THE DEVELOPMENT OF AN AUDIO-VISUAL CAREER INFORMATION PACKAGE WITH RELEVANCE FOR INDIVIDUALS INTENDING TO PURSUE STUDIES AT MEMORIAL UNIVERSITY OF NEWFOUNDLAND

PART 1

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JAN 29 1981
MEMORIAL UNIVERSITY
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by

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A Project submitted in partial fulfillment
of the requirements for the degree of
Master of Education

Department of Educational Psychology
Memorial University of Newfoundland
August 1979

Newfoundland

Abstract

The intention of this project was to develop an Audio-Visual Career Information Package consisting of six synchronized slide-tape presentations dealing with educational and occupational information. In particular, the project developed overview materials concerning careers available upon completion of a Bachelor's Degree in the Arts, Commerce, Education, Engineering, the Sciences and Social Work.

The project was undertaken in response to a need, both perceived and documented, for the development of locally relevant, up-to-date career information in the province. The materials were intended for use by students in secondary and post-secondary educational institutions and other individuals interested in pursuing a career upon completion of a Bachelor's Degree in one of the above mentioned areas.

The first step in the project was to review audio and/or visual materials available locally; next, a review of the literature was undertaken to determine the type of information considered essential by career information theorists for inclusion in a career information presentation; finally a literature search was conducted to determine the efficacy of presenting career information in an audio-visual format.

Upon completion of the research, six scripts were prepared utilizing information from numerous printed sources, and from a series of ninety-seven audio taped

interviews with university graduates in a variety of occupational fields. Members of various departments at Memorial University of Newfoundland were consulted to verify the accuracy of information.

The final portion of the project involved the photographing of a large number of occupational scenes, and the selection, from a number of slides, of suitably matching scenes.

The audio and visual portions of each presentation were then set up with graphics and synchronized into six final products.

These materials, which were designed for use with individuals or with small groups or classrooms have been made available to the Department of Education, Instructional Materials Division, for reproduction and dissemination to the high schools in the Province of Newfoundland and Labrador.

ACKNOWLEDGEMENTS

A sincere thank-you to my Supervisor, Dr. David Watts, the Department of Educational Psychology for his direction and help in the development of this project.

Further thanks to Mr. Thomas Sullivan of Memorial University Counselling Centre for assistance and advice, Miss Pamela Hiscock for technical assistance and Mrs. Barbara Cadigan and Mrs. Sheila Downey for their un-ending patience in typing the manuscript.

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CHAPTER I

Statement of Purpose

The intention of this project was to design and develop an audio-visual career information package that would provide information for secondary and post-secondary level students, as well as other individuals, interested in pursuing university level course work. The project was aimed at those who were involved in career exploration and/or decision-making activities. The package was designed for use by individuals who are presently attending, or who intend to attend Memorial University of Newfoundland. Counsellors and teachers should find these materials appropriate for presentation to, and discussion with, individuals and groups.

The audio-visual portion of the project took the form of six slide-tape shows. Four of the slide-tape shows were devoted to professional studies available at Memorial University, those being Commerce, Education, Engineering, and Social Work. The remaining two, being substantially longer in duration, were designed to concentrate respectively on the areas of the Arts and the Sciences.

The project was intended for use by high school and university students as well as other interested

individuals who were seeking information about programmes available at Memorial University. General and specific career information about occupational options available through study at the university, occupational outlook, expected salary, and a variety of pertinent career information was included.

An audio-visual format was decided upon since as Simpson (1975) pointed out, many students lack the time, energy and motivation to pursue occupational exploration on their own. In the past, this may well have had to do with the origin, presentation, and age of available materials. From discussions with school counsellors and experiences at the Counselling Centre of Memorial University, it was evident that materials that are available are often not pertinent to Newfoundland or, are out-of-date. In addition, most of the material available was of a printed format. Printed material does not seem to be held in high favor by the majority of school students.

Super (1975) suggested that the lack of understanding about a given field was a major barrier which kept students from making proper career choices.

Establishing a Need For the Project

A review of the literature indicated that writers, researchers, and theorists, (Baer and Roeber, 1964; Breton,

1975; Ginzberg, 1951; Marland, 1974; Parsons, 1974; Super, 1957; Tippett, 1975), have all stressed the importance of the availability of appropriate career information to the process of vocational decision making and choices. Tippett (1975) pointed out that it is important for an individual to have concise, pertinent and most important, locally relevant up-to-date information available to him; in order for that individual to make informed career decisions.

One of the major objectives of the guidance and counselling specialist in the school is to help prepare the student to begin to make some basic career decisions. One of these decisions might have been to pursue further education, another to enter the job market immediately upon graduation from high school.

Considerable research, (Anderson, 1975; Hicks, 1973; O'Reilley, 1974; Parsons, 1974; Parsons, 1975), conducted in the Province of Newfoundland and Labrador, pointed to the fact that sufficient information necessary for students to decide upon future post-secondary educational or occupational plans does not exist.

Findings of the "Report of the Committee on Junior Studies" (1974) at Memorial University showed that when compared to other college and university students, Junior Division students at the institution showed generally less developed career interests.

Parsons' (1974) study of the career decisions of Newfoundland youth expressed the belief that there was a lack of communication about educational possibilities, lack of knowledge about course offerings and entrance requirements to post-secondary institutions, and lack of knowledge of the social and academic environments of these schools. This caused many students to prematurely discontinue their education, and to fail to consider post-secondary education of any sort.

In a later study, Parsons (1975) indicated that an inordinate number of Grade Eleven students in the Province did not intend to continue their education beyond high school.

Anderson's (1975) report concurred with the above mentioned findings. He found that there was an acute lack of career information available to most high school students in the Province.

Several writers, (Anderson, 1975; O'Reilley, 1974; Hennebury, in process) have developed projects to help alleviate this situation. Anderson (1975) developed a Job Analysis Guide which included all jobs for which formal vocational training was available in Newfoundland, that did not require a work prerequisite. O'Reilley (1974) developed an information package detailing how to procure occupational, educational and personal-social information in the Province. A pilot project in Job Exploration with Grade Eleven students in Deer Lake, Newfoundland, in which students were dealing with career materials that had been

adapted to local needs, has not as yet produced a report (Hennebury, in process).

In interviews with Dr. William Kennedy (May 11, 1979), the Supervisor of Guidance and Counselling for the Province of Newfoundland and Labrador, and with representatives of Canada Employment and Immigration, Ms. Beatrice Pittman and Mr. Richard Fifield, (January 29, 1979), a need was expressed by all concerned for the development of career information concerning programmes at Memorial University and occupations available upon completion of these programmes.

Parsons (1975) recommended that an abundance of accurate information on post-secondary fields of study should be available to principals, teachers, and students. Anderson (1975) recommended that career information be developed of jobs requiring a university education in Newfoundland.

Prominent theorists, (Super, 1957; Ginzberg, 1951; Baer and Roeber, 1964; Tippett, 1975; Breton, 1975) and researchers, (Anderson, 1975; O'Reilley, 1974; Parsons, 1974) seemed to be in agreement as to the importance of vocational information to vocational development and career decision-making.

This consensus and the support given to this project by Provincial educators and administrators fully indicated the need for such a project.

Research indicated that sufficient career information did not exist, and that information which did exist was often not up-to-date, not comprehensive enough, or simply not relevant to students in Newfoundland and Labrador.

Format of the Project

An audio-visual format was decided upon, since as Simpson (1975) pointed out, this would be more entertaining and interesting to students than printed materials, and as well, would be capable of reaching larger audiences since the material could be used with individuals or with small or large groups.

The project gathered and synthesized a great deal of information from various media sources on career and vocational information and produced an audio-visual information package with regionality in mind.

Scope and Limits of the Study

This project concentrated on one particular area of career information. The intention was to develop an audio-visual career information package, in a slide-tape format, dealing with information relating to a large sample of careers that are available to an individual upon completion of a four or five year undergraduate programme at

Memorial University of Newfoundland.

At attempt was made to provide a wide range of pertinent career and occupational information for each of the four professional schools at the university; Commerce, Education, Engineering, and Social Work; and as well, for the disciplines described under the Arts and the Sciences in the 1978-79 edition of the Memorial University of Newfoundland Calendar.

Each of the six products contained information concerning educational and entry requirements, the nature of the work, advantages and disadvantages, personal qualifications necessary, information on vacancies in the field, related occupations, advancement, plus a myriad of other valuable career information. Particular care was taken to make the materials locally relevant.

The information presented was designed for use by Newfoundland and Labrador High School students and by First Year students at Memorial University, as well as other individuals who are interested in the pursuit of studies at Memorial University and the formulation of career plans.

Sources of Information

The information was obtained from recent Canadian sources, the Guidance Centre Occupational Information Series,

the Canadian Classification and Dictionary of Occupations (1971), the 1978-79 Memorial University of Newfoundland Calendar, as well as other Memorial University pamphlets and brochures. Information was also gleaned from formal interviews conducted with Memorial and other university graduates, concerning their careers. These interviews were fifteen to twenty minutes in length and were recorded on audio-cassette tapes in a format and with content suggested by Roberts and Irwin (1975); Shelton (1975); Simpson (1975).

The questionnaire used in interviewing the graduates is included in Appendix A.

Interviews were conducted beginning January, 1979 while involved in a project proposed and carried out by counsellors John Russel, Ph.D. and Thomas Sullivan, M.Ps. of Memorial University Counselling Centre. The project, which was funded by the Bronfman Institute, developed career and educational materials for use with Newfoundland students.

Definition of Terms

1. Career. Career is defined as a profession or occupation for which one undergoes special training, or as an occupation or profession engaged in as a life's work.

2. Career Information. For the purpose of this project, this term refers to information concerning either the occupational or educational aspects of an individuals'

overall development from the end of his secondary education onward.

3. Occupational. This term refers to a work activity in which one engages. This term is also defined as the principal business of one's life. For the purpose of this project the terms occupational and career, when preceding word information, are used interchangeably.

Organization of the Remainder of the Project

Chapter II of the project deals with a review of the literature relating to career or occupational information and the importance of this material for career decision making and planning.

Chapter III deals with Methodology, containing information concerning the collection, selection, processing and synthesizing of data, verification of information, format and content choice, sources of information, and a discussion of the video aspect of the package.

Chapter IV is the actual product — a synchronized audio-visual career information package in the form of six slide-tape shows. This package was made available to the Department of Education for copying and dissemination to the high schools in the Province. The package was changed to filmstrip-tape format since most schools in the Province have filmstrip machines but few have synchronized slide-tape equipment. Appendices C through H contain scripts used in

producing the presentations.

Chapter V completes the project with a discussion of recommendations and suggestions for possible further research and as well for potential use of the existing package.

CHAPTER II

REVIEW OF RELATED LITERATURE

Procedures for developing the project

This chapter deals with a review of the literature concerning audio-visual career information presentations, the rationale for the choice of media, the need for career information in our educational institutions and the goals of an audio-visual career information package.

What is an Audio-Visual Career Information Package?

Career or occupational information has been defined by Norris, Zeran, and Hatch (1972) as "valid and usable data about positions, jobs, and occupations, including duties, requirements for entrance, conditions of work, rewards offered, advancement pattern, existing and predicted supply of, and demand for workers, and sources for further information" (p. 29).

Baer and Roeber (1964) described an occupational definition as one which "contained all of the facts that were necessary to understand the occupation clearly, and to distinguish it from all other occupations" (p. 163). The criteria that were included as important in the definition of an occupation were, nature of the work, working conditions,

occupational outlook and entry requirements. Hoppock (1967) listed these and others, including advantages and disadvantages of the work, physical demands and earnings, and stability of employment, as being integral factors in the description of an occupation or career.

Other writers and theorists, (Simpson, 1975; Young, 1969; Hoppock, 1967) have indicated the same or similar characteristics as being of importance in the description of an occupation.

An audio-visual career information package was defined then as a series of career or occupational information presentations, produced in an audio-visual format.

Audio presentations may take the form of reel to reel or cassette tape. Video presentations have been defined as "those concerned with film, filmloop, videotape, overhead transparencies, slides or film strip" (Kinder, 1973, p. 59).

The media deemed most appropriate to the kind of information presented and to the audience to which the information was presented was the cassette/slide or cassette filmstrip format.

