9	20.3	51.9
10-19		27.1
20+		13.2
Total	100.0% (N=316)	100.0% (N=129)

[a] 1 year includes 1-11 months of paid experience.

Major Field of Practice.

Respondents were also asked to describe the major field of practice in their present position and what field of practice they would prefer in 5 to 10 years from now. A comparison of the present and future goals of the students appears in Table 8; the professional group's responses are illustrated in Table 9.

Although the students seem to be presently interested in child and family services, their future goals tend to focus

Table 8: Students' Comparison of Fields of Practice

Students' Fields of Practice	Present[a]	Future[b]
Children's Services	24.5%	17.2%
Family Services	23.6	19.4
Services for Aged	6.4	5.1
Health Services	7.0	8.6
Justice/Corrections	14.0	16.2
Welfare/Economics/Labour	1.6	3.2
Education/Schools/University	12.4	15.3
Recreation	1.9	1.3
Private Practice	2.9	8.3
Other[c]	5.7	5.4
Total	100.0% (N=314)	100.0% (N=314)

[a] Present Fields: 2 missing responses.

[b] Future Fields: 2 missing responses.

[c] Other includes: undecided, politics, sociology, industrial social work, generalist, clinical psychology, addiction rehabilitation, public relations, advocacy, home economics, mental retardation.

toward fields of practice in justice/corrections, education/schools/university and private practice. There is also a slight increase of interest in health services, as well as welfare/economic/labour fields.

In the professional group, there is also a decrease in percentage noted in the fields of child and family services, as well as health, justice/corrections, and welfare/economic/labour fields. An increase in the percentage of interest was found in fields of services for

Table 9: Professionals' Comparison of Fields of Practice

Professionals' Fields of Practice	Present	Future[a]
Children's Services	27.9%	14.9%
Family Services	20.1	19.5
Services for Aged	2.3	7.0
Health Services	14.0	12.5
Justice/Corrections	5.4	2.3
Welfare/Economic/Labour	7.0	4.7
Education/Schools/University	14.7	18.8
Private Practice	.8	10.9
Other[b]	7.8	9.4
Total	100.0% (N=129)	100.0% (N=128)

[a] Future Fields: 1 missing response.

[b] Other includes: unemployed, retired, non-social work careers.

the aged, education/schools/university, and private practice.

II. Use of Computers

Access to Computers.

Although some of the questions pertaining to use of computers were not applicable to all respondents, the results of the answers are important to note. The respondents were asked if they had access to a computer at home, school, field placement or workplace. The results of these findings as related to the students' responses appear in Table 10; the professional group's responses are shown in Table 11.

Table 10: Students' Access to Computers

Location	Student Class Year 1 (N=122)	2 (N=90)	3 (N=52)	4 (N=52)
No Access	54.9%	48.9%	42.3%	
Home	22.1	22.2	26.9	11.5%
School	32.0	43.3	34.6	100.0
Field Placement			17.3	13.5
Workplace	1.6	1.1	1.9	1.9

It is interesting to note that the largest percentage of students having access to computers at home were in the third year (26.9%). Obviously, the fourth year students would have the most access at school since they were taking a research course involving mainframe computers at the time of the survey. The third year students seemed to have more access to computers (17.3%) at their field placements. Less than 2% of the students had access to a computer at their workplace, since most of them were not employed.

Table 11: Professionals' Access to Computers

Location	Professionals (N=128)
No Access	49.2%
Home	26.6
School	16.4
Field Placement	.8
Workplace	13.4

Thirty-four (26.6%) professionals had access to a computer at home. The workplace offered 13.4% of the professionals access to a computer. Sixteen of the professionals having access at school were full and part time MSW students as well as one BSW student. One full time MSW student had access to a computer at a field placement.

Agency Use of Computers.

According to respondents working or placed in agencies, 108 or 47.4% reported that their agencies were using computers. Within the next five years, as perceived by the respondents, there will be an increase of 25% of agencies planning to use computers, as seen in Table 12. When these agencies with future plans for computer use were added to those currently using computers, the number rose to 165 or 72.4% of the total sample of agencies that are currently using or planning to use a computer within the next five years. These results are quite similar to Gandy and Tepperman's findings in their 1984 Toronto survey.

Table 12: Agency Use of Computers

Plans for Use	Frequency	Percentage
No plans presently	58	25.4%
Presently using	108	47.4
Within next 12 months	35	15.4
Within next 2-3 years	17	7.5
Within next 4+ years	5	2.2
Do not know	5	2.2
Total[a]	228	100.0%

[a] Missing or not applicable for 217 respondents (non-workers or students without placements).

Respondents' Personal Use of Computers.

The respondents' present personal use of computers in the workplace and their expected use in the future were compared and analysed. Results of this analysis may be seen in Table 13. By comparing the percentages of present and future use of computers, one notes that there is a significant increase in both the students' (38.4%) and professionals' (36.3%) expected use of computers in the future.

It is important to add that only 25 (8.4%) students reported that they were not expecting to use computers in the future. The remaining 133 (44.7%) did not know if they would be using computers. In the professional group, 14 (11.4%) respondents did not expect to use computers in the future, whereas the remaining 38 (30.9%) did not know if

they would use computers in the future. This high percentage of uncertainty in both groups may be an indication that the respondents might be better able to predict their future use of computers if they were more knowledgeable in the area of computer use in social work.

Table 13: Respondents' Personal Use of Computers

	Computer Use			
	Present		Expected Future	
Groups	N	Percent	N	Percent
Students	119	8.4%	297	46.8%
Professionals	112	21.4	123	57.7

Note: In present use, 197 responses missing in student group and 17 responses missing in professional group. In expected future use, 19 responses missing in student group and 6 responses responses missing in professional group.

Fields of Practice and Computer Use.

Upon further study of the respondents' personal use of computers, it was found that students presently using computers were currently in the fields of children's services (4.2%), family services (1.7%), services for the aged (.8%), justice/corrections (.8%), and private practice (.8%), as illustrated in Table 14.

By comparison, there is an increase in the percentage of expected future use of computers in all present fields of

Table 14: Students' Fields of Practice and Computer Use

Fields of Practice	Present Field		Future Field	
	Presently Using Computers [a] (N=118)	Expected Future Use of Computers [b] (N=295)	Presently Using Computers [a] (N=118)	Expected Future Use of Computers [b] (N=295)
Children	4.2%	9.8%	2.5%	6.1%
Family	1.7	12.2	.8	9.2
Aged	.8	3.4		2.7
Health		3.7		4.1
Justice/Corr	.8	5.1	1.7	5.4
Welfr/Econ/Latr		.7		1.7
Educ/Schl/Univ		6.4	.8	8.1
Recreation		1.0		.7
Private Prac	.8	2.0	2.5	5.8
Other [c]		2.4		2.4

[a] 198 responses missing.

[b] 11 responses missing.

[c] Other includes: undecided, politics, sociology, industrial social work, generalist, clinical psychology, addiction rehabilitation, public relations, advocacy, home economics, mental retardation.

practice. A similar finding is shown in the comparison of present and expected future use of computers and the students' desired future fields of practice.

Table 15 shows that there are professionals presently using computers in all fields of practice, with the exception of recreation. The highest percentage of computer use (7.1%) was found in the field of education/schools/university, with professionals in

children's services (3.6%) being the second highest group of computer users. As was found in the student group, an increase in the expected future use of computers was noted in all present fields of the professionals. Similar results are also shown in the comparison of present and expected future use of computers and the professionals' desired future fields of practice. It is interesting to note that the students' and professionals' shift from child and family services to desired future fields of education/schools/university, and private practice was also reflected in this analysis, as was previously shown in Tables 8 and 9.

Table 15: Professionals' Fields of Practice and Computer Use

Fields of Practice	Present Field		Future Field	
	Presently Using Computers [a] (N=112)	Expected Future Use of Computers [b] (N=123)	Presently Using Computers [a] (N=111)	Expected Future Use of Computers [b] (N=122)
Children	3.6%	15.4%		5.7%
Family	1.8	13.8	2.7%	11.5
Aged	.9	.8	.9	1.6
Health	2.7	6.5	2.7	5.7
Justice/Corr	.9	5.7	.9	2.5
Welfr/Eco/Labr	1.8	4.9	.9	3.3
Educ/Schl/Univ	7.1	8.1	8.1	13.1
Private Prac	.9	.8	2.7	9.8
Other [c]	1.8	1.6	1.8	4.1

[a] 17 responses missing in present field (18 in future field).

[b] 6 responses missing in present field (7 in future field).

[c] Other includes: unemployed, retired, non-social work careers.

Methods of Practice and Computer Use.

A comparison was also made between the respondents' present personal use of computers, expected future use and their methods of practice. Results of this analysis are presented in Table 16 for the student group and Table 17 for the professionals. The analysis of the respondents' methods was divided into three categories: under 25% of time spent in a role, 25-49% of time spent in a role and 50% (and over) of time spent in a role. The reader is cautioned that there

may be some duplication in the frequency results since most respondents perform numerous roles in an agency or field placement and answered this survey question by including the percentage of time they spent in each role.

The highest percentage of students presently using computers (2.5%) were spending under 25% of their time in community organization and development. In the professional group, the highest percentage of those presently using computers (8.0%) were spending 25 to 49% of their time in an administrative role. Both groups are expecting to use computers in all specified methods of practice in the future. A particularly interesting finding is that students (12.8%) and professionals (23.6%) with future goals of spending 50% or more of their time in direct practice are expecting to use computers in the future.

Table 16: Students' Practice Methods and Computer Use

Method	Present Agency Role		Future Desired Role	
Time Spent in Role -under 25%	Presently using Computer [a] (N=119)	Expected Future use of Computer [b] (N=297)	Presently using Computer [a] (N=119)	Expected Future use of Computer [b] (N=297)
Direct Service		1.3%	2.5%	6.4%
Comm. Org./Dev.	2.5%	3.4	3.4	16.2
Policy/Planning	.8	3.0	1.7	12.5
Administration	.8	3.7	1.7	11.1
Research	1.7	2.7	2.5	10.8
Teaching	.8	2.4	3.4	13.5
Staff Dev.	.8	3.4	1.7	12.1
Supervision	1.7	3.7	.8	10.8
Consultation	1.7	5.7	1.7	11.1
Field Instruc.	.8	4.4	.8	8.1
Other [c]	.8	1.3		
Time Spent in Role-25 to 49%				
Direct Service	.8%	3.4%	.8%	7.7%
Comm. Org./Dev.	.8	1.7		4.4
Policy/Planning			.8	3.0
Administration				6.0
Research		.7	.8	1.3
Teaching		.7		5.4
Staff Dev.		.7		.3
Supervision	.8	1.7	.8	.3
Consultation		1.0	.8	1.7
Field Instruc.		.3		.7
Other [c]		1.0		

Continued

Method	Present Agency Role		Future Desired Role	
Time Spent in Role 50% & over	Presently using Computer [a] (N=119)	Expected Future use of Computer [b] (N=297)	Presently using Computer [a] (N=119)	Expected Future use of Computer [b] (N=297)
Direct Service	2.5%	14.1%	3.4%	12.8%
Comm Org./Dev.		1.0		1.3
Policy/Planning				2.0
Administration		.3	.8	5.1
Research		.7		1.3
Teaching	.8	.3	1.7	3.7
Staff Dev.				.3
Supervision	.8	.3		
Consultation		.3		1.3
Field Instruc.				.3
Other [c]				.7

[a] 197 responses missing.