The information presented in the Audio-Visual Career Information Package, was designed to provide career information to students at the secondary and post-secondary level.

Rationale for the Media Chosen

Instructional or educational media have been defined

by Morris (1963) as "those things which have been manipulated, seen, heard, read or talked about, plus the instruments which facilitate such activity" (p. 23).

Instructional media have taken one or more forms; lectures, audio tapes, audio-visual presentations, such as audio tape plus slides, filmstrip or film.

Media, a term defined by Webster (1967) as an intervening thing through which a force acts or an effect is produced, has been broken down into three general categories — Audio, Print, and Video — by Stolovitch (1976).

As indicated, the media chosen for this project were the slide tape or filmstrip tape format. Copies of the presentations were made available in both formats.

Costs obviously were a major factor in the selection of these media. However, a review of the literature indicated that the slide tape or the filmstrip tape format compared very favorably with films or video tape in the communication of information (Davies, 1973; Popham, 1969; Stolovitch, 1976).

Recent years have brought theorists to the conclusion that most communication media can readily perform most instructional functions. (Davies, 1973; King, 1969; Menne, Hannum, Klingersmith and Nord, 1969; Popham, 1969; Silberman, 1962; Stolovitch, 1976).

The communication of information has been performed by pictures, by printed language, by auditory language, or

by a combination of media. McLuhans' (1964) dictum "the medium is the message"(p. 7), seemed no longer to apply. No single medium possessed traits which were best suited to perform one or more instructional functions. Indeed all media performed some functions well and some not so well (Stolovitch, 1976; Davies, 1973).

One study, in which an experiment was conducted to compare the effects of a film — slide — audio tape and a printed brochure on factors related to a career in Industrial Arts, showed no significant difference between the effects of the two methods regarding student knowledge or attitude (Young, 1969). However, since students exposed to both methods did have significantly more favorable attitudes and a significant increase in knowledge after having been presented with the information, Young concluded that either method can be utilized effectively in a student information program.

Another study found that in comparing the effectiveness of a slide tape booklet program with the conventional verbal method of presentation, a majority of the subjects tested felt that the slide tape booklet orientation was superior to the verbal method, if a sufficient question answer session followed (Freeze, 1973).

Another theorist, Kinder (1973), extolling the virtues of audio-visual media, stated that attitude and behavior changes were facilitated by means of instructional

media, as were the getting and holding of students' attention. He further indicated that instructional media have been shown to induce greater acquisition and longer retention of factual information and to stimulate interest in voluntary reading. Also, instructional media provided objectivity in the study of a delicate or controversial subject, as well as providing for direct contact by students with the realities of their social and physical environment.

Theorists, (Davies, 1973; Stolovitch, 1976) and other writers and researchers, (Campbell, 1970; Carlson, 1959; Silberman, 1962; and Yenawine, 1969) came to the conclusion that for all practical purposes, any media combination was as good as any other in terms of instructional effectiveness. All performed some functions well and others not so well.

The approach taken in recent years by many educational technologists and instructional developers was to identify a suitable combination with the maximum number of attributes for minimum cost. Stolovitch (1976) has developed a table to describe media attributes. (See Appendix B)

The information provided by Stolovitch (1976) indicated that the slide tape or filmstrip tape media provide all of the favorable factors of video tape or film excluding motion and three-dimensionality. In addition, the slide tape or filmstrip tape format was less expensive,

quicker to produce, easier to edit, and easier for students to view. A final point in the choice of the slide tape or filmstrip tape format was the fact that these media lent themselves readily to individual and small or large group instruction, a very real and positive factor in the dissemination of career information. As Calder (1967) pointed out, modern media make possible the presentation of refined materials to unlimited numbers of learners.

In summary, the slide tape or the filmstrip tape formats have been chosen for use in this project. These media compare very favourably with the more sophisticated film and video tape media in terms of instructional effectiveness, and have the added advantage of being easier to work with and much less expensive.

The Need for Career Information In Our Schools

A great number of variables affected an individual's propensity to choose one occupation or another as a career choice. Numerous theorists, (Baer and Roeber, 1964; Ginzberg, 1951; Holland, 1966; Hoppock, 1967; Super, 1957; Roe, 1957) have pointed to the multiplicity of factors affecting an individual career choice. Parents, peers, significant other, media, socio-economic status, occupational perceptions and information, all have had their impact. Many,

if not most of these variables were out of the counsellors' or the educators' control. Parents, peers, significant others and the media were considered uncontrollable factors. To change the amount of information that an individual has concerning an occupation, and thus his perception of the occupation, if an unfavourable or an inappropriate perception exists, was considered to be within the realm and control of educators.

A number of theorists and researchers (Baer and Roeber, 1964; Breton, 1975; Ginzberg, 1951; Super, 1957; Tippett, 1975) have pointed to the lack of appropriate career information in secondary schools.

As technology continues to improve and expand, thus creating more and different kinds of jobs, choosing sound career plans and implementing these plans will require an even greater evaluation of an individual's interests and abilities, and a greater awareness of available occupations and training needed for these (Atherton and Mumphrey, 1977).

Hoppock (1967) stated that "one may stumble into an appropriate occupation by sheer luck, but the wise choice of an occupation requires accurate information about what occupations were available, what they required, and what they offered" (p. 4).

Although several researchers have made significant attempts to provide career information in our Province's schools, (Anderson, 1975; O'Reilley, 1974; Hicks, 1973); a considerable body of research has indicated the need for a great deal more information in our schools. (Anderson, 1975; O'Reilley, 1974; Parsons, 1974; Parsons, 1975; Turpin, 1972).

A number of researchers have shown that a considerable number of students enter and leave Grade Eleven without having formulated or even having spent any amount of time in beginning to formulate their career plans (Parsons et al., 1975).

The Report of the Committee on Junior Studies (1974) at Memorial University indicated that first year students at Memorial showed generally less developed career interests when compared to other college and university students. The authors of the report further indicated that of those individuals who had made tentative career choices, the career interests of both males and females showed very conservative and conventional choices. The men wanted to become doctors, engineers, or lawyers, the women chose nursing or school teaching. The authors stated that, generally, in terms of career planning, first year Memorial University students were less prepared at entry than students at universities elsewhere.

Turpin (1972) recommended "the development of materials, filmstrips, films, and other resources which would provide a more economical means of giving students wide experience in post-secondary educational and vocational opportunities" (p. 112). Recommendations were also made that career guidance programmes should place greater emphasis on the vocational decision making process (Turpin, 1972).

Similarily, O'Reilley (1974) concluded that counsellors must continue to gather and disseminate accurate, up-to-date and usable information from the occupational, educational, and personal social areas.

Parsons (1975) pointed out that Newfoundland students in general do not have sufficient information to decide on future post-secondary plans. Anderson (1975) in reviewing the amount of career information available locally, found that sufficient information simply was not available. As a result of his findings Anderson (1975) developed a Job Analysis Guide to provide information for students interested in technical and vocationally oriented careers.

Career development and decision making was influenced by the environment to which one was exposed. Pietrofesa (1975) stated that "environmental situations

ranging from broad cultural milieu to the family circle, affect career aspirations, opportunities, preparation, and overall career development" (p. 101).

A logical assumption then seemed to be that the more information that an individual was exposed to, the greater his or her knowledge and vision concerning career opportunities and aspirations may be, and the greater his or her chances of having begun the career exploration process.

Hughes (1971) noted that if the aims of guidance are to insure that pupils are to learn how to make plans and decisions, then they must be given information about the range of choices available and this must be based on sound and relevant facts.

Marland (1972) theorized that much of what is wrong in our society has to do with the people who did not get an adequate career guidance and training early enough and substantially enough to find their way into productive and rewarding fields of endeavour. He felt that schools had to provide more of the knowledge required to enter further education or the work force with confidence.

In summary, a number of researchers and theorists have pointed to the multiplicity of factors affecting an individual's career choice. Factors thought to be within the educator's realm are those dealing with information

dissemination; this project focused upon these factors. In this section, the need for the development and the greater availability of career and occupational information in our schools has been documented.

Goals of an Audio-Visual Career Information Package

Simply stated, the goals of the Audio-Visual Career Information Package were to make available to students and other interested individuals, information concerning careers that were available upon completion of an undergraduate degree programme at Memorial University in the areas of the Arts and Sciences, Commerce, Education, Engineering and Social Work. Hopefully, the programme promoted career awareness of university trained and related professions and in addition provided information in such a format as to make career exploration activities more interesting, entertaining and available.

The high school years have been delineated as an ideal time to sensitize students to the value of career planning and also to help students identify the kinds of choices available and some of the ramifications of these (Astin, 1967).

The specific goals of this career information package as outlined by Norris, Zeran, and Hatch (1969) were:

(A) to provide an abundance of experiences through an audio-visual programme which will acquaint students with many different kinds of work.

(B) to help students to see the interrelationships among various fields of work.

(C) to acquaint students with information regarding the educational and entry requirements of Memorial University and of careers available upon completion of a degree programme.

(D) to provide the opportunity to know that individuals differ in their interests and abilities.

(E) to create an awareness of the need and an active desire for accurate and valid occupational and educational information.

(F) to provide an understanding of the wide scope of educational and occupational activities in terms of broad categories of related activities.

(G) to help individuals to explore job areas and to begin to assess their own strengths and interests.

In summary, the goals of this career information package were not to provide an array of information to every individual looking for a career option, but to provide a great deal of information to those individuals intending to pursue university studies concerning careers available to them upon completion of an undergraduate degree in the aforementioned academic areas.

This chapter has dealt with the definition of an audio-visual career information package and a review of the literature concerning existing audio-visual career information. A discussion of the rationals for this choice of media was undertaken, and further, the need for career information in our schools was established.

A review of related literature concerning the efficacy and validity of presenting career information in an audio-visual format was conducted. All research pointed to the fact that this format is either as good as, or better than information presented in print.

The slide tape and filmstrip tape formats were a comparatively inexpensive media and were very versatile since information may be changed by simply erasing and re-recording with a new script. As Laramore (1970) pointed out ... these media provide the chance for a great deal more coverage than the print medium, since the information may be presented either to one individual or to a small or large group.

The final segment of this chapter dealt with the goals that have been set down for this Audio-Visual Career Information Package.

CHAPTER III

Procedures for Developing the Project

This section describes the procedures used in planning and developing the Audio-Visual Career Information presentations.

The development of this project took place in five stages:

1. Planning
2. Collection of Information
3. The Organization and Specifications of the Presentations
4. Verification of the Information
5. Preparation and Production

Planning

A considerable amount of planning was involved in the initial stages of this project. The project involved taking a massive amount of printed, audio, and visually recorded information and determining which was the most appropriate information to include in such a package. As well, a decision had to be made concerning which medium or media was most appropriate to use in the dissemination of material.

A decision was made based upon the number of criteria: editability, expense, ability to hold students' attention, efficiency of production, potential for reaching as many individuals as possible, and attributes of the medium or media.

A decision was made in favor of the slide tape format since it compared most favorably with all media on the above-mentioned criteria.

The materials were designed so that each package was long enough to include all of the information considered most pertinent by theorists in the career information field, but not so long as to lose the audiences' interest. Each presentation was designed to be ten to twenty minutes in duration.

A great deal of emphasis was placed upon making the presentations as interesting as possible. The materials were designed so that local relevance was considered of prime importance.

Upon completion of considerable research in the audio-visual career information area, both in the literature and in productions available locally at the Canada Manpower Centre and at the Career Resources Centre at the University of Florida at Gainesville (May 21, 1979); it was decided to present the information as a dialogue between the writer and and an actor. This format served not only to break up the information presented, thus helping keep the audiences'

attention, but also to point out through the actor's questions new sections of information and interest.

Collection of Information

Information for the presentations was collected from various media sources — print, audio, and visual.

The Canadian Classification and Dictionary of Occupations was helpful in defining occupations, in giving insight into the kind of work performed, necessary aptitudes and educational and entry requirements.

The Guidance Centre Occupational Information Monographs were very helpful in defining the occupation and describing its history and background, discussing the nature of the work, working conditions, preparation and qualifications needed, the advantages and disadvantages of the occupation and the employment and advancement outlook.

Since the intention of the project was to provide career information which was relevant for individuals wishing to work in Newfoundland and Labrador, great pains were taken to comply with this requirement.