[b] 19 responses missing.

[c] Other includes: non-social work roles.

Table 17: Professionals' Practice Methods and Computer Use

Method	Present Agency Role		Future Desired Role	
Time Spent in Role -under 25%	Presently using Computer [a] (N=112)	Expected Future use of Computer [b] (N=123)	Presently using Computer [a] (N=112)	Expected Future use of Computer [b] (N=123)
Direct Service	2.7%	8.1%	.9%	5.7%
Comm. Org./Dev.	4.5	19.5	.9	15.4
Policy/Planning	5.4	19.5	.9	14.6
Administration	2.7	13.0	3.6	15.4
Research	4.5	9.8	5.4	17.1
Teaching	1.8	4.1	2.7	6.5
Staff Dev.	6.3	17.1	.9	5.7
Supervision	4.5	15.4	1.8	13.0
Consultation	3.6	16.3	4.5	15.4
Field Instruc.	1.8	8.9	3.6	7.3
Other [c]	.9	4.1		.8
Time Spent in Role-25 to 49%				
Direct Service	3.6%	6.5%	1.8%	8.1%
Comm. Org./Dev.	.9	1.6	3.6	3.3
Policy/Planning	2.7	4.9	3.6	7.3
Administration	8.0	15.4	2.7	8.9
Research		.8		.8
Teaching		.8	3.6	5.7
Supervision	.9	1.6	1.8	2.4
Consultation		2.4	.9	1.6
Field Instruc.		.8		.8
Other [c]		1.6		.8

Continued

Method	Present Agency Role		Future Desired Role	
Time Spent in Role -50% & over	Presently using Computer [a] (N=112)	Expected Future use of Computer [b] (N=123)	Presently using Computer [a] (N=112)	Expected Future use of Computer [b] (N=123)
Direct Service	5.4%	27.6%	6.3%	23.6%
Comm Org./Dev.		.8		1.6
Policy/Planning		4.9	.9	5.7
Administration			.9	1.6
Research				
Teaching	2.7	3.3	3.4	4.9
Staff Dev.				
Supervision	.9	1.6		.8
Consultation			.9	1.6
Other [c]			1.8	4.1

[a] 17 responses missing.

[b] 6 responses missing.

[c] Other includes: unemployed, retired, non-social work roles.

Respondents' Attitudes toward Computers.

An attitude scale of 20 items was constructed and included in the second part of the questionnaire (see Appendix A). Items 1, 3, 4, 6, 7, 8, 10, 11, 12, 13, 16, and 18 were taken from Sutton, Eller & Schoech (1984) and item 2 from Hansen (1981). The remainder of the items were developed by this writer. Each item may be seen in Table 19 and is ranked according to the highest mean score of the total sample.

Table 18: Attitude Scores, Means and Standard Deviations

Scale = Strongly Disagree - Strongly Agree	1	2	3	4	5	6	Totals	Means	Stand. Dev.
6. Exposure to computer technology in Schools of Social Work will enhance the student's marketability for future employment.									
Freq.	8	12	27	101	162	131	441	4.79	1.12
12. Computerization may (not) eliminate the type of career I hope to obtain.									
*Freq.	12	17	52	87	130	140	438	4.66	1.29
1. My overall attitude toward the use of computers in Social Work is positive.									
Freq.	4	13	38	119	181	87	442	4.63	1.04
18. Computerized information systems increase the flow of communication within an organization.									
Freq.	6	21	49	137	163	62	438	4.40	1.10
3. Computers may become a basic tool of Social Work Practice.									
Freq.	18	24	38	116	180	66	442	4.39	1.24
20. Social workers will be able to evaluate their practice more efficiently with computers.									
Freq.	11	23	49	140	149	67	439	4.35	1.17
2. I would feel comfortable working with computers.									
*Freq.	11	49	64	78	144	95	441	4.32	1.38
4. The use of computers in my profession will free me to do more interesting and imaginative types of work.									
Freq.	12	27	69	142	135	56	441	4.20	1.19
5. Learning or relearning the necessary skills to work with a computerized information system would (not) be difficult for me.									
*Freq.	18	46	95	91	146	46	442	3.99	1.32

Continued

Strongly Disagree - Strongly Agree Scale = 1	2	3	4	5	6	Totals	Means	Stand. Dev.
15. Much greater emphasis in Social Work Education should be placed on developing computer literacy in students.								
Freq.	11	50	77	149	101	51	439	3.98	1.25
10. Computers are (not) dehumanizing by nature.								
*Freq.	31	41	96	107	110	57	442	3.89	1.41
8. Computers are very easy to work with.								
Freq.	22	43	116	156	85	19	441	3.67	1.17
11. I like working with computers because there is something exciting and fascinating about them.								
Freq.	26	58	93	143	90	27	437	3.67	1.28
17. There are very little adverse effects on people working with computers.								
Freq.	19	62	118	148	78	13	438	3.65	1.10
7. Computerized information systems (do not) threaten the privacy of the clients that my profession serves.								
*Freq.	27	61	142	79	94	36	439	3.59	1.35
19. Computer assisted counselling would (not) harm a client/worker relationship.								
*Freq.	41	69	118	112	72	24	436	3.41	1.34
14. Computers should (not) only be used for research and administrative purposes in Social Work Practice.								
*Freq.	46	85	101	100	79	29	440	3.38	1.42
13. Computers help bring about a better way of life for the average person.								
Freq.	25	74	130	147	53	10	439	3.36	1.14

Continued

Strongly Disagree - Strcngly Agree Scale = 1	2	3	4	5	6	a Totals	Means	Stand. Dev.
16. Computer specialists and infcrmation systems designers are (not) more concerned with the technical aspects of of a computer system than with human aspects.								
*Freq.	42	103	136	102	40	13	436	3.08	1.22
9. Computers should be utilized to work directly with clients.								
Freq.	105	80	98	110	35	11	440	2.84	1.39

* Reflected scores for items 2, 5, 7, 10, 12, 14, 16, and 19.

a Variance frcm Total of 445 due to missing respcnses.

Note: Insertion of (not) was necessary in order to match statements with reflected frequencies, with the exception of item 2, in which "not" was omitted from the statement in order to match its reflected frequency.

The most favourable item (6) indicates that the respondents agreed that "exposure to computer technology in schools of social work would enhance the students' marketability for future employment". The seccnd item that met with the most favcur was that the respondents did not seem to be intimidated by the thought of "computerization eliminating the type of career they hoped to cttain" (item 12). The overall attitude of the respondents toward computers was positive as indicated by the third highest item (1) and the fact that most of the mean scores were above the midpoint of 3.5.

A comparison of the two groups' ranked mean scores appears in Table 19. In this analysis, one notes that the professionals ranked "exposure to computer technology as an enhancement to student marketability" (item 6) slightly lower than the students. It appears that the professionals were also slightly less intimidated by the thought of "computerization eliminating the type of career they hope to obtain" (item 12), as compared to the students. As one observed the mean scores, it became apparent that attitudes toward "utilizing computers to work directly with clients" appeared to be negative since item 9 was the least favoured item among both groups. The belief that "computer specialists and information systems designers are more concerned with technical rather than human aspects of a computer system" (item 16) was also met with disfavour among the students and professionals.

The sum total of these items was computed to produce an index score, which allows one to analyse the dependent ordinal variable using interval level procedures (Atherton, Klemmack, 1982). One problem that arose from the use of the index score was that some respondents did not answer all 20 questions, and obviously, their score could not be compared to the others. One method that has been suggested in the literature to solve this problem if non response is random, is to include a score only if the respondent has answered 80% or more of the questions (in this case, 16 answers or

Table 19: Banked Itemized Groups' Attitude Mean Scores & Std. Deviations

Students				Professionals			
Bank	N	Mean	Std. Dev.	Rank	N	Mean	Std. Dev.
Q 6	313	4.84	1.07	Q12	127	5.31	.86
Q 1	314	4.50	1.05	Q 1	128	4.95	.94
Q12	311	4.39	1.34	Q20	128	4.73	1.10
Q 3	314	4.35	1.23	Q 6	128	4.67	1.24
Q18	311	4.30	1.10	Q18	127	4.66	1.04
Q 2	314	4.24	1.37	Q 3	128	4.48	1.25
Q20	311	4.20	1.17	Q 2	127	4.48	1.40
Q 4	313	4.19	1.17	Q 5	128	4.47	1.25
Q15	311	3.90	1.23	Q 4	128	4.23	1.26
Q10	314	3.83	1.42	Q15	128	4.20	1.27
Q 5	314	3.80	1.30	Q10	128	4.04	1.38
Q17	311	3.62	1.06	Q14	128	4.02	1.41
Q 8	313	3.59	1.20	Q19	127	3.98	1.21
Q11	309	3.59	1.28	Q11	128	3.88	1.24
Q 7	311	3.50	1.35	Q 8	128	3.87	1.06
Q13	312	3.30	1.11	Q 7	128	3.84	1.32
Q19	309	3.17	1.32	Q17	127	3.70	1.20
Q14	312	3.12	1.34	Q13	127	3.52	1.18
Q16	309	2.96	1.20	Q16	127	3.36	1.23
Q 9	313	2.64	1.36	Q 9	127	3.31	1.34

Note: Variance from N of 316 (students) and 129 (professionals) due to missing responses.

more). The arithmetic mean of the items answered may then be substituted for those items that are missing (Atherton, Klemmack, 1982). This procedure was carried out on 38 scores in order to include them in the analysis; however, ten other observations were omitted due to five or more missing responses.

In the scale, respondents were able to obtain scores ranging from 20 to 120, where 120 indicated the most

positive attitude toward computers and 20 the lowest. The mean score of the sample was 78.2 with a standard deviation of 14.1. A comparison of each group may be seen in Table 20. The students' and professionals' index scores were employed as the dependent variable in the testing of the major hypothesis and sub-hypothesis.

Table 20: Group Means and Standard Deviations of Attitude Scores

Group	N	Mean	Standard Deviation
Year 1 Students	119	74.5	14.4
Year 2 Students	87	74.4	12.7
Year 3 Students	51	78.4	10.4
Year 4 Students	52	79.5	13.7
Professionals	126	83.6	14.6
Total (groups)[a]	435	78.2	14.1

[a] 10 missing responses

III. The Major Hypothesis and its Sub-Hypothesis

Type of Computer Exposure.

The independent variable, "type of exposure to computers", was subdivided into five different classifications: a) the number of formal computer courses taken, b) the number of locations of access to a computer, c) the number of locations the respondent's children had been exposed to computers, d) the amount of computer experience, and e) familiarity with use of microcomputers in human services.

In order to measure the strength of association between variables in the major hypothesis, the use of multiple regression was decided upon since the procedure is comparable to analysis of variance, yet is applicable to independent variables at all levels of measurement. Specifically, a stepwise maximum multiple regression SAS procedure was used to analyse the data. This procedure finds which independent variable correlates the highest with the dependent variable. The procedure continues to explore the best two-variable model, three-variable model etc., in order to maximize the R-Square, the multiple correlation coefficient, with each additional variable. All five classifications of the independent variable, "type of exposure to computers" were measured with the dependent variable, "attitude scores" of the respondents in both groups. Upon analysis of the results, it was found that the classification "the number of locations the respondents' children have been exposed to computers" had to be omitted from the model due to the small number of applicable observations.