A great deal of the information was gleaned from a series of 97 audio taped interviews with university graduates in St. John's and the surrounding area, in many fields of work, concerning their jobs. These materials were made available for this project through the Counselling Centre

and it was these materials that were instrumental in meeting the criteria for local relevance. Also helpful in meeting this requirement were a series of pamphlets on careers published by Memorial University, "the Memorial University Calendar", and "Careers Newfoundland," Volume I and II, a series published by Employment and Immigration Canada.

When the necessity arose to research, discuss, or clarify a piece of career information, a number of departmental people at the University were extremely helpful and kind in providing the necessary information.

In terms of the visual portion of the presentations, information was made available from several sources.

Educational Television at Memorial University was exceptionally helpful in permitting the sorting, selecting, and copying for use of approximately 400, 35 mm. transparancies from their collection of over 5,000 transparancies. Educational Television at Memorial University kept on file slides concerning many of the various duties and functions of departments within the University. These proved most helpful.

A considerable number of slides were selected from the writer's own personal collection and from a collection of slides concerning various occupations made available by the Counselling Centre at Memorial University. Approximately

7,000 to 8,000 slides were sorted through to come up with the approximately 500 used in the presentations.

Every attempt was made to make each slide as appropriate as possible to each segment of script. Occasionally slides covering general ideas or fill slides were used when more appropriate slides were not available. This practice was kept to a minimum. To this end technical advice and help was given by Ms. Pam Hiscock who is qualified in the media field.

The Organization and Specifications of the Presentations

The information presented in the seven products coincided with outlines suggestions by (Baer and Roeber, 1964; Hoppock, 1967; Norris, Zeran and Hatch, 1969; NVGA, 1977; Young, 1969; and Simpson, 1975).

These theorists and writers have indicated the specifications that a career information presentation should contain. They have been described and listed in various priorities, but all theorists have generally agreed on the areas that need to be covered by a career information presentation.

Simpson (1975) wrote that when describing an occupational field, one should include:

(1) The Nature of the Occupational Field and its Importance. The material developed indicated the common characteristics or work functions of

occupations shown.

(2) Variety of Jobs in the Occupational Field. The material illustrated the variety of occupational activities of workers in this field.

(3) Work Settings. The variety and similarity of work settings in the occupational fields were portrayed realistically.

(4) Potential Personal Rewards Within the Occupational Field. The presentation portrayed not only economic rewards, but also psychological and social aspects of the work, prestige, and opportunity to be creative.

(5) Entry Requirements. The presentation indicated the minimum entry requirements for various occupational fields.

(6) Advancement Possibilities. Information concerning advancement was described since this was considered necessary to any long range view of an occupational field.

(7) Employment Outlook. This information was considered of the utmost importance since students looked first for this information when trying to determine future career goals.

(8) Related Occupations. Finally indicated, was information concerning other career paths that an individual may follow upon completion of training in a programme. For example, under Biochemistry, the fields of medicine, biomedicine, nutrition, and agriculture are mentioned as possible areas of work. (p. 25-26)

The above eight sections were listed by all writers as being of the utmost importance in terms of the dissemination of career information.

Verification of Information

The information presented in the six audio-visual productions was from the most up-to-date sources available. The most recent editions of Careers Newfoundland, the Guidance Centre Occupational Information Monographs, the Canadian Classification and Dictionary of Occupations and Memorial University calendar and information pamphlets were consulted.

The career information contained in the audio cassette tapes conducted with professionals at their places of employment from which much of the information was taken, were also most recent, having been conducted January - July 1979.

Collaboration between the staff at Memorial University Counselling Centre and various other departments within the University, and the writer indicated that the information presented was appropriate and correct.

Preparation and Production of the Presentations

The information presented in the six productions was involved in several stages of preparation and editing.

First of all, an outline was developed using suggestions from theorists in the field of audio-visual information and in career information.

Raw information was researched from numerous sources and first written into long unedited compositions.

Next, a series of questions were designed for each production; these questions were similar but not the same for each production, so as to avoid the impression of a mechanical approach for students who may be interested in viewing more than one presentation.

Finally, scripts were written one at a time, incorporating all of the information researched that was deemed applicable and relevant to the local scene. Scripts were then again edited for appropriateness of material and length, since it was considered important to keep the final products from 10 to 20 minutes in duration.

When the final scripts were ready, each was recorded using a role-playing situation. The writer acted as an authority on the areas of social work, teaching, engineering, business, the Arts and the Sciences. Actresses, Ms. Susan Russel and Ms. Pam Hiscock, played the role of an individual interested in a particular career area.

When the audio taping was completed, there remained the task of selecting, matching, and synchronizing 35mm. slides to complement the script.

Approximately 7,000, 35mm. transparencies were sorted through to come up with appropriate choices for each presentation. The visual segment of the project also went through several

stages of editing before a final selection of slides were decided upon.

Graphic titles were designed and prepared by Ms. Pam Hiscock, and these helped a great deal in making the productions take on a professional quality.

The completed package consisted of six synchronized slide tape presentations of approximately 15 minutes in length, dealing with careers in the areas of the Arts, Education, Engineering, Commerce, the Sciences, and Social Work.

Procedure for the Remainder of the Project

Chapter IV consists of the six actual slide tape presentations. Appendices C - H respectively contain transcripts of the presentations.

Chapter V contains a summary of the project, recommendations for use of the package, recommendations for further research, and conclusion.

CHAPTER IV

Audio-Visual Career Information Package

This chapter consists of six synchronized slide tape presentations dealing with careers in the respective areas of the Arts, Commerce, Education, Engineering, the Sciences and Social Work. The scripts used in the production of each of these presentations appear in Appendices C, D, E, F, G and H, respectively.

CHAPTER V

Summary, Recommendations, and Conclusion

This chapter will deal with a summary of the processes involved in the development of the Audio-Visual Career Information Package, recommendations for use of the presentation, recommendations for the further research and development, and conclusion.

Summary

The purpose of this project was to develop an Audio-Visual Career Information Package of careers that were available to individuals upon completion of an undergraduation degree programme. The areas that presentations were developed for were the Arts, Commerce, Education, Engineering, the Sciences and Social Work.

The first step in this process involved a review of the literature dealing with the development and the dissemination of career or occupational information. From this information, a large number of questions were developed for use in an occupational information questionnaire. These were later revised and refined into the Career Information Questionnaire in Appendix A.

With the help of this questionnaire, information for this project was collected from a series of audio taped interviews conducted in and around the St. John's

area. The available literature also provided a considerable amount of information for the project.

Information gleaned from the taped interviews served to confirm information available in the printed literature and also helped to attain the indicated criteria for local relevance.

Other individuals involved in the occupations were consulted to verify the accuracy and appropriateness of information, where any doubt existed.

Research into the literature on occupational information indicated that the following were considered most important for inclusion in the presentation of career information:

A. The Nature of An Occupational Field and its Importance.
B. Variety of Jobs in the Occupational Field.
C. Work Settings.
D. Potential Personal Rewards within the Occupational Field.
E. Entry Requirements.
F. Advancement Possibilities.
G. Employment Outlook.
H. Related Occupations.

The information presented in each of the presentations coincided with this outline.

Once compiled, the information was written into scripts. These scripts went through several revisions and

were finally written into scripted dialogues. Each script was then recorded on audio cassette tape. Finally a series of 35 mm. transparencies were selected for each production, and the audio and visual portions of the project were then synchronized into six 10 to 20 minute presentations.

Recommendation for Use of the Package

Sufficient emphasis cannot be placed on the importance of the availability of accurate, up-to-date, locally relevant occupational information to young people engaged in career exploration. The media chosen for this project served to facilitate changes in the production that will become necessary as a result of our rapidly changing world of work. The information presented will, for the most part, remain unchanged for several years. Every effort has been taken to eliminate information that might serve to unnecessarily date the information.

Two sections however should be viewed with revision in mind; entry requirements and especially employment outlook will likely change over time, and these should be revised or at least reviewed with revision in mind annually, in order for the package to maintain its status as an effective aid for career counselling and occupational information dissemination.

The materials have been designed with economy and efficiency in mind. These materials have been produced for students in secondary and post-secondary institutions, and other individuals interested in careers available upon completion of a Bachelor's degree at Memorial University, in the above mentioned areas.

These presentations may be viewed by one individual or in small groups or classrooms. The presentations have been designed to be short enough in duration (10 to 20 minutes) to allow time for discussion in a regular classroom period. Teacher and counsellor help in the form of comments, questions, and discussion will enhance the effectiveness of these presentations.

The materials have been made available to the Department of Education for reproduction and dissemination for high schools throughout the Province.

Recommendations for Further Research

The following recommendations are made for further research:

1. that Audio-Visual Career Information presentations of occupations which require formal technical or vocational training, available at Trades and Vocational Schools in the Province and at the College of Fisheries, Navigation, Marine Engineering and Electronics be developed.

2. that the development of Audio-Visual Career Information presentations of occupations requiring no formal academic, technical, or vocational education be developed.

3. that a detailed study of materials that are presently available and materials needed in the career information area in our schools be made.

4. that a central agency or division in the Department of Education whose function it will be to keep on file up-to-date, relevant sources or lists of career information in audio, Audio-Visual and print formats be established. This would enable counsellors and educators to have immediately available information on where to find new materials and programmes, and costs involved in the purchase of these programmes.

5. the Faculty of Nursing has made arrangements to prepare a presentation on careers in Nursing. It is recommended that these materials be made available to the Department of Education for reproduction and dissemination to the high schools in the Province.

6. that an evaluation mechanism to determine the validity of presenting career information in an audio-visual format be developed.

Evaluation might consist of comments from users of the presentations — students, teachers, counsellors, and actual employees in a given occupational field — as to accuracy of information, maintaining of interest, answering

of most important questions, appealing presentation of information and length or presentation.

In addition an evaluation might conceivably look at the effectiveness of the programmes when viewed by a group with discussion, and without discussion.

Further evaluation might determine the effectiveness of these materials when viewed by different age group levels; for example, by grade ten, by grade elevens, and by first year university students.

Conclusion

Results of research has indicated that career information presented through audio-visual media, have the capability of being more interesting and entertaining than printed materials to the young person beginning his or her career exploration (Kinder, 1973).

In many instances, the only career information materials available in the counsellor's office are those in print. Since printed materials did not seem to be held in high favor by students, many students may not have even tried to prepare themselves for further education or for the world of work.

A logical assumption seemed to be that when a student had a better understanding of a given occupational area, a greater chance existed that that individual may explore in

this or related occupational areas. Hopefully, these presentations will remove university studies from the realm of the magical and place them in the realm of real and practical career alternatives.

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APPENDIX A

CAREER INFORMATION QUESTIONNAIRE

APPENDIX A

Career Information Questionnaire

I. The first thing students might want to know is "What exactly do you do?"

What are the educational requirements? What about experience - - is experience necessary?

How is your job different from others in the same field?

What personal qualifications do you feel are important to have to do this work?

What route or "career path" did you take to get this job?

What do you like most about this job?

What do you dislike about the job?

2. We're sitting in your office now, are there other settings in which you work?

3. What are the rewards of this kind of work?

What might a person starting out in this position make?

What are the intangible rewards - psychological and social?

What else could you do with your qualifications?

What are the opportunities for a Bachelor's level person? Are there related occupations in Newfoundland?

4. What are the possibilities of advancement?

How do you see your career developing from this point?

Do you see yourself changing jobs?

What other occupations have you considered with your education and background?

Are any provisions made by your employer to enable you to advance - sabbatical, etc.?

Are there many vacancies in this or related professions in Newfoundland and Labrador for men and women?

Is there anything that I've missed - anything a student who is interested in this field should know?

--- A Final comment.

APPENDIX B

MEDIA ATTRIBUTES TABLE

APPENDIX B

Media Attributes

Media

		CAI input/output terminal	Videotape	Super 8-filmloop	16mm film	Overhead Transparency	Slide	Filmstrip	Realia	Print	Audio tape (Cassette)	Audio tape (reel)
TASK	Audio	/	x		x						x	x
	Visual	x	x	x	x	x	x	x	x	x		
	Motion	/	x	x	x							
	Color		/	x	x	/	x	x	x	/		
	3-Dimensionality								x			
	Realism		x	x	x		/	/	/		/	/
LEARNER	Response Acceptance	x				/				x	/	/
	Feedback	x	/	/	/	/	/	/		x	x	x
	Audio	/			x						x	x
	Visual	x	x	x	x	x	x	x	x	x		
	Self-Pacing	x	x	/		/	x	x	x	x	/	/
	Random Access	x	/			x	x	x	x	x		
PRODUCTION	Editability	x	/	/	/	x	x	x	/	x	x	x
	Transportability	/	/	/	/	x	x	x	/	x	x	x
	Simplicity		/			/	x	x		x	x	x
	Low Cost					x	x	/	/	x	x	x
	Short Time Requirement	/				x	x	/		/	x	x
DISTRIBUTION	Editability	x					x			x		/
	Self-Contained	x		x	x	x	x	x	/	x	x	x
	Scheduling Flexibility		x	x	x	x	x	x	x	x	x	x
	General Availability		/		/	x	x	x		x	x	x
	Ease of Use	x		x		x	/	x	x	x	x	/
	Low Cost					/	x	x		x	x	x
	Quick Set-up Time	/		x		x	/	x	x	x	x	x
	No Special Environment	/	x	/		x		/	x	x	x	x
	Grouping Flexibility	/	/	/	/	/	x	x	x	x	x	x
	Compactness Handling/ Storage		/	x	/	/	/	x		/	x	/

X = Is usually present in the medium
/ = Can be obtained, but is not a usual attribute of the medium
- = Is usually not associated with the medium

APPENDIX C.

CAREER INFORMATION SCRIPT

THE ARTS

This presentation will deal with careers in the Arts. The Arts, or the programmes of study described under the Faculty of Arts, have been with us for a great deal of time. Man has been studying the Arts for as long as he has been communicating by written language. The ancient cultures of Egypt and Rome have left behind them indications that they had undertaken systematic study in mathematics, in literature, of the sun, the stars, and the seasons. Plato, Homer and Archimedes all were students of the Arts.

Today the term "The Arts" is used to encompass many disciplines. At Memorial University there are 19 disciplines listed under the Faculty of Arts.

These are: Anthropology, Classics, Computer Science, Economics, English Language and Literature, Folklore, French and Spanish, Geography, German and Russian Literature and Language, History and Linguistics, Mathematics and Statistics, Music, Newfoundland Studies, Philosophy, Political Science, Psychology, Religious Studies, and finally Sociology.

All of these may be described as coming under the Faculty of Arts.

As you can see, the Arts cover the study of Language, History, Philosophy, Sociology, and so on. These areas of study may be further grouped into the Social Sciences and the Humanities. The Social Sciences are those that deal with the study of people, whether it be an historical study, or a

present day study of individuals, groups, or entire races. Anthropology, Economics, History, Political Science, Sociology and Geography, are all Social Sciences. These disciplines study man and how he functions or has functioned in the past and in the present.

The Humanities may be defined as those areas of study concerned with human thought and relations as well as language and literature. Study in the Humanities available at Memorial University include: Classics, English Language and Literature, Folklore, Spanish, German and Russian Language and Literature, Linguistics, Newfoundland Studies, Philosophy, Psychology and Religious Studies. Another Division under the Faculty of Arts is the Performing Arts. Memorial University offers a degree in Music, available through the School of Music. The final divisions offered under the Faculty of Arts are Computer Science, and Mathematics and Statistics.

Q. If I wanted to find out information about one or more of these disciplines so that I might decide if I want to study in that area or not, where could I find the information?

A. Any counselling office, whether it be a school or a university, will have information on each of these disciplines. Your counsellor or teacher will be glad to help you find the information. A library is also an excellent place to look. The librarian will be more than glad to help. The Memorial University Counselling Centre has a great deal of up-to-date

information available. Students who are attending university, or who intend to pursue university studies, are welcome to drop by and browse through the information or chat with a counsellor.

Q. What path do I follow if I wish to pursue a degree in the Arts?

A. Students who wish to pursue studies in an area described under the Faculty of Arts, follow basically the same course of action as any student undertaking first year university studies.

The first year student must take ten courses in his first year. These courses follow a basic pattern — two courses in English, and two courses in two of Mathematics, History, or a second Language. The student may then choose two elective courses from a list of many options.

These courses give the student some basic skills with which to work, and enable him or her to continue on with their studies.

A student may or may not be ready to choose a major at the beginning of his or her second year. This is really not critical — some students do not choose a major until their third year, and there are students who change their major in the middle of their university careers. The important thing is to find out, if you do not already know, what area you are most interested in studying in, in time to complete the required courses.

Q. Isn't it important though to know what you want to

study early in your university career?

A. It would be ideal for a student to decide upon a major at the end of his or her first year. This would allow the student considerable leeway in planning a programme. Under the Faculty of Arts, students will complete 12 courses in one area of concentration. This is called a student's major. Some students choose to do what is called a double major. That is, they complete 12 courses in one area and 12 courses in another completely different area, hence the double major. For example, a student may complete 12 courses in English, and a further 12 courses in, say, Sociology. Upon graduation, the student will have completed what is called a double major. The reasoning behind this is fairly simple, it gives the student some extertise in two areas rather than one.

On the other hand, there is something to be said for completing one major. It makes the students overall education more well rounded since it enables the student to take some course work in virtually any of the disciplines in the university. Under the Faculty of Arts a student must complete ten first year courses and 12 courses in one area of concentration. Eighteen courses remain with which a student may choose courses in any area of study.

Q. What kind of things can a person do with an Arts Degree?

A. Students who graduate with a degree in Arts may work in any number of settings. The Arts Degree makes the student

a well rounded individual in terms of education. The student will have some basic skills and abilities that enable him or her to fit into middle level positions in Government, Business and Industry. Graduates in Arts may teach in secondary schools, perform as research assistants, administrative assistants, and so on. Some areas, for example, Sociology and Psychology, offer more specific skills which enables the graduate to work as Social Workers, Probation Officers, and Parole Officers.

With a major in a Foreign Language, a graduate may be employed by the Federal Government as an Interpreter, or a Translator.

In summary, many government departments, both Federal and Provincial, employ Arts Graduates, as do various areas of business and industry. They like the fact that the Arts graduate has a general education which enables the individual to perform well in many areas of work. Employers also like the fact that the graduate with his given level of education may be taken and trained without a great deal of trouble, to perform in a more specific function.

Q. Are there any personal traits or qualifications that might be needed to study in the Arts?

A. The basic qualification needed to study in the Arts is interest. A student should have a sincere interest in the area in which he or she intends to study. Considerable time will be spent over the student's university career, in attending

lectures and in reading and preparing assignments in the student's major area of interest.

A student should be an intelligent individual who is willing to put in the required hours -- an estimated 30 to 35 hours a week — for attending classes and preparing assignments and studying.

Q. How do I know if I am interested in pursuing a career in the Arts?

A. The very best way to find out if you are interested in a career in the Arts is, if possible, to take a course in an area in which you think you might be interested.

Introductory courses in university usually give an overview of many of the topics that one would cover more in depth in courses taken in the third and fourth years. This gives students, who do not know what they want to major in, a chance to experiment with various course areas.

For the student in Grade XI who is trying to decide on an area of interest, I would recommend that that person read as much as possible in the potential area of interest.

A visit to the school coursellor, if one is available, is a good course of action. The counsellor has the skills and materials necessary to help in career exploration and decision making. The counsellor will be able to provide information on a great number of occupational areas and may be able to provide the student with an interest test which may give the student

a good indication of where his or her interests lie.

One further suggestion is — talk to people, especially people who may be working in an area in which you are interested, much can be learned from a person who has several years experience in the field.

Q. What about further training in the Arts — I've heard it said that a Masters Degree is required to get a job?

A. That's not completely true. Most of the people who graduate with a Degree in Arts, find employment in their field or in related fields. A recent study of Memorial University graduates found that approximately 60% of the graduating class had found jobs within three months of graduation. Many graduates choose to remain in a job and gain experience on the job. Some, however, prefer to pursue a Masters Degree either directly after or within a few years of getting a Bachelors Degree.

The Masters Degree is the first professional degree. Upon completion of a Masters Degree, an individual may take on considerably more responsibility, and will gain in status and pay. The Masters Degree tends to allow the individual to move into administrative and other responsible positions more quickly.

In summary, we've been talking about the Bachelor of Arts Degree and Career Information pertaining to a degree in Arts.

It's important to remember that although practically all students who graduate with an Arts Degree will find a job

in this, or a related area, the Arts Degree is not, and should not be looked upon as job training.

The course work and study involved in an education in the Arts develops the mind of the individual. Students become thinkers, and reasoners, and have some basic wide-ranging skills in observation and decision-making. The graduate in the Arts has a general education which can be put to use effectively in any number of areas.

APPENDIX D

CAREER INFORMATION - SCRIPT

COMMERCE

This presentation will discuss the courses of study offered by the School of Business Administration and Commerce at Memorial University, and careers available upon completion of the Bachelor of Commerce Degree.

In this presentation, we will take a look at what business, as a profession, involves; the areas in business in which an individual may work; the options or majors that a student may pursue under the Bachelor of Commerce Programme, and the education preparation that makes up the Bachelor of Commerce Degree Programme. As well, we will take a look at the personal qualifications needed, and at the employment and advancement opportunities avialable in the profession.

Let's begin with a little background information about the discipline.

The first courses that were offered in Business at Memorial University were in the late 1950's. Later, the Bachelor of Commerce as a Degree Programme was offered, and, in 1973 the School of Business Administration and Commerce was established.

The economic growth that occurred in the mid and late 1960's, combined with changing technology, increased the need for both the number and the type of business graduates. With greater emphasis on business and resource and industrial development in the Province, more and more business managers and specialists were needed. A great number of opportunities exist today for the graduate in Business.

Q. You have discussed the development of the Business School and the fact that Business graduates are in demand in other areas, could you tell me a little about the kind of things that graduates in Business do?

A. Graduates from the School of Business may do many things. That may sound pretty vague, but it is the case. Students in this programme are given a general training over the first four years of study and in their fifth year, students may choose an option in one of the possible areas of study if they wish. Students are not, however, required to major in any particular area. A student may graduate with a general degree or may choose to specialize.

Q. I guess what you're saying is that a student may choose a major or may pursue a general education in Business developing some skills in all areas; for the person who wants to major in one area what does the school have to offer?

A. There are four areas in which a student may major within the School of Business. There are: (1) Accounting and Finance; (2) Marketing; (3) Management and Industrial Relations; (4) Quantitative Methods, Production and Computer Science. Every student that graduates from the programme will have had exposure to courses in each of these four areas.

The programme is designed so that a student will complete fifty courses. There are ten required first year courses. Over the next four years, a student will complete forty courses — seventeen of these will be general Business

courses, five will be Economics courses, and ten will consist of Mathematics, Statistics, and Computer Science. The student in his final year will complete eight courses to finish the programme. These eight courses may be in one area of specialization such as those mentioned above, or the student may select courses from the four previously mentioned areas.

Q. You've talked about the area in which students major, but you haven't said much about what kinds of work people who major in these areas do, could you talk a little about these and explain what each does?

A. Okay. Let's take Accounting and Finance first of all.

The Accounting and Finance option trains students to be able to compile and to analyze business records and prepare Financial Reports, such as Profit and Loss Statements, Balance Sheets, and Cost Analysis, just to mention a few. Accountants keep accounting systems up-to-date for their employer, and develop new systems to save employers or clients money. Accountants are also involved in the auditing of books. The accounting of today is different from what it was twenty or even ten years ago. Accounting has moved increasingly into the area of computers and a student who wishes to work in accounting should expect to develop some facility in working with computers. Accountants are needed in every type of business from the smallest to the largest. They may work in the public or private sector — with Business, Industry or with Government.

Students who complete their degree with a major in accounting generally take on a further period of training in an accounting office, so that they may take the exams that allow them to become Chartered Accountants.

The areas of Accounting and Finance are closely related; graduates of the programme who concentrated more on the area of Finance, deal in stocks and bonds, securities and budgeting. These students take courses in investments and taxation, and become employed by stockbrokers, banks, finance companies and government agencies such as the Department of Tourism, Rural Development, and the Newfoundland and Labrador Development Corporation.