The first variable entered into the student group model was "familiarity with use of microcomputers in human services". In this model, the R-Square = .12, $F(1, 303) = 39.64$, and $p = .0001$, which indicates a significant relationship. The second variable to be entered in the model was "amount of computer experience". This two

variable model was also significant as R-Square = .16, F(2, 302) = 29.22 and p = .0001 (see Appendix B, Table 31).

The third variable to be entered in the model was "number of formal computer courses". The relationship did not add significantly to the R-Square. No significance was noted with the addition of the fourth variable in the model, "the number of locations of access to a computer".

The same two variable model was the best predictor of positive attitude scores in the professional group. However, the first variable entered in this model was "amount of computer experience" with R-Square = .11, F (1, 124) = 15.34 and p = .0001. The maximum R-Square improvement was obtained when the variable "familiarity with use of microcomputers in human services" was entered in the second model with R-Square = .13, F (2, 123) = 9.45 and p = .0002 (see Appendix, Table 32).

These findings tell us that the two variable model of, "familiarity with use of microcomputers in human services", and "amount of computer experience", was the best predictor of the positive attitude scores obtained by the respondents. Hence, social work students and professionals who have a great deal of computer experience and are very familiar with the current uses of microcomputers in human services are more likely to have a positive attitude toward computers.

To summarize the data presented to test part "a" of the major hypothesis, it was found that there was an association

between two of the five classifications of type of computer exposure measured in relation to scores on an attitude scale; specifically, "familiarity with the current use of microcomputers in human services" and "amount of computer experience".

Antecedent Variables.

The stepwise procedure was used to test the strength of association between attitudes toward computers and age, gender, education (background, class year, enrolment status), marital status, the number of children, and years of paid social work experience.

The first variable entered in the student group was paid social work experience. However, R-Square = .02, F (1, 307) = 5.15 and p = .0239, which is too low to be considered as an association. A slight improvement was noted with the addition of the variables gender and age as R-Square = .04, F(3, 305) = 3.81 and p = .0106 (see Appendix B, Table 33).

The first variable entered in the professional group was gender with R-Square = .04, F (1, 123) = 4.73, p = .0316. The second variable entered in this model was age, with an improvement in R-Square = .05, F (2, 122) = 3.25, and p = .0421 (see Appendix B, Table 34). None of the other relationships in the professional model were significant. Therefore, there is a low association between the social work students' and professionals' attitudes toward computers and gender and age. This finding tells us that attitudes

toward computers were more positive in the older respondents. A t-test comparing attitude scores of females (76.89) and males (82.64) showed a significant difference as t = 3.55, and p = .0004, indicating that the male respondents' attitudes toward computers were more positive than the female respondents. However, it is important to remind the reader that the strength of the association between attitudes toward computers and the age and gender of the respondents was low.

Present Field of Practice and Role in Agency.

The stepwise procedure was also used to measure the association between attitudes toward computers and the present field of practice and the percentage of time spent in a present role at the agency or field placement. The first variable entered in the student group model was the present role of direct service in which R-Square = .02, F (1, 305) = 4.70, p = .0309 (see Appendix B, Table 35). None of the other relationships entered in the student model were significant; therefore, the variable direct service was the best model for the student group. However, R-Square is too low to be reported as an association.

The first variable entered in the professional group model was research in which R-Square = .08, F(1, 124) = 10.06, and p = .0019. The maximum R-Square improvement was in the four variable model in which the variables supervision, direct service and other (unemployed, retired,

non-social work roles) were entered along with research, and R-Square = .15, F(4, 121) = 5.27, and p = .0006 (see Appendix B, Table 36). Thus, an association was found between attitudes toward computers and present role in an agency in the professional group.

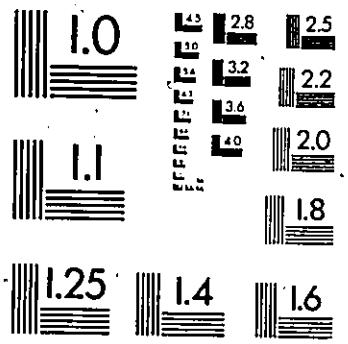
It is important to note that the association between the present role of direct service and the professionals' attitudes toward computers was a negative correlation as Pearson's r= -.13, which indicates that attitudes toward computers were lower as the percentage of time spent in direct service increased. This analysis appears to conflict with the previous findings of professionals who are presently spending 50% or more of their time in direct services and are expecting to use computers in the future (see Table 17). Perhaps they are not expecting to use computers directly with clients but rather as a tool to assist them in functions such as report writing.

Future Field of Practice and Role in Agency. In this analysis, the first variable entered in the student model was the percentage of time spent in an administrative role in which R-Square = .06, F(1, 305) = 19.41, and p = .0001. The percentage of time spent in research was the second variable entered and improved the R-Square to .11, F(2, 304) = 17.88, and p = .0001. The maximum R-Square improvement was obtained when the variables administration, research, supervision, consultation, teaching, and future

field were entered as R-Square = .14, F (8, 298) and p = .0001 (teaching was replaced by direct service with R = .14, see Appendix E, Table 37).

The first variable entered in the professional group was the future role of direct service in which R-Square = .07, F(1, 123) = 9.26, and p = .0029. The second variable, future field of practice, improved the R-Square to .14, F(2, 122) = 10.42, and p = .0001. Research was the third variable to be entered in the model and a significant improvement was found as R-Square = .19, F(3, 121) = 9.52, and p = .0001. The maximum R-Square improvement was obtained in the seven variable model, which included the future roles of direct service, future field of practice, research, staff development, administration, other (retirement, non-social work roles), and field instruction, as R-Square = .25, F (7, 117) = 5.62, and p = .0001 (see Appendix B, Table 38).

To summarize this analysis, an association was found between attitudes toward computers and future roles in both groups. The majority of the roles may be described as indirect services to clients, which would indicate that the more time spent in indirect roles, the higher the attitude toward computers. However, as was found in the present role model, the correlation between attitudes toward computers and direct services was negative, as Pearson's r = -.14 in the student group and -.25 in the professional group which



must be interpreted as the higher the percentage of time spent in the role of direct service, the lower the attitude toward computers. This finding also conflicts with the results of the students' and professionals' career goals of spending 50% or more of their time in direct services and expecting to use computers in the future (see Tables 16 and 17).

Agency Source of Income.

In order to study the possibility of an association between the respondents' attitude toward computers and their field placement or agency's source of income, the stepwise procedure was used. Although the first variable entered in the student model was not significant (percentage of income funded by United Way), the second model in which the variable, percentage of income funded by the federal government, was entered and proved to be significant as R-Square = .02, F(2, 306) = 3.38, and p = .0353 (see Appendix B, Table 39). However, R-Square was too low to be reported as an association.

The first variable entered in the professional group was the percentage of income funded by the federal government in which R-Square = .04, F(1, 124) = 4.82, and p = .0299. The maximum R-Square improvement was obtained when the second variable, percentage of income derived from client fees, was entered as R-Square = .08, F(2, 123) = 5.02, and p = .0080 (see Appendix B, Table 40). Therefore,

an association was found between the agency income source and the professionals' attitudes toward computers. Further analysis would be necessary in order to arrive at any conclusions about this association.

Agency Use of Computers.

The stepwise procedure was used to study the possibility of an association between attitudes toward computers and current use, as well as future plans for computer use, by the respondents and/or their agencies or field placements. None of the relationships in the models were significant in either group.

Computer Course.

An assumption was made that if the respondents were in agreement of having a computer course offered in a social work program, their scores obtained on the attitude scale would be high. The four categories defining how the university computer course should be offered (elective, required, MSW, BSW), were entered in a stepwise procedure. The first variable entered in the student group model was the required course which was significant and R-Square = .27, $F(1, 229) = 86.03$ and $p = .0001$. An improvement was noted with the entry of the second variable, MSW, as R-Square = .31, $F(2, 228) = 50.64$, and $p = .0001$ (see Appendix E, Table 41).

The first variable entered in the professionals group model was also the required course and R-Square = .28, F (1,

85) = 32.97 and p = .0001. The maximum R-Square improvement was obtained in the two variable model with variables BSW and required course, as R-Square = .35, $F(2, 84)$ = 22.19 and p = .0001 (see Appendix B, Table 42). Hence, with the results of this analysis, one can predict that students and professionals who are most agreeable with the thought of a computer course being offered in a social work program will likely have positive attitudes toward computers.

The stepwise procedure was also used to measure the association between the respondents attitudes toward computers and their agreement level in a computer course being offered as a workshop or seminar in a continuing education program by the university, community college or sponsored by the Ontario Association of Professional Social Workers. The first variable entered in the student group model was the course being offered as a workshop or seminar at the community college as R-Square = .05, $F(1, 218)$ = 11.60, p = .0008 (see Appendix B, Table 43). No improvement was noted with the addition of the other two variables.

The results were similar in the professional group model, with the course being offered as a workshop or seminar at the community college, entering as the first variable and R-Square = .09, $F(1, 89)$ = 8.50, and p = .0045 (see Appendix B, Table 44). Again, no significant improvement was noted as the other two variables were entered. Thus, there is an association between attitudes

toward computers and the level of agreement in a computer course being offered as a workshop or seminar at the community college. This may be interpreted as social work students and professionals who are most agreeable in a course being offered as a workshop or seminar at the community college will likely have positive attitudes toward computers.

III. Respondents' Interest in a Computer Course

The need to study the respondents' interests and plans of taking a computer course was perceived as a natural extension to the analysis of their attitudes toward computers. Respondents were asked a variety of questions related to their opinions about the possible implementation of a computer course in a social work program. They were asked to rate their level of agreement with each item on a scale of 1 to 7, in which 1 represented "strongly disagree" and 6 represented "strongly agree". The category "do not know" was represented by the number 7, and was omitted from the analysis in order to measure the mean scores of each item. Since the student group would be most affected by the possible implementation of a computer course, it was important to divide them into sub-groups of class year in this section, in order to be more precise in the interpretation of their interests.

Computer Course.

Results of the analysis of group interests in taking a computer course appear in Table 21. As the mean scores indicate, the respondents' interest in taking a computer

Table 21: Group Interest in Taking a Computer Course

Group	Means	Standard Deviations	Totals
Year 1	4.44	1.58	100
Year 2	4.52	1.39	75
Year 3	4.79	1.21	47
Year 4	4.65	1.23	43
Professionals	4.29	1.54	109

Note: Variance in Totals of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

course in the near future fell between the "somewhat agree" to "agree" categories in all groups, with the third year students being most agreeable and the professional group scoring the least. The first year students were the least agreeable in the student groups. The lower mean scores in this student group and the professional group may indicate that these two groups would most likely have taken computer courses in the past.

Course Selection.