In short, students are employed in any setting where financial analysis and forecasts are undertaken.

Marketing

Marketing is a term which encompasses all of the processes of selling a product to a consumer. Market Research, Consumer Behavior, and Advertising and Sales Management, are all part and parcel of marketing.

The student who majors in marketing will take courses in these and other areas. Marketing majors learn not only to sell goods, but also look at how to package ideas and services, and how to determine whether or not a product or a retail or wholesale outlet is needed is a particular area.

Upon graduation, marketing majors will generally be employed as managers, whether it be a retail or wholesale outlet,

advertising companies, or various government departments or agencies.

In a small company or department, a marketing major may become manager at the beginning of his or her employment; for larger business and industry or government, it may take several years to reach the managerial level.

Management and Industrial Relations

The Management and Industrial Relations option trains individuals in the science of Management and Industrial Relations. This includes training in personnel and labour relations, collective bargaining, labour economics, and other related areas. Individuals who major in this area are employed by the personnel and labour departments of Government, Business and Industry, and, of course, by Labour Organizations.

Quantitative Methods, Production and Computer Science

This option, which has recently been reviewed by the School of Business, is involved with the areas of Mathematics, Statistics, and Computer Science, as well as Management. The graduate in this area has skills in several fields. On the one hand, he understands and can operate computers, and can pursue statistical studies; and on the other hand, he has skills in the management area.

Corporations such as International Business Machines and Xerox are interested in hiring these kinds of graduates, sicce they have the skills necessary for advising concerns, large and small, about the computer and business machines

necessary for each job. These individuals also work in Business, Government, and Industry in management positions.

Q. I've heard people say that Economics is pretty close to Commerce, in terms of the kinds of work that the graduates are employed in later?

A. No, that's not completely true. Graduates in Economics are concerned with the problems which arise in dealing with limited resources of land, raw materials, manpower, and manufacturing products, so as to meet, as well as possible, peoples' needs. Economists are concerned with the supply and demand for goods and services and the ways in which goods are exchanged, produced, distributed, and consumed.

Economists develop overall policies to deal with inflation, depression, taxation, and so on.

Graduates in Business may be involved in some of these kinds of activities, but for the most part, they will deal with business related matters — the selling of a product, accounting, personnel and many others. Business graduates most often deal with short term problems, whereas economists deal more in long range situations.

Q. What are the personal qualifications needed to succeed in this programme, and what preparation is needed to get into the School of Business Administration and Commerce?

A. Students who are interested in the programme should follow the course outline set down for first year students in the most recent edition of the Memorial University Calendar.

In the first year, the student should try for good marks. Fifty-five percent is the minimum requirement for entry into the programme, but this is only a minimum and there is competition for the available spaces. When a student has finished his or her first year of studies, they should then apply for acceptance into the School of Business. Marks and interest are the main criteria for acceptance. The personal qualifications needed are interest and a reasonable degree of ability in Mathematics related courses. Other skills and abilities necessary to become adept in Business will be developed throughout the programme.

Q. When discussing the Commerce Programme at Memorial with friends, I've heard the term Co-operative Programme mentioned. What does this mean?

A. The School of Business Administration and Commerce at Memorial University established the Co-operative Programme several years ago. The programme has been set up to provide students with academic skills and also, through the co-operation of Business, Government, and Industry, both in this Province and outside, with the opportunity to work in actual business settings. The programme has been very successful, and it has many advantages. It gives students a chance to put into practice what they have learned in their academic terms, and it gives them a chance to meet and work for prospective employers. Also, they can see how well they fit into the work environment. It allows the student to complete a full year of work experience in up to

three different settings and, since students are paid for their work, it helps them support themselves financially throughout the latter part of their university careers.

Q. Is the employment outlook good for Business graduates?

A. The employment outlook for graduates for the School of Business Administration and Commerce is very good. Of a recent graduating class, 89.7% of graduating students had jobs within three months of graduation and ninety percent of the students who found employment stated that they had gotten the jobs that they were looking for.

The programme produces well trained individuals who have developed skills in management and other areas and who are able to fit in with any number of organizations upon graduation.

In summary, we have been talking about the School of Business Administration and Commerce at Memorial University, and careers that are available upon completion of a Degree in Commerce. The programme is an excellent one. It produces individuals who are able to deal effectively with others and who can utilize tools from the areas of Accounting, Industrial Relations, Marketing, and the Quantitative areas, to help solve problems that arise in their day to day work.

APPENDIX E

CAREER INFORMATION SCRIPT

EDUCATION

Q. What is a teacher and what does he/she do?

A. In Newfoundland, as in any other place, a teacher is a person who instructs students in an educational or rehabilitation setting. There are all sorts of teachers: primary, elementary, junior high and high school teachers, physical education teachers, special education, as well as rehabilitation, trades, and technical, and university teachers.

Q. There sure are a lot of different kinds of teachers, but what do they all do?

A. Today's teachers are professionals who help prepare youth to be intelligent, reasonable, social human beings with the ability to achieve self-actualization while contributing to the progress of the group.

Q. That sounds pretty flowery to me. Could you throw it back to me in more simple terms?

A. Well, I mean the teachers work with young people in the schools, and in other settings, teaching academic subjects but also helping students learn to become mature responsible adults with the training to enable them to go out in the world of work or onto further education and to be able to take care of themselves and others.

Q. Could you tell me a little bit more about teachers?

A. Well, teachers today differ from teachers fifty or even twenty years ago in that they are required to attain certain academic levels and to meet professional standards.

Let's listen to the comments of one elementary teacher in St. John's.

"Newfoundland has gone through a long history where teachers have come from Grade 11 and taught immediately after leaving Grade 11 and, in that way, there have been many, many good teachers. However, in the present day position that we are in, I think, with having to justify ourselves, by ourselves I mean teachers, to the public at large who are spending the educational dollar on the schools and so on, that I think it is reasonable and safe to say that the minimum requirement would be a Bachelors Degree in Education. That would be the minimum, I think. About the possibility of getting jobs with the Bachelor of Education with no experience, of course, today, you are on pretty tenuous ground. Further qualifications, I think, would certainly be necessary — another Bachelors Degree in Arts or Science or whatever field you're going to be in."

Mr. Peter Chalker
MacDonald Drive Elementary

A. Generally, a school teacher in Newfoundland must have a university degree for primary or elementary teaching. (A four year Bachelor of Arts/Education is recommended.) To teach high school an individual would need a Bachelor of Arts, or a Bachelor of Science, plus a Bachelor of Education Degree. Thses courses of study usually take five years to complete. To become a Music teacher, Home Economics teacher, Special Education or Industrial Arts teacher, or Vocational Education teacher, generally requires five years of study. To be qualified to teach at a university requires longer periods of training, a Bachelors Degree and a Masters Degree are considered minimum for the most part. Some people say that a Ph.D. or as it's called a Doctorate is necessary to get a job.

Q. If I were interested in becoming a teacher what path would I follow?

A. In Newfoundland, a person must first matriculate from Grade 11 with an overall average of at least 60% to be accepted at university. Upon acceptance at university or at some point in one's first or second year, a person must decide whether he is interested in teaching at the primary or elementary level or at the high school level or beyond. He or she must then choose a course of studies. Information about this may be found in the most recent edition of the Memorial University of Newfoundland Calendar under the Faculty of Education. If you have any trouble understanding the calendar, ask your teacher or counsellor. They'll be glad to help.

Q. What's it really like being a teacher?

A. From my own experience, it's an interesting and stimulating profession. Generally, facilities are bright and new and equipment satisfactory. With the increasing government awareness of the importance of education to this country, it has become a well respected profession. Working conditions are normally very good with modern classrooms and a reasonable student-teacher ratio. Modern teaching methods are always being introduced including open area schools, open education, wide use of specialists and teacher aides, and the greater use of instructional technology and the newer media.

"At MacDonald Drive, of course, we have not a peculiar set-up as compared to other schools, but we have a pod kind of system, which means just a big classroom with three classes, three Grade Five classes in the one area. And, we move back and forth with these classes intermingling of course, depending on the groups they are in. Each of the three teachers who are in that pod setting, that huge classroom setting, have an opportunity of teaching all of the children, so the whole class, the whole pod, or whole large grade gets to know each of the teachers individually and the teacher, of course, gets to know many of the children individually and on a very personal and intimate level. This school has been designed such that the teachers work area is just off of the pod so that we are still in close proximity to the children. This has its draw-backs, of course, but it also has its advantages and, having come from a school system where I had my own classroom and into MacDonald Drive in which we have the pod system, I am beginning to be converted to this kind of system because you get to know the children so well. And, I think, that for any prospective teacher coming into the field this is of paramount importance."

Mr. Peter Chalker
MacDonald Drive Elementary

Q. It sounds pretty appealing, but how many hours are involved in the run of a week. On the face of it, it seems like a teacher only works about five hours a day, five days a week. There must be more to it than that.

A. Many people think teachers work short hours but really a teacher's job involves a lot more than five hours a day.

"If you see teachers who leave at quarter after three, or twenty after three, it just means that they are taking papers home. Teachers who stay until five or six, do it in school. I prefer to leave at three-thirty, or thereabouts, and take my work home on weekends. This past week, as a typical example, I've marked three classes of Economics tests, three classes of History tests, and a class of History assignments. I've got an Economics assignment coming up this Friday and I've got another History assignment coming up on Friday, a Grade Ten History test next week and

and the week after that three more Economics tests and another History test in Grade Eleven. So, it's a continuous thing."

Mr. R. Hicks
Prince of Wales Collegiate

A. The average teacher's work week is from 48 to 50 hours. One must take into account the time spend at home preparing lessons and tests, marking tests, and of course, the extra-curricular activities which every teacher is expected to take part in, for example, Athletics, Music, Debating, and Science or Academic kinds of clubs. According to this secondary school teacher extra-curriculiar activities involve a lot of time.

"Every teacher on the staff is associated with some club or other, or some sort of extra-curricular activity. For example, the last two years when the Daily News and VOCM had this "Topics" thing where students reported to their school, I was associated with that group. Other teachers may be involved with public speaking, drama club; I was involved with UNESCO for a number of years. I was associated with the student's council for a number of years. So, as a teacher sponsor, you are expected to attend meetings when meetings are called, to be on call at short notice for students who want to ask you some things or to ask your advice. And, when they engage in activities you are expected to play a role. If it's a dance, for example, the teacher sponsor is naturally expected to chaperone. All teachers, by the way, here, are responsible for attending at least one dance in the capacity of a chaperone in the year. You're assigned to one and if you can't make that particular one, it's your responsibility to arrange for someone else, so you just perhaps switch times. The onus is on the teacher to do that, so you're responsible for that as well. There are many, many extra-curricular activities."

Mr. G. Cooper
Prince of Wales Collegiate

Besides extra-curricular activities and normal teaching duty, teachers are also responsible for the preparation of materials and tests, etc.

Q. Well, I know something about how to become a teacher and I've got an idea of working conditions and what a teacher does, etc., but could you tell me a little about the personal qualifications that would be necessary to become a teacher.

A. Well, I guess the characteristics necessary for success in teaching are those that enable a person to direct the activities of others cheerfully, and effectively. In addition to good physical and mental health the teacher needs a pleasant disposition and the ability to communicate a feeling for, and a feeling with, students.

"In order to survive, I think, you've got to be able to establish good relations with students. You can't be too aloof. You can't be too much one of the boys either, because you will be taken advantage of. You have got to stake out a middle ground. You've got to be stern at the right times, you've got to be dictorial at the right times, you've got to be willing to concede at the right times, you've got to be diplomatic at all times. If you don't enjoy working with people I don't think you could survive in this business because there is so much contact. You can see if you walk through our corridors during any class period, the corridors are chintzed with students. You have got to pick your way gingerly around them. Somethings you have to, I think, overlook. You can't expect all students at all times to be models of etiquette and very, very well behaved. You can't either, allow students who misbehave, or who behave in a socially unaccepted manner, to be able to do it with impunity. I think it's a matter of the right combination of carrot and stick. If you can't do that, I suppose if you don't enjoy working with students then you might as well not consider this profession at all."

Mr. G. Cooper
Prince of Wales Collegiate

It goes without saying that it is important to have a liking for children and young adults and a sympathetic understanding of their attitudes and behaviors.