Another important area of inquiry relevant to this study was to ask the students and professionals their opinions about how a computer course should be offered to

the social work students in their educational program. Table 22 illustrates the analysis of data regarding the opinions of the respondents in terms of the computer course being offered as a requirement or as an elective. The

Table 22: Group Opinion Regarding Computer Course Selection

Groups	Elective			Required		
	Means	Stand. Dev.	Totals	Means	Stand. Dev.	Totals
Year 1	4.63	1.36	110	3.55	1.65	109
Year 2	5.00	1.11	84	3.87	1.59	83
Year 3	4.13	1.56	45	4.35	1.37	49
Year 4	4.43	1.50	42	4.35	1.37	46
Professionals	4.05	1.84	111	4.20	1.68	120

Note: Variance from Totals of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

overall response regarding a computer course was positive. As one studies Table 22, it is apparent that students in the first and second year classes preferred a computer course as an elective, whereas the third and fourth year students had little preference as to how the course should be offered. There was only a slight increase in the third year students, in terms of prefering the computer course as a requirement. A slight preference for a computer course as an elective was noted in the fourth year group. The professional group preferred the course tc be offered as a requirement.

Social Work Program.

The question of offering the course in the BSW or MSW program was also analysed. The opinions of the various groups appear in Table 23. The response of the groups to

Table 23: Group Preference of Computer Course in BSW or MSW Program

Group	BSW			MSW		
	Means	Stand. Dev.	Totals	Means	Stand. Dev.	Totals
Year 1	4.29	1.34	106	4.50	1.35	103
Year 2	4.74	1.14	82	4.72	1.24	83
Year 3	4.83	1.02	46	5.04	.93	45
Year 4	5.00	1.02	47	5.24	.90	46
Professionals	5.05	1.21	121	5.03	1.25	116

Note: Variance from Totals of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

having a computer course in the BSW and MSW program was quite positive in general. A slight preference toward the BSW program was evident in the second year students. All the other student groups preferred the course to be offered in the MSW program. No preferrence was noted in the professional group; the level of agreement of having the course offered in both programs was high.

Continuing Education Program.

The respondents were also quite positive about the thought of a computer course being offered in the form of

workshops or seminars, as part of a continuing Social Work Education program at the university. The results of this analysis appear in Table 24. The professional group was most in favour of a computer course being offered as a continuing education workshop or seminar.

Table 24: Continuing Education Workshop or Seminar at the University

Group	Continuing Education Workshop		
	Means	Standard Deviations	Totals
Year 1	4.59	1.34	104
Year 2	4.85	1.26	75
Year 3	4.73	1.23	44
Year 4	5.28	.85	40
Professionals	5.24	.95	115

Note: Variance from Totals of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

Community College Workshop or Seminar.

The concept of having a computer workshop or seminar offered at a community college was met with approval by the various groups, especially by the fourth year students and professionals, as illustsrated in Table 25.

Table 25: Community College Workshop or Seminar

Group	Community College		
	Means	Standard Deviations	Totals
Year 1	4.29	1.28	105
Year 2	4.65	1.31	82
Year 3	4.62	1.23	45
Year 4	4.98	1.16	42
Professionals	4.89	1.28	107

Note: Variance from Totals of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

OAPSW Sponsored Computer Workshop or Seminar.

All of the groups responded quite favourably to the idea of computer workshops or seminars sponsored and conducted by OAPSW. Results of this analysis are shown in Table 26.

Table 26: OAPSW Computer Workshops and Seminars

Group	OAPSW Workshop or Seminar		
	Means	Standard Deviations	Totals
Year 1	4.82	1.09	97
Year 2	4.95	1.08	82
Year 3	4.87	1.02	46
Year 4	5.07	1.15	44
Professionals	4.82	1.29	114

Note: Variance from Totals of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

Preferred Areas of Instruction.

Table 27 records the two groups' response to areas of interest in learning how computers may be applied in carrying out various agency functions. The list of functions was ranked according to the highest mean score. The five highest functions selected by both groups indicated that the preferred areas of instruction for computer applications are for the purpose of research and administration. Direct service functions tended to be ranked low in general; however, the professional group ranked these functions higher than the student group. Staff evaluation seemed to be an area of low interest for the professional group.

Table 27: Students' and Professionals' Preferred Areas of Instruction

Function	Means	Stard. Dev.	Totals
	Student Preference		
Research	5.28	.97	289
Periodic Reports	5.16	.81	300
Tracking Account/Expenditures	5.05	1.04	299
Scheduling Appointments	4.94	1.13	288
Policy/Program Planning & Eval	4.92	1.04	295
Daily Report Writing	4.82	1.24	292
Devel Assessment/Treatment Plans	4.51	1.28	293
Case Management	4.42	1.26	292
Time Reporting	4.36	1.34	288
Determining Status of Cases	4.09	1.43	282
Staff Evaluation	4.02	1.37	292
Treatment Evaluation	4.00	1.47	293
Analysis of Client Characteristics	3.80	1.46	295
	Professional Preference		
Research	5.37	1.02	126
Periodic Reports	5.18	1.04	124
Policy/Program Planning & Eval	4.94	1.20	120
Daily Report Writing	4.86	1.37	122
Tracking Account/Expenditures	4.83	1.36	119
Case Management	4.76	1.34	122
Determining Status of Cases	4.74	1.33	119
Treatment Evaluation	4.67	1.38	123
Devel Assessment/Treatment Plans	4.64	1.45	121
Analysis of Client Characteristics	4.52	1.46	122
Time Reporting	4.42	1.43	118
Scheduling Appointments	4.40	1.55	123
Staff Evaluation	4.30	1.46	122

Note: Deviations from the total numbers of 316 (students) and 129 (professionals) are due to missing observations or omission of "do not know" category.

Type of Computer Hardware.

Although many respondents did not know which type of computer hardware to include in a course, the microcomputer

was the most favourable selection among those who answered yes to this question in both groups, as noted by the comparison of mean scores in Table 28. It is important to note that over 50% of the respondents did not know what type of computer hardware would be best to focus on in a computer course. The results of this analysis indicate that there is a definite need for training in basic general knowledge of computer sizes and their capabilities.

Table 28: Type of Computer Hardware

Computer Size	Student Selection			Professional Selection		
	Means	Std. Dev.	Totals	Means	Std. Dev.	Totals
Micro	4.63	1.24	129	5.19	.94	59
Mini	4.44	1.16	117	4.75	1.37	53
Mainframe	3.85	1.51	119	3.87	1.64	47

Note: Variance from Totals of 316 (students) and 129 (professionals) due to missing observations or omission of "do not know" category.

Software Packages.

As one might expect, respondents chose word processing as the highest ranked software package to meet agency needs. Table 29 illustrates the results of this analysis. It was found that software packages to be used for administrative and research purposes were ranked higher than software that would assist in direct services. This may be compared to the similar results that were found in the analysis of

computer applications to various agency functions of the respondents (see Table 27). The preferred software packages were similar in both groups, with the exception that students ranked programming higher than decision support and expert systems, whereas the professional group ranked programming as the least preferred, with decision support and expert systems ranking sixth and seventh cut of eight places.

Many respondents did not know what software packages would best meet their needs in an agency. As was noted in the selection of the type of computer hardware, this finding may be attributed to the respondents' general lack of knowledge in this area.

Table 29: Banking of Preferred Software Packages

Software Package	Means	Standard Deviations	Totals
		Students' Selection	
Word Processing	5.07	.96	241
Information Management Systems	4.91	.92	218
Communication	4.77	1.08	235
Financial Planning	4.74	1.01	219
Graphics	4.71	1.07	229
Programming	4.71	1.19	237
Decision Support System	4.23	1.42	228
Expert Systems	4.11	1.36	215
		Professionals' Selection	
Word Processing	5.23	.98	107
Information Management Systems	5.10	.97	96
Communication	4.92	1.07	103
Graphics	4.80	1.09	105
Financial Planning	4.73	1.24	98
Decision Support Systems	4.65	1.29	101
Expert Systems	4.51	1.32	90
Programming	4.38	1.42	104

Note: Variance from Total of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

Type of Computer Instruction.

Computer instruction utilizing "hands on" experience of computers and software was considered very important among the students and professionals. As can be seen in Table 30, computer assisted instruction was also met with approval as compared to instruction by lectures, which was slightly lower in mean scores in both groups. Information on current availability of software packages was also considered

important to both groups and was ranked slightly higher by the professional group.

Table 30: Type of Computer Instruction

Type	Means	Stand. Dev.	Totals
	Students' Selection		
"Hands on" Computer Experience	5.34	.85	280
"Hands on" Software Experience	5.31	.88	263
Computer Assisted Instruction	5.22	1.00	280
Software Information	5.11	.91	269
Lectures	4.85	1.21	275
	Professionals' Selection		
"Hands on" Computer Experience	5.67	.65	118
"Hands on" Software Experience	5.61	.69	117
Software Information	5.41	.82	114
Computer Assisted Instruction	5.39	.91	114
Lectures	5.06	1.14	114

Note: Variances from Totals of 316 (students) and 129 (professionals) due to missing responses or omission of "do not know" category.

Ethical Issues and Social Problems.

Topics of discussion such as the ethical aspects of computer use in human services and the effects of computers on society were considered to be very important areas to include in a computer course by both groups. The majority of students (293) were in favour of including discussions related to ethical issues (mean = 5.32, standard deviation = .98), as were the professionals (N= 127, mean = 5.61, standard deviation = 1.03). The results were similar in

terms of the effects of computers on society. In this case, 295 students considered this an important issue to discuss in class, (means = 5.26, standard deviation = .95), as did 126 professionals (mean = 5.29, standard deviation = 1.03).

Respondents' Comments.

Several respondents wrote comments on their questionnaires. Most of the comments were positive as stated below;

> "computers will help to enhance production of organized paperwork"
>
> "computers will have effective uses: evaluating one's performance in practice, for administrative tasks and allow more time to spend in direct service".

One respondent remembered feeling frustrated during the fourth year research course and recommended that more time should be spent learning through "hands on" experience. Another respondent reported that there is a need for social workers to be updated regarding computers. This education should be taking place in schools of social work and OAPSW conferences; however, the respondent went on to say that she could not justify using agency funds to attend conferences and would prefer the training to take place in schools. One student reported that the survey itself made her realize how much computers may be used to help social work become more effective. She had not given the matter much thought other than computer use in research, and added that a computer course would be excellent. Another student (second year)

was in full support of computers and assumed that the use of computers in social work would be taught in future courses.

Some negative comments were noted. Among them, statements such as the following were written:

> "computers are too dehumanizing and take away from the humanistic aspect of social work"
>
> "computers will help in some ways but should never take over or ever become more important than social workers in making decisions about clients"
>
> "I have serious concerns about direct use with clients, it threatens privacy. People already feel like a number in our society, we must remain humanistic".

These comments seem to reflect the general acceptance of computer use in indirect practice, and a slight reluctance to using computers in direct practice, as was indicated in the findings throughout this study.

Summary

The analysis of the data was based upon a survey of 445 students, members of faculty and social work professionals in the community, which were either members of OAPSW or executive directors of various agencies. A description of the sample was included as was a presentation of the respondents' use of computers. The resporses of the students and professionals were analysed to test the major hypothesis and sub-hypothesis, which was accepted based upon the correlations found between the variables under study. Data was also analysed to study the interests and opinions

of the respondents regarding the introduction of a computer course in a social work program. A more detailed summary of the findings and conclusions of the study will be presented in the following chapter.

CHAPTER VI

Summary, Conclusions and Recommendations

This chapter includes a summary of the review of literature and research findings as well as conclusions drawn from these findings. Recommendations have been made based upon the results of the study.

Summary

Review of Literature.