"You need lots and lots of patience and lots and lots of compassion, and to be thoughtful about the children. You can't brush them off. You've got to take a minute, sometimes when you are in a real hurry, to stop and listen. You just have to treat each one as much as an individual as you can, as you situation allows you to. If you have got forty that's very difficult. Then, you have to take the time to explain to them that there are lots of demands on your time and sometimes you are not as understanding as you might be and can't stop to listen. Children do respond to that sort of thing. They do understand and mostly you have to be patient, thoughtful, and compassionate."

Miss Kay Newell
Bishop Field School

This elementary teacher also felt that patience was an important quality to have in teaching.

"Enormous amounts, inexhaustible amounts of patience is very important. Not patience that is imposed by you in yourself but a patience that comes from an understanding of the child's condition."

Q. What are the advantages of being a teacher?

A. Teachers today are more respected than their counterparts in years past. The higher academic qualifications required to become a teacher today plus the continuous upgrading in the form of workshops, conferences, etc., have all helped place teaching as one of the most respected professions.

Teachers often put in long hours in a given week but then teachers also have more holidays per year.

"I have brothers who are not teachers and they say that I have got it knocked with two months off in the summer, two weeks off for Christmas, one week off for Easter, who wouldn't like to be a teacher. But parents, that come into the school and see what kind of work we are doing and the many long hours that we spend there, realize that it's a job that you have to dedicate yourself to, without becoming high-blown and flowering the language, too clicheish and that kind of thing. You have to have the dedication, you have to put the time in, because otherwise, you cannot justify your existance in the classroom if you don't. The reward is, I feel, when your students have left you and they come back later on and you see two or three years down the road and you can see that Jane Smith has even done better than I thought. Not done better academically which is important, I feel, but she developed or he's developed into a reasoning human being, a sympathetic human being, a human being who feels for others. They are all going to have their problems, they are all going to have difficulties but hopefully they will have gotten the training that will help them face the difficulty with a certain amount of reality about them and be able to cope with them and if you see a child who is able to do this, a child who shows responsibility, I think this is the reward."

Mr. Peter Chalker
MacDonald Drive Elementary

A. Teaching today also offers a good salary level compared to years gone past, and, in Newfoundland, the Newfoundland Teachers' Association is a strong organization and is very progressive in protecting teachers' rights.

Q. But what are the disadvantages of teaching?

A. Well, most teachers find their work satisfying and rewarding. However, there are some individuals who find after entering the occupation that they are not particularly suited to it. They cannot get along well with the students or they have problems handling discipline in large groups.

"One of the biggest frustrations is having a very large group to teach and just not being able to do the things the way that you feel they should be done. I find that job satisfaction is important in any job. In teaching, your job satisfaction comes from dealing with the children and being able to teach them in the way, individualizing as much as you like, having the time to get around and see how the children are doing, go over things where there are problems and things like this. And, if you have a large group you just can't do that. That's really frustrating."

Mr. G. Cooper
Prince of Wales Collegiate

Some teachers feel that changes in the educational scene are happening too slowly while others feel that things are changing a little too fast. For the most part, however, teachers who enter the profession remain there for a life-time. They find it a very satisfying job.

Q. There has been a great deal of talk lately about teachers not being able to find jobs. What's the real story?

A. There seems to be a considerable number of unemployed teachers around according to all the talk one hears. A study conducted by Dr. Phillip Warren at Memorial University showed that in fact there are. Dr. Warren's sample of 369 teachers gleaned from lists of substitute teachers across the Island turned up some very interesting information about these people however. He found that many teachers are unemployed because: (1) they are under qualified; (2) they want a part time position only; (3) they are unwilling or unable to make their services available when and where vacancies occur.

Q. So, what is happening, then, is that teachers are unemployed, either, because they are underqualified or because they are unwilling to move outside their home areas.

A. That's right. Teachers in Newfoundland seem to want to work in the urban areas more than in the rural areas. There are many jobs advertised in the papers that, I'm told, often go vacant because someone is unwilling to move to a rural setting.

> "There are still a fair number of jobs available but I think teachers, young teachers, have to be prepared to go for them. I think that in a few years this may change but in the present I think a teacher has to be prepared to go to some of the smaller places. Sometimes this can be rather trying. A story, I recently came across, was of a teacher who went to a very small and very isolated Northern Labrador community. There is very little communication, the isolation is extreme during the winter, and within a couple of months he had about all he could take. A plane, I think it was Grenfell Association plane happened to stop by one day and the teacher grabbed whatever clothes he could and packed a suitcase and the next morning when school opened he was missing. He hadn't said a word to anybody. He got out while the getting was good. I think teachers have to be realistic in where they feel they can live, what they feel they can do. Some people take isolation much better than others and there are many degrees of isolation. There are many small towns, around Newfoundland now, where isolation is not much of a problem and teaching jobs are very attractive more so in some ways than in the larger centers because in St. John's one of the biggest problems you are dealing with is very large classes and very heavy workloads. While in many of the smaller communities the workload is lighter and the classes are much smaller and the teaching situation much more informal."
>
> Mr. R. Hicks
> Prince of Wales Collegiate

A. Dr. Warren also pointed out that a lot of the people who are called unemployed teachers are, in fact, married women whose husbands have careers in a certain geographical area. These people are unable to move away to find jobs.

Another group of the unemployed simply did not want full time jobs. Some married women whose husbands have good jobs are only interested in working part-time.

Most important, in his study Dr. Warren found that, often people were not specialized enough to make themselves saleable. Most people who become teachers major in primary, elementary, or high school education. Too few teachers specialize in pre-school Education, Reading, Chemistry, Physics, Physical Education, Home Economics, Religious Education, Business Education, Guidance or the Fine Arts. Very few of the unemployed teachers in Dr. Warren's study had specializations in these areas.

"You know yourself that years ago people went into education because they couldn't think of anything else to do. What are you doing? I'm doing education, boy! Why? I couldn't get in here or I'm just waiting for a couple of years to see what I'm going to do. So it went that we had finally a glut of teachers. We are in that position now where we have, where I would consider, we are reaching the over-supply point. It's very difficult to get a position in St. John's as it is very difficult getting teaching in any major metropolitan area in Canada. There are positions in the outlying areas, of course, but many teachers are not willing to go there. The same thing is true in the medical profession. Doctors are not willing to go outside the larger urban areas. But, I hope, that this won't discourage teachers from entering the field."

Mr. Peter Chalker
MacDonald Drive Elementary

Q. I guess then that anybody who really wants to become a teacher should spend some time thinking about it and finding out information about teaching.

A. Yes, that's pretty well it. There will always be jobs for teachers. In this age of specialization, however, one needs

to do a great deal of planning. You've got to find out what's needed and what's going to be needed in five years, and go after that. With good common sense and planning you'll do all right. Talk to people — teachers, parents, professors, counsellors. Don't be afraid to ask questions. A little planning really goes a long way.

APPENDIX F

CAREER INFORMATION SCRIPT

ENGINEERING

This presentation will discuss the programmes of study offered under the Faculty of Engineering at Memorial University of Newfoundland.

In this presentation we will take a look at what Engineering as a profession involves, the different types of Engineers and what they do, the educational preparation and personal qualifications needed to become an Engineer, and the employment and advancement opportunities in this profession.

First of all let's start with a little background information about Engineering.

The profession of Engineering is relatively new in this Province. Memorial University established a three year diploma in conjunction with Nova Scotia Technical College, the very first in Newfoundland and Labrador, as recently as 1930. In 1967 the decision was made to establish a degree programme in Engineering at Memorial, thus changing the programme from a three to a five year one and making it a professional degree.

The economic growth that occurred in the mid and late 1960's increased the need for engineers in this Province, both the number, and the types of engineers. With the increasing industrialization that has occurred in Newfoundland, the upswing in business, greater emphasis placed on the environment, the development of our vast fish resources and mineral, petroleum and hydro developments, engineers have been in great demand.

Today, there are a wide variety of rewarding opportunities for graduates of the Bachelor of Engineering Programme at Memorial University.

Q. You talked a little about the development of Engineering in this Province and the fact that engineers work in a wide variety of settings; could you tell me a little about the profession itself? What is an engineer — what does he or she do?

A. An engineer is a person who designs, develops, supervises, and reports on the construction or fabrication of public utilities, industrial works, communications systems, highways, dry docks, airports, and many other projects. Engineers work in just about any place where designing, developing, and fabricating goes on. They bring applied scientific calculation and technological expertise to whatever type of project they apply themselves to.

Q. It seems like there are a lot of different kinds of engineers these days. Would you tell me a little about each of these?

A. Yes, that's right. There are all sorts of engineers today. The onset of the Industrial Revolution increased the complexity of the work undertaken by engineers and this resulted in the development of a number of branches of Engineering, for example, mechanical, electrical, civil, chemical, mining, metallurgical, industrial, and aeronautical, not to mention engineering physics.

In the recent past other branches of Engineering have developed as well — aerospace, biomedical, geological, petroleum, ocean, electronic, marine, and environmental engineering.

Engineers are responsible for our physical environment, and its management and control. They design and build everything from buildings, to the roads that lead up to those buildings, the heating plant that keeps the building warm, the air conditioning that keeps it cool; they design the windows that let in light and keep out the elements; they design the electrical system that enables power to be brought to each and every corner of the building; and today engineers are very much involved in designing, building, and testing alternate forms of energy, such as solar energy, wind energy, wood powered heating, and many, many other forms of energy.

Q. It sounds to me like engineers are involved in the designing and developing of almost everything that is made today?

A. I think that's essentially true. At some level, engineers are involved in the design, planning and development of most reasonably sophisticated products — whether it be goods and equipment manufacturing, resource development, or community development.

There are approximately 80,000 professional engineers employed across Canada. An increasing number of women are getting involved in this field today. Approximately 10% of a recent

first year engineering class at Memorial University were women.

Q. Would you tell me a little about the Engineering Programme offered at Memorial University. In what areas might a person train at MUN?

A. Memorial University offers training in the three fundamental areas of engineering — civil, electrical, and mechanical engineering. A minor option is available in either mining or industrial engineering. All the branches of engineering mentioned above are really offshoots of civil, electrical and mechanical engineering.

Civil engineering may be defined as engineering which involves the designing, building, and testing of construction projects. It is involved with such projects as roads, airfields, railways, and the planning of communities, buildings, dams, bridges and tunnels, just to mention a few.

The mechanical engineer is involved in the designing, developing, and testing of mechanical systems. No job is considered too large or too small for the mechanical engineer — whether it be redesigning the tiny mechanical release mechanism in a tape recorder, designing a building, or overseeing the building of a massive generator for a hydro plant such as Churchill Falls. Mechanical engineers may design such things as sewerage disposal works, hydraulic works such as the car ramps used in service stations; and incinerators, pumps, and engines for any number of applications.

The electrical engineer is, once again, involved in the designing, developing and building of electrical or electrical-related systems. He may design electrical lighting systems, power plants, electrical machinery such as elevator conveyors, communications systems and equipment and many other electrical applications.

Students wishing to specialize in any of the other areas might have to consider programmes at other universities. Quite often these specializations can only be done at the graduate studies level.

Q. What about the other branches of engineering, for example, biomedical engineering or petroleum engineering?

A. The work "Engineering" is derived from the Latin word "Ingenium", which means talent, native ability, genius, cleverness, or something produced by these. Thus, engineers are designers and developers of new ideas, machines, processes and systems.

Engineering, then, when preceded by any word means design and development in that particular area, for example, petroleum engineering has to do with the designing and developing of systems and machinery for mining petroleum. The biomedical engineer is a scientist involved in putting technology to use.

Q. Could you tell me a little more about the day to day work of the engineer?

A. The kind of work that an engineer does depends upon training, personal tastes, talent, amount of experience, and

employment opportunities available. An engineer's area of specialization may be in one or several of the above-mentioned branches of engineering. While working within the broad scope of any one of these branches, the engineer's duties may be research and development, design, construction, production, evaluation, planning, operation, sales, and management.

When first hired, the student engineer may perform duties that are essentially manual, such as assisting a surveyor, drafting in an office, operating a machine, supervising in factory production, or assisting in a laboratory.

As young engineers gain experience they take on the responsibility for projects of their own. When still further experience is gained they may spend a considerable portion of their time, if not all of their time, directing engineering staffs or in conferring with the management of corporations, the heads of municipal or governmental bodies, departments or commissions.

For the alert young engineer, very little of the work is repetitive. Most engineering undertakings are different from previous ones and involve the need for research, invention or innovation.

Q. What are working conditions like for the engineer?

A. Working conditions for the engineer are as varied as the number of kinds of engineer. Generally some positions call for an active outdoor life while others involve mostly office work. Many engineering jobs, however, involve a little

of both.

Throughout an engineer's working career he or she may find that upon first beginning a career a good portion of time is spend outside, whereas, as time passes more time is spent inside in management kinds of duties.

An engineer's work is not unhealthy, although he or she may be called upon to spend several hours per day at sites where dampness, dust, fumes, and large machinery are present.

As an engineer grows in experience and rank, he or she may occasionally have to spend an intensive amount of time including overtime working on a project to meet a deadline. Otherwise, an engineer works a forty hour week with two or more weeks of holidays each year.

Q. What are the personal qualifications needed to become an engineer?

A. In order for an individual to be successful as an engineer, he or she should possess analytical, calculating and planning ability. The individual should be interested in finding out not only how things work, but more particularly why they work and what might make them work better.

A prospective engineer should be good in mathematics, should have a strong interest in science and its applications, and should be creative.

Other interests and abilities are also important in in the profession. Engineers must be concerned with human

relationships and with the well-being of the community. As the results of their work usually have a far reaching impact on the lives of those around them. Engineers must be able to work with, and supervise others, since their own expertise usually places them in senior supervisory and managements positions where they must be leaders. Also, engineers must be effective communicators, not only to be able to work with others but especially to be able to present and discuss the details and implications of their work.

Q. What are the educational requirements needed to become an engineer?

A. In order to become an engineer a person must complete a university programme in engineering, usually consisting of five to six years of study.

A student who is interested in becoming an engineer will take one year of general studies at university that may be described as a qualifying year. The student should take courses in Mathematics, Physics, Chemistry, English, and one other subject of their own choosing. It would prove extremely helpful to have taken these courses in high school as well.

Towards the end of the first year, the student must make formal application to the School of Engineering, a minimum average of 55% in the first year is required, but admission may be limited so students should do as well as they can in order to compete. Students considering a career in engineering should keep in mind that it is an area deeply rooted in Science.

Memorial University's School of Engineering has established an excellent cooperative programme in mathematics and scientific technology. Skill and aptitude in these areas are more than just an asset, they are a requirement for success. The programme was established in 1969.

It differs from a standard Bachelor of Engineering Programme such as those offered at most other universities across Canada in that it offers the student a chance to work in the field of engineering before he actually graduates. A student in the co-operative programme at Memorial will complete eight academic terms and six work terms. These are organized so that a student will spend one academic term at Memorial followed by one term in the field.

The co-operative programme has many benefits for students; it gives students a chance to put into practice what they have learned in their academic terms; it gives them a chance to meet and work for prospective employers and to see how they fit into the work environments. Also, it allows the student to complete two full years of work experience in various work settings and since students are paid for their work it allows them to support themselves financially throughout most of their university career.

One final benefit worth mentioning concerning the co-operative programme is that it enables students to complete their work terms not only in the Province but in other Canadian Provinces and in fact in other parts of the world.

The two years of accumulated work experience and the good contacts that are made with employers also greatly improves the chances of students finding satisfying work opportunities.

Students generally have decided upon their area of specialization after four terms of academic study and three work periods. In conjunction with their choice of major, a student will then express an interest in filling his or her work terms with one or more of the companies that participate in this engineering programme.

Approximately 100 firms in many areas of industry, business and government participate in this co-operative programme.

To mention a few, Advocate Mines, Terra Nova Engineering, Westinghouse Canada Limited, Syncrude Canada Limited, Parks Canada, Newfoundland & Labrador Hydro, National Sea Products, the Environmental Protection Service and the Canadian Transportation Commission. Many, many more firms, too numerous to mention, also participate in this programme.

Q. What's the employment and advancement outlook like for engineers?

A. The employment situation for graduates of the engineering programme at Memorial University is very good. Eighty-one percent of a recent graduating class had received jobs before graduation and 100% of these graduates had secured employment within three months of graduation.

Graduates may occasionally have to bend their interests a little in order to fit into a job where the exact job that they are looking for is not available. However, any experience is valuable experience. This will make the engineer a well rounded individual. In some branches of engineering, students may have more troubles finding employment than in others. This is true of civil engineering to some extent. Since civil engineering involves building and construction, the civil engineer will be less in demand when the business cycle is on a downward trend. However, the employment outlook for all engineers forecasted into the early 1980's looks very good.

There are a great number of areas in business, in government, and in industry where graduates of the engineering programme are hired. Some of these employers both in the Province and outside are, Atomic Energy of Canada, Imperial Oil Limited, Marystown Shipyards, McNamara Industries, Wabush Mines, The Saskatchewan Power Company, Price (Newfoundland) Pulp and Paper Limited, The St. John's Metropolitan Area Board, and many, many others.

For the first few years following graduation a young person should try to broaden personal experiences and knowledge within his or her speciality. After these initial years when the person has settled into an area, advancement may occur rapidly.

Individuals who are interested in administrative type work will generally find themselves involved in this sort of

work in a few short years. Between 50 to 60% of all engineering graduates will be engaged in managerial positions after having worked for several years in the field.

The engineer must work very hard at times under adverse conditions of heat, cold, or hazard. He or she must assume responsibility for success of projects ranging from the design of a small building to a large dam or an airplane. This may require a lot of hard tedious work before any results are seen. However, engineering is a very satisfying career for those who have the skills and abilities required and who have a real interest in science and technology.

APPENDIX G

CAREER INFORMATION SCRIPT

THE SCIENCES

Look around you. What do you see? Inside there are lights, chairs, telephones, walls, windows, television. Outside there are automobiles, streets, streetlights, trains, airplanes, huge buildings, etc. All of these things have been made possible, to a great extent, by Science. There are so many branches of science, virtually a science to study every aspect of this world and its life, not to mention the sciences that involve the study of other planets, galaxies, etc. Science goes back to the beginning of civilization. When natives of Africa first developed slash and burn agriculture, whereby they would clear land in the jungle by cutting down what was possible and burning off the rest, so that they could plant their crops; they were practicing a primitive form of science. Science attempts, through observation and experiments, to establish rules and laws by which organisms and objects or things work or operate. In the next little while let's take a look at the study of science today. In particular let's take a look at the programme of study offered under the Faculty of Science at Memorial University and some of the kinds of occupations that a person may pursue with a degree in science. The areas or departments in which a person can major at Memorial are: Biochemistry, Biology, Chemistry, Geography, Geology, Mathematics, Statistics, Computer Science, Physics and Psychology.

Q. Could you tell me a little more about the sciences. How are they defined or grouped?

A. Biology, Biochemistry and Psychology come under the

area of the Life Sciences. These sciences study life and living organisms and the various processes involved therein. Physics, Chemistry, Geology and Geography are contained within the area of Physical Sciences. These sciences can be differentiated from the life sciences in that they deal generally with inanimate objects. Geology and Geography study various aspects of the earth's surface. Physics studies matter and its relationship to other forms of energy and Chemistry is concerned with the property of substances and with changes in composition and structures that substances undergo. Finally Mathematics, Statistics, and Computer Science take their place under the heading Computational Sciences.

Q. Well, you seem to have included all the categories of science but one. What happened to Applied Sciences?

A. Memorial offers one science which might be defined strictly as an Applied Science. Engineering is an example of an applied science. Engineering at Memorial comes under a different faculty and will be dealt with in a separate presentation.

A phrase that is often heard these days is the Social Sciences. The social sciences include study in such areas as Anthropology, Geography, Political Science, Sociology, and Psychology and these are included under the Faculty of Arts at Memorial, which will also be covered in a separate presentation.

Q. But wait a minute. Didn't you just talk about Geography and Psychology as being part of the Faculty of Arts and just a minute ago it was part of the Faculty of Science.

A. Yes, that's right. A person can obtain either an Arts Degree or a Science Degree in either Geography or Psychology. The difference is the orientation that one wishes to take. Under the Arts Faculty in these areas of study, the stress is on the social aspects of the discipline, whereas under the Faculty of Science, the more physical aspects of Geography, or the more technical aspects of Psychology are stressed.

Q. I guess I still need to know a little more about each of the sciences that you listed at the beginning of this discussion. Could you tell me a little more about them?

A. Sure, let's start with Biochemistry.

Biochemistry

Biochemistry is the study of the chemical composition of living organisms. A biochemist identifies and analyses the chemical processes related to such biological functions as muscular contraction, reproduction and metabolism, just to mention a few. Biochemistry has existed for many years, going back to Biblical times, when farmers fermented grain to produce alcohol. Biochemists today are employed in the fields of medicine, biomedicine, nutrition, and agriculture.

Biology

Biology is the study of life and living organisms. It is often divided into the two major disciplines of Zoology and Botany. The botanist is concerned with plants and their environment, structure, hereditary, etc. The zoologist studies all types of animals to learn their origin, inter-relationships, diseases, habitats, genetics, etc. The practice and application of Biology are basic to Medicine, Dentistry, Nursing, Agriculture, Forestry, and Fisheries and is basic to all aspects of the management of our environment and natural resources.

Chemistry

Chemistry is a science concerned with the properties of substances and with the changes in the composition and structure that substances undergo. Chemists involve themselves in research in order to discover new knowledge or to improve our understanding of what is already known. They develop new products and processes. Chemistry is now a major factor in the lives of all of us. We constantly use the products that chemists test and make and we benefit from all of these. Over the centuries we have seen the development of alloys, agriculture, paint, paper, cereals, and ink, just to mention a few.

Geography

Geography is a study of the nature and uses of the areas of the earth's surface. Geographers relate and interpret

interactions of physical and cultural phenomena. They also conduct research on the physical aspects of an area or region and its human activities. They observe, analyse, and map the characteristics of the terrain of an area. By so doing, they are able to provide much of the basic data for the location of new settlements, roads, airfields, and the like. By conducting land-use surveys and mapping and interpreting the results, they are able to assist in the orderly and efficient use of resources and with problems concerning the protection of the environment.

Geology

Geology is the study of the structure, composition, and history of the earth's crust to find natural resources, give warning of natural disasters, and determine whether land will support large buildings and other structures. Geologists do field work in exploration and research — laboratory research, teaching, and consulting. Many geologists work in one or more of these closely related activities, seldom restricting their work to a single specialty. Since geologists spend much of their time in field observation relating facts of one locality to those of another some distance away, special skills in surveying, map making, note taking, and sample collecting are needed.

Physics

Physics is the science which trys to present a logical and coherent picture of the nature of matter and its relationship

to other forms of energy. Physics is made up of a number of special fields. Mechanics, hydrodynamics, light, heat, sound and acoustics, electricity, magneticism, electronics, and geophysics. The physicist is a person who has a general knowledge of many of these areas and an intensive knowledge of a few of them. In cooperation with the Department of Fisheries and Oceans, a physicist may develop electronic computer systems to determine the fish populations on the Grand Banks. Another physicist might work in a sound laboratory developing new and better acoustically absorbing materials for industry. Still another physicist may be involved in developing a more efficient generating mechanism to be used at the Churchill Falls power site.

Psychology

A psychologist is a person who collects, interprets, and applies scientific data for the purposes of investigating behaviour and that which influences it. A psychologist may perform experiments on small animals, rats, mice, and pidgeons, to study the effect of treatments such as internal and external environmental factors on the reproduction rate, nervous activity, circulation and digestion of these animals. A psychologist may study the sleeping patterns of people to determine the functions of sleep. Another psychologist may study the feeding and migratory habits of populations of birds, whales, moose and other animals. (A psychologist, upon completion of his research then decides whether the information that he has come up with

may be applied to humans.)

Psychologists may work in the areas of medicine, biomedicine, neuro-psychology, and education. They may also teach, prepare articles for technical publications and journals, or perform as administrators.