A review of the current social work literature defined a need for training in the use of computers in human services. It was found that only a few studies have been reported regarding the present use of computers for administrative purposes. Very little research has been devoted to computer use in direct practice. It appears that social work attitudes toward computers are becoming more positive. A few schools of social work are beginning to respond to the need for training by offering computer courses in their programs.

Description of Sample.

The attitudes and interests of social work professionals and students regarding computer use in social work were investigated in this study. The population of 445 respondents was made up of 316 undergraduate social work students, and 129 professionals from the community.

The majority of the respondents were female (78.3% of total group or 82.3% of students and 68.7% of professionals), which indicates that social work still seems to be perceived as a female profession. The distribution of the sample was also skewed in the fact that over half of the respondents were undergraduate students (59.6%) and their mean age was 23.6. Naturally, the majority of the respondents were single (81.3% of students), did not have any children (84.8% of students), or paid social work experience (79.8% of students) and their highest level of educational background was a high school diploma (83.9%). Over-representation of these factors may have had an effect on the results of the study since variables such as number of children and work experience were not applicable to many respondents.

The majority of those in the professional category were married (64.3%) with no children (47.3%), and had a BSW degree (45.8%) with less than ten years of work experience (51.9%).

A comparison of the present and future major fields of practice showed that the majority of the respondents in both groups were presently involved in child and family services. In terms of the future, these two fields of practice dropped, whereas the areas of education/schools/university, services for the aged and private practice increased. This finding tells us that some respondents presently involved in

child and family services are planning to focus on indirect services in the future as educators. Others will concentrate in direct services as future private practitioners, a finding similar to the prediction made by Gripton (1983), and LaMendola (1985).

Computer Use

The total number of respondents having access to a computer at home was 101 or 22.8% of the sample, 169 or 38.1% had access to a computer at school, 19 or 4.3% had access at their field placements, and 35 or 7.9% at their workplace. According to the respondents working or placed in agencies, 108 (47.4%) reported that their agency used computers. The remaining number of respondents presently involved with agencies reported that 25% of their agencies were planning to use computers within the next five years. Adding these two categories together shows us that 72.4% of Windsor agencies will probably be using computers within the next five years. These findings are very similar to those reported by Gandy and Tepperman in their 1984 Toronto survey.

There was an increase of 38.4% in the comparison of students presently using computers and those expecting to use them in the future. A similar result was found among the professional group, with an increase of 36.3% expecting to use computers in the future. Forty percent (171) of those remaining respondents did not know if they would be

using computers in the future. This uncertainty may be due to lack of information regarding the use of computers in human services or some other unknown factor not analysed in this study.

It was found that the highest percentage of students presently using computers (4.2%) were in the field of children's services, whereas the highest percentage of professionals presently using computers (7.1%) were in the field of education/schools/university. An increase in the expected future use of computers was noted in both groups' future desired fields of practice.

The highest percentage of students presently using computers (2.5%) were spending under 25% of their time in community organizaton and development. In the professional group, the highest percentage of those presently using computers (8.0%) were spending 25 to 49% of their time in an administrative role. Both groups were expecting to use computers in all specified methods of practice in the future, including those respondents that were expecting to spend 50% or more of their time in direct services.

Associations Between Variables.

It was found that there was an association between attitudes toward computers and the amount of computer experience of the respondents, as well as their familiarity with the use of microcomputers in human services (students' maximum R^2 = .16, p = .0001 and professionals' maximum

R-Square = .13, p = .0002). A low association was found between attitudes toward computers and antecedent variables such as age and gender in the two groups (students' maximum R-Square = .04, p = .0106 and professionals' maximum R-Square = .05, p = .0421).

There were no associations between attitudes toward computers and present field of practice and role in agencies or field placement in the student group. There was an association between attitudes toward computers and the percentage of time spent in roles such as research, supervision, direct service and other (unemployed, retired, non-social work roles) in the professional group (maximum R-Square = .15, p = .0006). As noted previously, the correlation between direct services and attitudes toward computers was negative as Pearson's r = -.13.

There was also an association between attitudes toward computers and the type of desired future field of practice and roles in an agency. In the student group, the percentage of time spent in desired future roles of administration, research, supervision, consultation, teaching, direct services and future field of practice were associated with their attitudes toward computers (maximum R-Square = .14, p = .0001). In the professional group, future desired roles such as direct services, future field of practice, research, staff development, administration, other (retirement, non-social work roles) and field

instruction were associated with their attitudes toward computers (maximum R-Square = .25, p = .0001). It is important to note that the association between direct services and attitudes toward computers was negative (r = -.14 in student group and -.25 in professional group), which tells us that the higher the percentage of time spent in a direct service role, the lower the attitude toward computers.

An association was found between the agency's source of income and attitudes toward computers in the professional group, specifically, when the highest percentage of income was funded by the federal government and client fees (maximum R-Square = .08, p = .0080).

The agency's use of computers in the present or future plans for use, and the respondents' personal present use or expected use of computers in the future were not associated with attitudes toward computers.

The respondents' level of agreement regarding a computer course as a requirement in the BSW and MSW program was associated with attitudes toward computers (maximum student R-Square = .31, p = .0001, maximum professional R-Square = .35, p = .0001). An association was also found between the two group's attitudes toward computers and their agreement level in a computer course being offered as a workshop or seminar by the community college (maximum student R-Square = .05, p = .0008, maximum professional R-Square = .09, p = .0045).

Computer Course.

The majority of respondents were in support of a computer course being offered to social work students. Three hundred (67.4%) of the respondents reported that they would likely be taking a computer course in the near future. Students in the first, second and fourth class years seemed to prefer the course to be offered as an elective, whereas the third year students and professionals preferred the course to be offered as a requirement. The groups also had varied opinions regarding the course being offered in the BSW or MSW program. Although the results were positive for both programs, the students seemed to prefer the MSW program, whereas the professional group had no preference. The respondents were all in favour of a computer course being offered in the form of workshops or seminars, as part of a continuing education program at the university, community college and/or sponsored through OAPSW.

The preferred computer size, for which instruction was requested, was the microcomputer, and word processing was ranked as the most desired software package to be studied for the purpose of meeting agency needs. The respondents were all very interested in getting "hands on" experience of computers and software. They also were very much in support of the course content including ethical issues and the effects of computer technology on society in general.

Conclusions

The following conclusions were drawn from the analysis of data:

1. There is a need for training in the basic general knowledge of computers. The high percentage of respondents who did not know the various sizes of computers or types of software packages may be a result of this lack of general knowledge about computer technology. The need for training is also evident in the fact that 72.4% of the agencies plan on using computers within the next five years and 47.4% of the total group of respondents are expecting to be personally using computers in the future.
2. The attitudes of social workers toward computers tend to be positive in general. The respondents did not seem to be threatened by the thought of computers eliminating the type of career they hoped to obtain. Gripton (1981) had mentioned that this factor may play a role in social workers being reluctant to use computers. The findings also demonstrated a similarity to Bostwick's comments (1983), in that the respondents perceived exposure to computer technology in schools of social work as an enhancement to students' marketability for future employment. This finding would suggest that there is a good potential for offering a computer course to social work students.

3. In this study, the majority of respondents considered the use of computers important in the areas of administration and research, as was generally noted in the review of literature.

4. A similarity to Boyd, Hylton and Price's (1978) historical research findings was shown in this study, in terms of the reluctance of social workers to include computers in direct services to clients. Therefore, a great need for training in the current use of computers in direct services is indicated.

5. In general, there seemed to be more reluctance toward computers among students as compared to professionals. This may be based on a variety of unknown factors such as prior computer experience, or lack of paid social work experience with little knowledge in the application of computers in social work practice.

6. The positive response of the professionals and students identified a need for training in computers for social workers.

7. In addition to the general interest in computer training of students in a social work program, the need for workshops or seminars for professionals was also recognized, as part of continuing education programs at the university, community college and/or sponsored through OAPSW.

Recommendations

In view of the findings of this study, the author recommends that:

1. The School of Social Work, University of Windsor seriously consider implementing a computer course in its undergraduate and graduate programs.
2. In addition to the utilization of the mainframe computer facilities of the University, training in the use of campus microcomputers for social work students is strongly recommended.
3. Workshops and seminars should be estasblished as part of a continuing education program at the university or community college so that social work professionals may have the opportunity to get relevant computer training.
4. The Ontario Association of Professional Sccial Workers should also consider providing computer workshops and seminars to its members.
5. One faculty member recommended the need to include computer content in several courses, not in one only, in order to ensure that students get acquainted with the use of computers in all areas of social work.
6. In the event of the implementation of a computer course in the social work program, further research of an evaluative nature would be advisable.

7. More research is also needed in the area of evaluating available software packages so that the selection of software used in the course would contribute to the effective training of social workers.

8. As a final note, further research is essential in studying the reluctance of social workers to recognize computers as tools for direct practice. The potential knowledge acquired by such research would undoubtedly assist social work educators who are faced with the difficult task of introducing relevant and modern direct practice methods to their students.

As time goes on, the use of computers in human services will inevitably increase and the need for continuous research in this area will be necessary. This study can only be looked upon as an introduction to a new era in the evolution of social work as a profession.

Appendix A

THE SURVEY INSTRUMENT

Professionals' and Students' Questionnaire

SECTION A: General Information

Please circle the appropriate number or fill in the following:

1. What is your Educational Background? (highest level attained)

   1. B.A.
   2. B.S.W.
   3. M.S.W.
   4. D.S.W.
   5. Ph.D in Social Work
   6. Ph.D in Other Discipline-Please Specify_____
   7. Other-Please sepcify_____

2. If you are a student, what is your Present Class Year?

   1 2 3 4 5

3. Are you presently enrolled as a:

   1. Full time student 2. Part time student 3. N/A

4. What is your Age? Yrs._____

5. What is your Sex? 1. Male 2. Female

6. What is your Marital Status?

   1. Single, never married
   2. Married, Common-law
   3. Separated
   4. Widowed
   5. Divorced
   6. Other

7. How many children do you have? _____

8. How have your children been exposed to computers? (Circle all that apply)

   1. At home
   2. At elementary school
   3. At a computer camp
   4. In a secondary school course
   5. In a Community College course for children
   6. Not applicable

9. In your PRESENT position, (or career goal, if student) which category best describes your major field of Practice?

1. Personal Social Services--Children's Services
2. Personal Social Services--Family Services
3. Personal Social Services--For the Aged
4. Health Services
5. Justice/Corrections Services
6. Welfare/Economic Support/Labour
7. Education/Schools/University
8. Recreation
9. Private Practice
10. Other - Please specify_____

10. As a FUTURE career goal (5 to 10 years from now) which category would best describe your major field of Practice?

1. Personal Social Services--Children's Services
2. Personal Social Services--Family Services
3. Personal Social Services--For the Aged
4. Health Services
5. Justice/Corrections Services
6. Welfare/Economic Support/Labour
7. Education/Schools/University
8. Recreation
9. Private Practice
10. Other - Please specify_____

11. How many years or months of PAID Social Work Practice experience have you had? Yrs._____ or Mos._____

12. In your PRESENT Role in your field placement or agency, estimate the percentage of time spent in the following:

N/A--Not in field placement or agency	_____
Direct service with clients	_____
Community Organization/Development	_____
Policy, Planning Development	_____
Agency Administration/Management	_____
Research	_____
Supervision (not of students)	_____
Consultation	_____
Teaching	_____
Staff Development	_____
Field Instruction	_____
Other - Please specify_____	_____
Total	100%

13. For your FUTURE Role (5 to 10 years from now) estimate the percentage of time you would like to spend in the following:

Direct Service with clients	_____
Community Organization/Development	_____
Policy, Planning Development	_____
Agency Administration/Management	_____
Research	_____
Supersvision (not of students)	_____
Consultation	_____
Teaching	_____
Staff Development	_____
Field Instruction	_____
Other - Please specify_____	_____
Total	100%

14. What percentage of your agency's income is derived from the following sources?

Not applicable	_____
Federal Government	_____
Provincial Government	_____
Municipal Government	_____
United Way	_____
Fees from clients	_____
Other	_____
Total	100%

15. How would you describe the amount of computer experience you have had?

1. No experience at all
2. A little experience
3. A moderate degree of experience
4. A great deal of experience

16. Have you ever taken any of the following computer courses? Circle all that apply.

Computer Science Course	0.	No	1.	Yes
Programming Course	0.	No	1.	Yes
Word Processing Course	0.	No	1.	Yes
General Information Course	0.	No	1.	Yes
Data Processing Course	0.	No	1.	Yes
Statistical Analysis Course using a computer				

17. Do you have access to a computer? Circle all that apply

0. No
1. At home
2. At school
3. At your field placement
4. At the agency in which you are employed

18. Is your agency currently using computers?

0. No 1. Yes 2. N/A

19. If your agency is not currently using computers, has it ever used computers?

0. No 1. Yes 2. N/A

20. If your agency has never used computers does it plan to do so?

1. No plans presently
2. Within the next 12 months
3. Within the next 2 to 3 years
4. Within the next 4 + years
5. Not applicable.

21. Are you PRESENTLY using a computer at your agency or field placement?

0. No 1. Yes 2. N/A

22. In the FUTURE, do you think you will be using a computer at your agency?

0. No 1. Yes 2. Do not know

23. How familiar are you with the current uses of microcomputers in Human Services?

1. Not familiar at all
2. Somewhat familiar
3. Familiar
4. Very familiar

SECTION E: Your Attitude and Opinions

In this section, circle the number which best reflects your degree of agreement or disagreement with the following statements.

STRONGLY DISAGREE	DISAGREE	SOMEWHAT DISAGREE	SOMEWHAT AGREE	AGREE	STRONGLY AGREE
1	2	3	4	5	6

1.	My overall attitude towards the use of computers in Social Work is positive.	1 2 3 4 5 6
2.	I would not feel comfortable working with computers.	1 2 3 4 5 6
3.	Computers may become a basic tool of Social Work Practice.	1 2 3 4 5 6
4.	The use of computers in my profession will free me to do more interesting and imaginative types of work.	1 2 3 4 5 6
5.	Learning or relearning the necessary skills to work with a computerized information system would be difficult for me.	1 2 3 4 5 6
6.	Exposure to computer technology in Schools of Social Work will enhance the student's marketability for future employment.	1 2 3 4 5 6
7.	Computerized information systems threaten the privacy of the clients that my profession serves.	1 2 3 4 5 6
8.	Computers are very easy to work with.	1 2 3 4 5 6
9.	Computers should be utilized to work directly with clients.	1 2 3 4 5 6
10.	Computers are dehumanizing by nature.	1 2 3 4 5 6
11.	I like working with computers because there is something exciting and fascinating about them.	1 2 3 4 5 6
12.	Computerization may eliminate the type of career I hope to obtain.	1 2 3 4 5 6

STRONGLY DISAGREE	DISAGREE	SOMEWHAT DISAGREE	SOMEWHAT AGREE	AGREE	STRONGLY AGREE
1	2	3	4	5	6

13.	Computers help bring about a better way of life for the average person.	1 2 3 4 5 6
14.	Computers should only be used for research and administrative purposes in Social Work Practice.	1 2 3 4 5 6
15.	Much greater emphasis in Social Work Education should be placed on developing computer literacy in students.	1 2 3 4 5 6
16.	Computer specialists and information systems designers are more concerned with the technical aspects of a computer system than with human aspects.	1 2 3 4 5 6
17.	There are very little adverse effects on people working with computers.	1 2 3 4 5 6
18.	Computerized information systems increase the flow of communication within an organization.	1 2 3 4 5 6
19.	Computer assisted counselling would harm a client/worker relationship.	1 2 3 4 5 6
20.	Social workers will be able to evaluate their practice more efficiently with computers.	1 2 3 4 5 6

SECTION C: Opinion About Offering a Computer Course

In this section, circle the number in ALL categories, which best reflects your degree of agreement or disagreement about including a computer course in the current Social Work Program. Use this scale as a key.

STRONGLY DISAGREE	DISAGREE	SOMEWHAT DISAGREE	SOMEWHAT AGREE	AGREE	STRONGLY AGREE	DO NOT KNOW
1	2	3	4	5	6	7

1. A computer course should be offered to social workers:

-As an Elective	1 2 3 4 5 6 7
-As a Required course	1 2 3 4 5 6 7
-In the BSW Program	1 2 3 4 5 6 7
-In the MSW Program	1 2 3 4 5 6 7
-In the form of workshops and seminars, as part of a Continuing Social Work Education Program at the University	1 2 3 4 5 6 7
-At the Community College	1 2 3 4 5 6 7
-In the form or workshops and seminars by a Professional Organization (OAPSW)	1 2 3 4 5 6 7

2. I would be interested in learning how computers would be useful in helping me carry out the following functions:

-To keep track of accounts, expenditures	1 2 3 4 5 6 7
-To assist in policy/program planning and evaluation	1 2 3 4 5 6 7
-To prepare periodic reports on service provided	1 2 3 4 5 6 7
-To assist me in developing assessment and treatment plans	1 2 3 4 5 6 7
-To follow clients through various stages of service (case management)	1 2 3 4 5 6 7
-To analyze client characteristics	1 2 3 4 5 6 7
-To monitor work of staff (time reporting)	1 2 3 4 5 6 7
-To evaluate staff performance	1 2 3 4 5 6 7
-Research	1 2 3 4 5 6 7
-Scheduling appointments	1 2 3 4 5 6 7
-To evaluate treatment	1 2 3 4 5 6 7
-To assist me in my daily report	1 2 3 4 5 6 7

writing
-To determine status of cases 1 2 3 4 5 6 7

STRONGLY DISAGREE	DISAGREE	SOMEWHAT DISAGREE	SOMEWHAT AGREE	AGREE	STRONGLY AGREE	DO NOT KNOW
1	2	3	4	5	6	7

3. Course content should be focused upon the following computer hardware (size)

Maxi (mainframe) computers	1 2 3 4 5 6 7
Mini computers	1 2 3 4 5 6 7
Microcomputers	1 2 3 4 5 6 7

4. In order to meet agency needs, persons need to learn the following computer software packages:

-Word Processing (report writing)	1 2 3 4 5 6 7
-Financial planning (spreadsheets)	1 2 3 4 5 6 7
-Information management systems (data bases)	1 2 3 4 5 6 7
-Communication (computer networks, electronic mail, information retrieval and sharing)	1 2 3 4 5 6 7
-Graphics (graphs for statistical analysis	1 2 3 4 5 6 7
-Programming (computer)	1 2 3 4 5 6 7
-Decision-support systems (to assist in case assessment and treatment plans)	1 2 3 4 5 6 7
-Expert systems (specialized diagnostic decision-supprort systems)	1 2 3 4 5 6 7

5. The course should include:

-"Hands on" experience on computers	1 2 3 4 5 6 7
-Computer assisted instruction	1 2 3 4 5 6 7
-Instruction by lectures	1 2 3 4 5 6 7
-Information of current availability of software packages relevant to Social Work Practice	1 2 3 4 5 6 7
-"Hands on" experience with appropri- software packages	1 2 3 4 5 6 7

STRONGLY DISAGREE	DISAGREE	SOMEWHAT DISAGREE	SOMEWHAT AGREE	AGREE	STRONGLY AGREE	DO NOT KNOW

6. The course should include discussions related to the ethical aspects of computer use ir human services. 1 2 3 4 5 6 7

7. The effects of computers on society in general, and what this implies in terms of social problems, should be included in the discussions of the course. 1 2 3 4 5 6 7

8. I will likely take a computer course ir the near future. 1 2 3 4 5 6 7

Thank you for your participation in the survey. Any additional comments would be appreciated. Please use back of page.

NOTE: Reverse scores for items 2, 5, 7, 10, 12, 14, 16, and 19.

Appendix B

MULTIPLE REGRESSION

SQUARED MULTIPLE CORRELATION COEFFICIENT

Table 31: Multiple Regression of Student Attitude Scores and Computer Exposure

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 6 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE FAMILRTY ENTERED R SQUARE = 0.11570089
C(P) = 16.07885433

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	6280.01116276	6280.011163	39.64	0.0001
ERROR	303	47997.97572248	158.409161		
TOTAL	304	54277.98688525			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	63.7364535				
FAMILRTY	10.0872822	1.60207967	6280.011163	39.64	0.0001

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE COMPEXP ENTERED R SQUARE = 0.16213092
C(P) = 1.43066030

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	8800.14015311	4400.070077	29.22	0.0001
ERROR	302	45477.84673214	150.588896		
TOTAL	304	54277.98688525			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	58.0191186				
FAMILRTY	7.6914515	1.66821476	3201.147235	21.26	0.0001
COMPEXP	4.8483247	1.18515946	2520.128990	16.74	0.0001

BOUNDS ON CONDITION NUMBER: 1.140573, 5.124583

Table 32: Multi-Regression of Professionals' Attitudes Scores/Computer Exposure

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 1 VARIABLE COMPEXP ENTERED R SQUARE = 0.11007825
C(P) = 3.19384289

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	2930.66472243	2930.664722	15.34	0.0001
ERROR	124	23692.80353154	191.070996		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	70.7441762				
COMPEXP	6.2673120	1.60027872	2930.664722	15.34	0.0001

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE FAMILRTY ENTERED R SQUARE = 0.13313256
C(P) = 1.95057057

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	3544.45060803	1772.225304	9.45	0.0002
ERROR	123	23079.01764593	187.634290		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	68.5503097				
FAMILRTY	4.0889251	2.26077222	613.7858856	3.27	0.0729
COMPEXP	4.0508284	2.00416385	766.5375788	4.09	0.0454

BOUNDS ON CONDITION NUMBER: 1.597194, 12.77755

Table 33: Multiple Regression of Student Attitude Scores and Antecedent Variables

WARNING: 2 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE PAIDEXP ENTERED R SQUARE = 0.01649632
C(P) = 3.51456500

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	902.06727481	902.0672748	5.15	0.0239
ERROR	307	53780.88418150	175.1820332		
TOTAL	308	54682.95145631			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	75.2857232				
PAIDEXP	2.0898095	0.92094143	902.0672748	5.15	0.0239

BOUNDS ON CONDITION NUMBER: 1; 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE GENDER ENTERED R SQUARE = 0.02724821
C(P) = 2.14181092

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	1490.01260107	745.0063005	4.29	0.0146
ERROR	306	53192.93885525	173.8331335		
TOTAL	308	54682.95145631			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	81.8382503				
GENDER	-3.5864784	1.95014108	587.9453263	3.38	0.0669
PAIDEXP	1.9956858	0.91881546	820.0876834	4.72	0.0306

BOUNDS ON CONDITION NUMBER: 1.003112, 8.024899

Table 34: Multi-Regression of Professionals' Attitude Scores/Antecedent Variables

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 1 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE GENDER ENTERED R SQUARE = 0.03702632
C(P) = 1.02326181

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	985.34436494	985.3443649	4.73	0.0316
ERROR	123	25626.65563506	208.3467938		
TOTAL	124	26612.00000000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	93.8291592				
GENDER	-6.0599284	2.78655031	985.3443649	4.73	0.0316

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE AGE ENTERED R SQUARE = 0.05061439
C(P) = 1.30144899

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	1346.95004128	673.4750206	3.25	0.0421
ERROR	122	25265.04995872	207.0905734		
TOTAL	124	26612.00000000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	99.5235226				
AGE	-0.1382655	0.10463488	361.605676	1.75	0.1888
GENDER	-6.5533806	2.80312211	1134.897436	5.47	0.0210

BOUNDS ON CONDITION NUMBER: 1.018068, 8.144543

Table 35: Multiple Regression of Student Attitude Scores and Present Role

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 4 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE PRDSPCT ENTERED R SQUARE = 0.01517846
C(P) = -2.48330865

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	828.65714923	828.6571492	4.70	0.0309
ERROR	305	53765.60995175	176.2806884		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	74.9065825				
PRDSPCT	0.0493049	0.02274077	828.6571492	4.70	0.0309

BOUNDS ON CONDITION NUMBER: 1, 2

Table 36: Multiple Regression of Professionals' Attitude Scores and Present Role

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 1 VARIABLE PRESPCT ENTERED R SQUARE = 0.07503142
C(P) = 3.88939863

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	1997.59659330	1997.596593	10.06	0.0019
ERROR	124	24625.87166067	198.595739		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	82.3519934				
PRRESPCT	0.8238401	0.25976104	1997.596593	10.06	0.0019

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE PRSUPPCT ENTERED R SQUARE = 0.11016808
C(P) = 1.10725437

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	2933.05638695	1466.528193	7.61	0.0008
ERROR	123	23690.41186702	192.604975		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	81.2448114				
PRRESPCT	0.8667946	0.25655456	2198.570673	11.41	0.0010
PRSUPPCT	0.2576205	0.11689651	935.459794	4.86	0.0294

BOUNDS ON CONDITION NUMBER: 1.005805, 8.046441

THE ABOVE MODEL IS THE BEST 2 VARIABLE MODEL FOUND.

(Table 36 Continued)

STEP 3 VARIABLE PRDSPCT ENTERED R SQUARE = 0.12842129
C(P) = 0.62296932

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	3	3419.02014053	1139.673380	5.99	0.0009
ERROR	122	23204.44811344	190.200394		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	83.9442424				
PRDSPCT	-0.0586632	0.03670030	485.963754	2.56	0.1125
PRRESPCT	0.8074768	0.25763471	1868.369741	9.82	0.0022
PRSUPPCT	0.2169588	0.11891722	633.106119	3.33	0.0705

BOUNDS ON CONDITION NUMBER: 1.064672, 18.87495

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

THE ABOVE MODEL IS THE BEST 3 VARIABLE MODEL FOUND.

STEP 4 VARIABLE PRCTHPCT ENTERED R SQUARE = 0.14834963
C(P) = -0.08930335

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	4	3949.58172409	987.3954310	5.27	0.0006
ERROR	121	22673.88652988	187.3874920		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	84.7063966				
PRDSPCT	-0.0644421	0.03658944	581.257168	3.10	0.0807
PRRESPCT	0.7776000	0.25633819	1724.354394	9.20	0.0030
PRSUPPCT	0.2050208	0.11824763	563.315233	3.01	0.0855
PROTHPCT	-0.2160700	0.12840945	530.561584	2.83	0.0950

BOUNDS ON CONDITION NUMBER: 1.074135, 33.41976

Table 37: Multiple Regression of Students' Attitude Scores and Future Roles

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 4 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE FTADMPCT ENTERED R SQUARE = 0.05984525
C(P) = 21.40436107

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	3267.20753496	3267.207535	19.41	0.0001
ERROR	305	51327.05956601	168.285441		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	74.1874930				
FTADMPCT	0.1877391	0.04260786	3267.207535	19.41	0.0001

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE FTRESPCT ENTERED R SQUARE = 0.10526743
C(P) = 7.73124601

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	5746.99821209	2873.499106	17.88	0.0001
ERROR	304	48847.26888889	160.681806		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	72.8978511				
FTADMPCT	0.1990034	0.04173278	3653.701839	22.74	0.0001
FTRESPCT	0.3259497	0.08297102	2479.790677	15.43	0.0001

BOUNDS ON CONDITION NUMBER: 1.004743, 8.037944

THE ABOVE MODEL IS THE BEST 2 VARIABLE MODEL FOUND.

(Table 37 Continued)

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 3 VARIABLE FTSUPPCT ENTERED R SQUARE = 0.11428403
C(P) = 6.63383278

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	3	6237.06903874	2079.023013	13.03	0.0001
ERROR	303	48357.19806224	159.594713		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	73.4920081				
FTADMPCT	0.1980854	0.04159467	3619.495061	22.68	0.0001
FTRESPCT	0.3163517	0.08287107	2325.696086	14.57	0.0002
FTSUPPCT	-0.1779545	0.10155210	490.070827	3.07	0.0807

BOUNDS ON CONDITION NUMBER: 1.009151, 18.11104

THE ABOVE MODEL IS THE BEST 3 VARIABLE MODEL FOUND.

STEP 4 VARIABLE FTSTDPCT ENTERED R SQUARE = 0.12129965
C(P) = 6.19926036

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	4	6622.26559843	1655.566400	10.42	0.0001
ERROR	302	47972.00150255	158.847687		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	73.1626775				
FTADMPCT	0.1964990	0.04150971	3559.609146	22.41	0.0001
FTRESPCT	0.3146142	0.08268442	2299.800472	14.48	0.0002
FTSUPPCT	-0.2146770	0.10402244	676.546645	4.26	0.0399
FTSTDPCT	0.1815327	0.11657463	385.196560	2.42	0.1205

BOUNDS ON CONDITION NUMBER: 1.058871, 33.02697

THE ABOVE MODEL IS THE BEST 4 VARIABLE MODEL FOUND.

(Table 37 Continued)

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 5 VARIABLE FTFDIPCT ENTERED R SQUARE = 0.12805021
C(P) = 5.86995140

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	5	6990.80743591	1398.161487	8.84	0.0001
ERROR	301	47603.45966507	158.151029		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	73.6071473				
FTADMPCT	0.1899540	0.04163990	3291.164156	20.81	0.0001
FTRESPCT	0.3067049	0.08266544	2177.035680	13.77	0.0002
FTSUPPCT	-0.2082091	0.10388053	635.335342	4.02	0.0459
FTSIDPCT	0.1914234	0.11649903	426.989764	2.70	0.1014
FTFDIPCT	-0.1544916	0.10120394	368.541837	2.33	0.1279

BOUNDS ON CONDITION NUMBER: 1.060636, 51.6833

THE ABOVE MODEL IS THE BEST 5 VARIABLE MODEL FOUND.

STEP 6 VARIABLE FTCONPCT ENTERED R SQUARE = 0.13508299
C(P) = 5.44326153

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	7374.75682382	1229.126137	7.81	0.0001
ERROR	300	47219.51027716	157.398368		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	74.2134042				
FTADMPCT	0.1830051	0.04177828	3020.128156	19.19	0.0001
FTRESPCT	0.3053549	0.08247302	2157.675863	13.71	0.0003
FTSUPPCT	-0.2047966	0.10365607	614.407001	3.90	0.0491
FTCONPCT	-0.0941230	0.06026412	383.949388	2.44	0.1194
FTSIDPCT	0.1952579	0.11624741	444.069569	2.82	0.0941
FTFDIPCT	-0.1617147	0.10106870	402.963759	2.56	0.1106

BOUNDS ON CONDITION NUMBER: 1.061107, 74.3614

THE ABOVE MODEL IS THE BEST 6 VARIABLE MODEL FOUND.

(Table 37 Continued)

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 7 VARIABLE FTTCHPCT ENTERED R SQUARE = 0.14005554
C(P) = 5.72746146

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	7	7646.22966040	1092.318523	6.96	0.0001
ERROR	299	46948.03744057	157.016848		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	73.5309888				
FTADMPCT	0.1923613	0.04232996	3242.544267	20.65	0.0001
FTRESPCT	0.3103054	0.08245901	2223.559273	14.16	0.0002
FTSUPPCT	-0.1907507	0.10407999	527.404925	3.36	0.0678
FTCONPCT	-0.0923669	0.06020585	369.573868	2.35	0.1260
FTTCHPCT	0.0487120	0.03704637	271.472837	1.73	0.1896
FTSTDPCT	0.1982721	0.11612906	457.707194	2.92	0.0888
FTFDIPCT	-0.1573075	0.10100177	381.879362	2.43	0.1204

BOUNDS ON CONDITION NUMBER: 1.072404, 101.9908

THE ABOVE MODEL IS THE BEST 7 VARIABLE MODEL FOUND.

STEP 8 VARIABLE FUTRFLD ENTERED R SQUARE = 0.14275448
C(P) = 6.79618016

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	8	7793.57641893	974.1970524	6.20	0.0001
ERROR	298	46800.69068205	157.0492976		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	72.4645384				
FUTRFLD	0.2653643	0.27396155	147.346759	0.94	0.3335
FTADMPCT	0.1955911	0.04246545	3331.676447	21.21	0.0001
FTRESPCT	0.3106106	0.08246813	2227.903096	14.19	0.0002
FTSUPPCT	-0.1835008	0.10435951	485.565569	3.09	0.0797
FTCONPCT	-0.0918159	0.06021476	365.145636	2.33	0.1284
FTTCHPCT	0.0424755	0.03760547	200.360296	1.28	0.2596
FTSTDPCT	0.1893712	0.11650403	414.936945	2.64	0.1051
FTFDIPCT	-0.1534211	0.10109186	361.721037	2.30	0.1302

BOUNDS ON CONDITION NUMBER: 1.077949, 134.2595

(Table 37 Continued)

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 8 FTTCHPCT REPLACED BY FTDSPCT R SQUARE = 0.14340507
C(P) = 6.57169360

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	8	7829.09454437	978.6368180	6.24	0.0001
ERROR	298	46765.1726566]	156.9301093		
TOTAL	306	54594.26710098			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	74.5661676				
PUTBFLD	0.3081226	0.26994305	204.460331	1.30	0.2546
FTDSPCT	-0.0329695	0.02689186	235.878421	1.50	0.2212
FTADMPCT	0.1730889	0.04375814	2455.426449	15.65	0.0001
FTRESPCT	0.2932050	0.08306470	1955.311313	12.46	0.0005
FTSUPPCT	-0.2012516	0.10408075	586.737641	3.74	0.0541
FTCCNPCT	-0.1025845	0.06066523	448.735457	2.86	0.0919
FTSTDPCT	0.1632380	0.11774776	301.608576	1.92	0.1667
FTFDIPCT	-0.1607877	0.10108375	397.053777	2.53	0.1128

BOUNDS ON CONDITION NUMBER: 1.144632, 136.785

Table 38: Multiple Regression of Professionals' Attitude Scores and Future Role

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 1 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE FTDSPCT ENTERED R SQUARE = 0.07002787
C(P) = 19.34540960

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	1861.51768485	1861.517685	9.26	0.0029
ERROR	123	24721.01031515	200.983824		
TOTAL	124	26582.52800000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	88.2745809				
FTDSPCT	-0.1281524	0.04210869	1861.517685	9.26	0.0029

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE FUTRFLD ENTERED R SQUARE = 0.14593310
C(P) = 9.89027998

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	3879.27072950	1939.635365	10.42	0.0001
ERROR	122	22703.25727050	186.092273		
TOTAL	124	26582.52800000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	83.4699780				
FUTRFLD	1.4136599	0.42931404	2017.753045	10.84	0.0013
FTDSPCT	-0.1467101	0.04090894	2393.380242	12.86	0.0005

BOUNDS ON CONDITION NUMBER: 1.019346, 8.154768

THE ABOVE MODEL IS THE BEST 2 VARIABLE MODEL FOUND.

(Table 38 Continued)

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 3 VARIABLE FTBESPCT ENTERED R SQUARE = 0.19089111
C(P) = 5.10550600

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	3	5074.36836828	1691.456123	9.52	0.0001
ERROR	121	21508.15963172	177.753385		
TOTAL	124	26582.52800000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	82.6605603				
FUTBFLD	1.2705258	0.42320053	1602.110531	9.01	0.0033
FTDSPCT	-0.1479229	0.03998460	2432.783028	13.69	0.0003
FTRESPCT	0.3677572	0.14183012	1195.097639	6.72	0.0107

BOUNDS ON CONDITION NUMBER: 1.036989, 18.44814

THE ABOVE MODEL IS THE BEST 3 VARIABLE MODEL FOUND.

STEP 4 VARIABLE FTSTDPCT ENTERED R SQUARE = 0.21943773
C(P) = 2.79743492

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	4	5833.20950044	1458.302375	8.43	0.0001
ERROR	120	20749.31849956	172.910987		
TOTAL	124	26582.52800000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	83.8962357				
FUTBFLD	1.2612673	0.41741966	1578.668922	9.13	0.0031
FTDSPCT	-0.1456534	0.03945108	2356.926316	13.63	0.0003
FTRESPCT	0.3519648	0.14008788	1091.490254	6.31	0.0133
FTSTDPCT	-0.5516451	0.26332715	758.841132	4.39	0.0383

BOUNDS ON CONDITION NUMBER: 1.037106, 32.65888

THE ABOVE MODEL IS THE BEST 4 VARIABLE MODEL FOUND.

(Table 38 Continued)

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 5 VARIABLE FTADMPCT ENTERED R SQUARE = 0.23413131
C(P) = 2.57997344

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	5	6223.80216863	1244.760434	7.28	0.0001
ERROR	119	20358.72583137	171.081730		
TOTAL	124	26582.52800000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	81.7286287				
FUTRFLD	1.3095683	0.41643454	1691.867852	9.89	0.0021
FTDSPCT	-0.1275884	0.04102271	1654.921230	9.67	0.0023
FTADMPCT	0.1098125	0.07267607	390.592668	2.28	0.1334
FTRESPCT	0.3584007	0.13940998	1130.715808	6.61	0.0114
FTSTDPCT	-0.5381436	0.26208293	721.310959	4.22	0.0422

BOUNDS ON CONDITION NUMBER: 1.114958, 52.96491

THE ABOVE MODEL IS THE BEST 5 VARIABLE MODEL FOUND.

STEP 6 VARIABLE FTOTHPCT ENTERED R SQUARE = 0.24434431
C(P) = 3.03869295

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	6	6495.28957364	1082.548262	6.36	0.0001
ERROR	118	20087.23842636	170.230834		
TOTAL	124	26582.52800000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	79.8037704				
FUTRFLD	1.3996067	0.42147182	1879.211313	11.03	0.0012
FTDSPCT	-0.1096630	0.04331247	1091.271528	6.41	0.0127
FTADMPCT	0.1376921	0.07578203	561.983879	3.30	0.0718
FTRESPCT	0.3779002	0.13991746	1241.791047	7.29	0.0079
FTSTDPCT	-0.4905297	0.26413513	587.105976	3.45	0.0658
FTOTHPCT	0.0746301	0.05909600	271.487405	1.59	0.2091

BOUNDS ON CONDITION NUMBER: 1.249111, 82.00033

THE ABOVE MODEL IS THE BEST 6 VARIABLE MODEL FOUND.

(Table 38 Continued)

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 7 VARIABLE FTFDIPCT ENTERED R SQUARE = 0.25150980
C(P) = 3.95732439

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	7	6685.76622146	955.1094602	5.62	0.0001
ERROR	117	19896.76177854	170.0577930		
TOTAL	124	26582.52800000			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	78.9577621				
FUTBFLD	1.3997019	0.42125756	1877.466591	11.04	0.0012
FTDSPCT	-0.1064973	0.04339367	1024.284910	6.02	0.0156
FTADMPCT	0.1460509	0.07615418	625.486325	3.68	0.0576
FTRESPCT	0.3960322	0.14089189	1343.648099	7.90	0.0058
FTSIDPCT	-0.4757050	0.26437220	550.605255	3.24	0.0745
FTFDIPCT	0.2487596	0.23504840	190.476648	1.12	0.2921
FTOTHPCT	0.0831221	0.05960848	330.684294	1.94	0.1658

BOUNDS ON CONDITION NUMBER: 1.258235, 111.006

Table 39: Multiple Regression of Students' Attitude Scores and Agency Income

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 2 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE UWPERC ENTERED R SQUARE = 0.01188965
C(P) = 0.90172547

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	650.16131009	650.1613101	3.69	0.0555
ERROR	307	54032.79014622	176.0025738		
TOTAL	308	54682.95145631			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	75.5283694				
UWPERC	0.0794365	0.04133033	650.1613101	3.69	0.0555

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE FEDPERC ENTERED R SQUARE = 0.02162201
C(P) = -0.11124348

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	1182.35549322	591.1777466	3.38	0.0353
ERROR	306	53500.59596309	174.8385489		
TOTAL	308	54682.95145631			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	75.1569873				
FEDPERC	0.0727986	0.04172596	532.1941831	3.04	0.0820
UWPERC	0.0763744	0.04123060	599.9146745	3.43	0.0649

BOUNDS ON CONDITION NUMBER: 1.001815, 8.014522

Table 40: Multiple Regression of Professionals' Attitude Scores and Agency Income

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

STEP 1 VARIABLE FEDPERC ENTERED R SQUARE = 0.03745249
C(P) = 4.05183706

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	997.11508126	997.1150813	4.82	0.0299
ERROR	124	25626.35317270	206.6641385		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	82.8267734				
FEDPERC	0.1652894	0.07524974	997.1150813	4.82	0.0299

BOUNDS ON CONDITION NUMBER: 1, 1

STEP 2 VARIABLE FEESPERC ENTERED R SQUARE = 0.07550671
C(P) = 1.06838952

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	2010.25054610	1005.125273	5.02	0.0080
ERROR	123	24613.21770787	200.107461		
TOTAL	125	26623.46825397			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	81.9202919				
FEDPERC	0.1724728	0.07411521	1083.651307	5.42	0.0216
FEESPERC	0.2507645	0.11144585	1013.135465	5.06	0.0262

BOUNDS ON CONDITION NUMBER: 1.001859, 8.014871

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

Table 41: Multiple Regression of Students' Attitude Scores and Course

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 29 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE REQDCRS ENTERED R SQUARE = 0.27308767
C(P) = 13.12581510

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	10311.11690172	10311.11690	86.03	0.0001
ERROR	229	27446.38959179	119.85323		
TOTAL	230	37757.50649351			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	58.76462 16				
REQDCRS	4.3535450	0.46936970	10311.11690	86.03	0.0001

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIAELE MSW ENTERED R SQUARE = 0.30758100
C(P) = 3.73146323

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	11613.49174366	5806.745872	50.64	0.0001
ERROR	228	26144.01474984	114.666731		
TOTAL	230	37757.50649351			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	50.2114954				
REQDCRS	3.6300210	0.50681795	5882.361864	51.30	0.0001
MSW	2.3682153	0.70270316	1302.374842	11.36	0.0009

BOUNDS ON CONDITION NUMBER: 1.21867, 5.749361

Table 42: Multiple Regression of Professionals' Attitude Scores and Course.

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 16 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE REQDCRS ENTERED R SQUARE = 0.27946889
C(P) = 12.57489335

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	4946.85618250	4946.856182	32.97	0.0001
ERROR	85	12754.06335773	150.047804		
TOTAL	86	17700.91954023			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	64.1079597				
REQDCRS	4.4370997	0.77276843	4946.856182	32.97	0.0001

BOUNDS ON CONDITION NUMBER: 1, 2

THE ABOVE MODEL IS THE BEST 1 VARIABLE MODEL FOUND.

STEP 2 VARIABLE BSW ENTERED R SQUARE = 0.34564200
C(P) = 5.79735595

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	2	6118.18124720	3059.090624	22.19	0.0001
ERROR	84	11582.73829303	137.889742		
TOTAL	86	17700.91954023			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	53.2826919				
REQDCRS	2.7898329	0.93178241	1236.116298	8.96	0.0036
BSW	3.5540123	1.21939959	1171.325065	8.49	0.0046

BOUNDS ON CONDITION NUMBER: 1.582078, 12.65663

Table 43: Multiple Regression of Students' Attitude Scores and Workshop or Seminar

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 40 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE COMCOLL ENTERED R SQUARE = 0.05053039
C(P) = 0.55264643

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	1705.87749915	1705.877499	11.60	0.0008
ERROR	218	32053.55686449	147.034674		
TOTAL	219	33759.43636364			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	65.4153672				
COMCOLL	2.2746963	0.66781995	1705.877499	11.60	0.0008

BOUNDS ON CONDITION NUMBER: 1, 2

Table 44: Regression of Professionals' Attitude Scores and Workshop or Seminar

MAXIMUM R-SQUARE IMPROVEMENT FOR DEPENDENT VARIABLE SCORE

WARNING: 12 OBSERVATIONS DELETED DUE TO MISSING VALUES.

STEP 1 VARIABLE COMCOLL ENTERED R SQUARE = 0.08715322
C(P) = 1.31311629

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	1764.08462701	1764.084627	8.50	0.0045
ERROR	89	18477.10218618	207.607890		
TOTAL	90	20241.18681319			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	67.0579690				
COMCOLL	3.3646685	1.15426229	1764.084627	8.50	0.0045

BOUNDS ON CONDITION NUMBER: 1, 2

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VITA AUCTORIS

Linda Diane Desmarais Kennette was born on November 28, 1948 in Windsor, Ontario, Canada. She received her elementary and secondary education in Essex County.

In 1967, she began a career as a secretary and data processing operator. She married and remained employed until the birth of her first child. She chose to stay home to raise her three daughters before entering the University of Windsor and receiving a B.S.W. degree in 1984.

She enrolled in the Master of Social Work program in 1984 and will graduate and receive an M.S.W. degree at the October, 1986 convocation. Ms. Kennette is presently employed as a school social worker for the Essex County Roman Catholic School Board.

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