Q. What about Mathematics, Statistics, and Computer Science?

A. Well, a mathematician undertakes research in fundamental mathematics to advance mathematical knowledge and develop on improved mathematical techniques. He or she may apply mathematical principles and techniques to solve problems in activities such as scientific research, engineering and management. Mathematicians may work in such applied fields as electronics, atomic energy, life sciences, or economics.

Statistics

A statistician plans, surveys, collects, organizes, interprets, summarizes, and analyses numerical data. He or she applies statistical theory and methods to provide usable information in scientific and other fields. The statistician may also be responsible for developing questionnaires, conducting surveys, and organizing and evaluating data. Results are written up at the end of each project or project section often using charts, graphs, and tables, the tools of the statistician's trade.

Computer Science

Computer Scientists define problems for business, scientific, or technical applications. They search for the

particular information needed, and design a computer programme for processing the necessary steps and methods to satisfy the specific requirements. A businessman, for example, may wish to do a market forecast for a new product. The computer scientist collects all of the information, codes it so that the computer may understand it, feeds it into the computer, and then comes up with the forecast needed. As the world becomes increasingly science and technology oriented, the need continues for persons trained in mathematics, statistics, and computer science which serve as the very foundation of the modern era.

Q. Would you tell me something about the personal qualifications and preparations needed for a person to become a scientist?

A. Professional scientists must be systematic in their approach to solving the problems which they face. They should have a probing, inquisitive mind and a degree of aptitude for science related matters. Patience is a very important asset for the scientist. Often scientists, whether they be biologists, mathematicians, or physicists, will spend much of their research life seeking the cause of a single disease, cure, or problem. Students may determine their aptitude and interest in the work of the scientist by taking courses in the particular area in which they are interested. Laboratory assignments, for example, provide actual information on the techniques used by the working scientists. Students who intend to pursue the Bachelor of Science degree at

Memorial will need a good background in high school mathematics and in science courses. Good marks are necessary. The degree programme is normally four years in duration. A student will take a minimum of ten courses per year over a four year period. An Honors degree will take slightly longer.

Q. What can a person do with a degree in scinece? What is the employment outlook like?

A. A degree in science offers an individual some very specific yet transferable training. The federal government is the largest employer of science graduates in the country. In recent years with the increasing government awareness of the importance of this country's vast and varied resources, more and more science graduates are being employed. Agriculture, Environment, Defense, Fisheries, the Research Council, and the Department of Health are just a few of the departments that hire graduates each year. The Provincial Government in Newfoundland also hires a number of graduates in science each year. Business and industry employ a number of science graduates as well, for example, in Biology, Biochemistry, or Chemistry, as technicians in industrial plants, or as sales representatives for pharmaceutical and chemical companies. Universities, as well, employ a number of people as instructional assistants and laboratory assistants. A number of students who complete a science degree in the life sciences apply to medical school. Others choose to continue on to the Masters or Doctorate Degree level immediately. The

employment outlook for graduates in the sciences in generally very good. The employment situation may change from year to year. A student interested in a career in the sciences should keep himself or herself informed by talking to counsellors at their educational institutions, and, of course, by talking to Canada Manpower counsellors.

Q. What about further training in the sciences? I've heard it said that a Masters Degree is necessary for many jobs.

A. This is not completely true. Most graduates in science find employment with various government departments and because of the nature of their work — the fact that a great deal of research work is involved — choose to return to the university for a Masters Degree. This raises both the salary level and the status of the individual. The Federal and Provincial governments make provisions for individuals wishing to upgrade themselves in the form of one year leave of absences at half pay, educational allowances, etc. A Masters or Doctorate Degree is not the single prerequisite for advancement in government service but it does speed up the process to a great extent.

Q. What do I do if I choose an area of science to specialize in and after a year of study decide that it's not for me?

A. If a person finds himself or herself in this situation, it is a simple matter to change one's major to another area of

interest. The courses that the person has taken can still be used toward their degree. They will not be wasted.

We have been talking about the sciences and careers in the sciences. We have mentioned the preparation and qualifications needed, the nature of the work, the work environment, employment prospects, etc. Science is fascinating. Each science involves such a vast amount of information that a person need never be bored for want of new things to learn. Whether it is Biology or Chemistry, Geology or Mathematics, the student interested in a career in science will find an absorbing and rewarding life's work. Often as a scientist grows in knowledge and experience, he has at hand a vast amount of equipment and resources and the freedom to pursue his own area of scientific interest. If you wish further information about careers in the sciences, talk to your counsellor or instructor, or to a person who is already working in the area in which you are most interested. They will be only too glad to provide further information for you, or, if they do not have it, to recommend a person who has the information.

APPENDIX H

CAREER INFORMATION SCRIPT

SOCIAL WORK

Memorial University of Newfoundland offers several degree programs in Social Work.

In this presentation we will try to look at what Social Work as a profession involves, at the types of social work careers and work opportunities available in Newfoundland, and at the programmes of studies in social work at Memorial.

To start with, it should be pointed out that the profession of Social Work is a fairly new field in Newfoundland, but it is one that has grown to play a major role in the network of social services that our modern society makes available to its citizens. The twentieth century has seen the development of new and improved services in the care and rehabilitation of the sick, the handicapped, the aged, the disadvantaged, those in trouble with the law, those with mental or social adjustment difficulties, generally those in need of a helping hand to assist them through a period of stress or crisis.

As our society has become more affluent, we have been able to devote resources to allow people to dedicate their lives professionally to caring for the needs of the less fortunate. Previously, these were services that were the responsibility of the family, of volunteers, or of the clergy or medical professionals, if indeed care was provided at all.

Our modern society has recognized the importance of having people who are specially trained, and this has fostered the emergence of a variety of new service professionals, an important one of which is the social worker.

Newfoundland has moved along with these developments. During the past 15 to 20 years there has been a great deal of growth in social services, and many changes have taken place in the nature of the social workers' job in this Province. To keep pace with the need for well-trained people, the School of Social Work has expanded and developed at Memorial University. Today there are a wide variety of rewarding opportunities for graduates of the social work program, who have the interests and skills for helping others.

Q. You've mentioned that social workers are involved in a wide variety of work activities and work environments. Could you tell me a little more about these so I could have a better idea of exactly what a social worker does?

A. Some of the more important settings where you might find social workers would include the following: medical and psychiatric settings, welfare departments, vocational-rehabilitation departments, childrens' aid societies, community organizations and recreation programs, prisons, and many other settings.

The largest employer of social workers in Newfoundland and Labrador is the Provincial Government; and most of the people who are employed as social workers in the Province work with the Department of Social Services.

In Newfoundland, the Department of Social Services is divided into three general areas: Social Assistance, Child Welfare, and Corrections.

Social workers who work in Social Assistance are involved with seeing that short-term and long-term welfare recipients have enough money to meet their basic physical needs. They see to it that the recipient has a place to live and the food, clothing, and medical attention that are necessary.

Social workers are trained to help people learn to deal with their problems; whether they are emotional problems, such as the inability to cope with a normal work environment, or the inability to deal with authority effectively; or situational problems such as poverty, illness, and unemployment. As well as offering financial assistance, social workers offer the individual counselling and support so as to enable that individual to adjust to, or alleviate, his problems. Social workers may work with individuals or groups; the majority of social workers in Newfoundland work on a one-to-one basis. Social workers are responsible for trying to encourage and help those people who are able to work, to find employment. In Newfoundland a special branch of the Department of Social Services was developed several years ago. The branch was called "Employment Opportunities", and its function was to create or search out jobs in the community for individuals who had few skills and who were receiving social assistance.

Q. You've talked mostly about social assistance up till this point, can you tell me a little about Child Welfare and Corrections?

A. Yes. The Department of Child Welfare deals mainly with children who have been given up for adoption.

A social worker is given a case load to deal with when he or she is first hired. As that person gains experience this case load may increase in number. Each case for a child welfare worker will involve three individuals or groups of individuals — the baby that is being given up for adoption, the parent or parents of this child, and the family that is interested in adopting.

A child given up for adoption may be placed immediately with a family that has been screened and deemed suitable parents by a social worker, or the child may be placed in a foster home until such time as suitable parents are available. The ultimate decision as to whether or not parents are suitable will be made by the Director of Child Welfare upon the recommendations of the Social Worker.

Social workers in Child Welfare must also occasionally deal with the more unpleasant task of child abuse. In these cases social workers must investigate cases of abuse and if the offence is serious enough, will pass the information on to the courts. The courts will try a case and will sometimes decide that a child should be taken from the parents and placed in a

foster home.

Corrections is another division of the Department of Social Welfare.

In this division social workers deal with juvenile offenders or law breakers. The social worker in corrections deals directly with parents, the courts, and, of course, the juvenile.

When a juvenile has been caught breaking the law, the social worker is generally responsible for writing up the case and for counselling the youth.

If the offense is serious enough that the courts are involved, the juvenile offender may be either sentenced to probation, in which case the social worker will act as probation officer, or if the offence is very serious, will be sent to the Boys or Girls Home for a period of time so that he or she may hopefully change their attitude and behavior.

Q. Can you tell me a little about the other settings in which a social worker might work in the Province?

A. Social workers also work in medical and psychiatric settings, counselling individuals about personal, emotional, and social problems. For example, if the father of the family is injured and hospitalized, and is unable to return to his former employment, a social worker may intervene by supplying information and support for occupational retraining. A heart attack

victim who was formerly a construction worker may have to change jobs and work at a desk or in a factory where less physical activity is required.

The psychiatric social worker in conjunction with a variety of other mental health professionals may help individuals with problems that have arisen since, or because of their institutionalization. When the patient is ready to go back to his or her home the social worker may help the readjustment by providing advice, warmth, and support to the patient and the patient's family. Also social workers work in homes for the aged, homes for the physically disabled, the mentally retarded, the blind, the deaf, the YMCA and YWCA, with adult law offenders, alcoholics, and drug addicts. In short, social workers work in any setting in which help is needed.

Social workers also teach in community colleges and universities and work as advisors and administrators in government departments such as Health and Welfare Canada and Manpower and Immigration.

Q. What does it take to become a good social worker? It seems to me that it isn't easy having to deal with other people's problems all the time, and I imagine that a lot of what you would have to deal with isn't very pleasant. There must be frustrations too, when the people you are working with don't want to be helped.

A. Indeed, the types of problems and situations most

social workers are required to handle are very demanding and create a great deal of personal stress for the case worker as well as for the clients. That is why social workers need to be emotionally mature and stable. They will have to be the cool head that serves as the guiding influence for others.

While it is important that the social worker be interested and concerned about the issues they are working with, it is also important that they not become too involved. They must be able to do as much as they can for their clients, but also be able to recognize their limits. The person that isn't capable of maintaining this delicate balance will find either that they are not getting the job done, or that they are overwhelmed by the stress. Either way, they will find they don't enjoy their work.

On the positive side of things most social workers do enjoy their jobs. While not everything works out as well as one would like, there is a sense of accomplishment and reward in knowing that you are helping people. For the dedicated worker in the field, it makes all the hard times worth toiling through.

Q. So the Bachelor of Social Work Programme prepares you for the frustrations you will meet?

A. Yes. The training of a professional degree programme such as the Bachelor of Social Work Degree at Memorial, is important. Through the course work and the supervised practical experiences, students develop the skills necessary to handle

future work situations.

If you are a reasonably intelligent person who gets along well with people and who is interested in a career in helping others, you can develop the strength and skills you need.

Also, you will find when you begin working in the field that you can usually rely on the support and encouragement of your fellow workers to carry you through difficult situations.

Q. How exactly does one go about getting into the Bachelor of Social Work Programme?

A. Probably the most direct and most secure route into a social work related type of career is a Bachelor of Social Work Degree, such as the one available at Memorial. This is a five year program, the first year of which is spent in the University's Junior Division, doing general preparatory courses. (Students should check the calendar to find out which courses are required and which are satisfactory options.) Near the end of the first year, a student may apply to enter the social work program. If the student is admitted, then most of the courses for the remaining 4 years are set down. In addition to the professional social work courses, students will also be exposed to a variety of other subject areas, such as Psychology, Sociology and other Arts and Science subjects.

Memorial offers an alternative means of doing the Bachelor of Social Work Degree, for those who complete another type of university degree first. The Bachelor of Social Work

as a second degree programme normally takes about a year to complete and provides a concentrated exposure to the professional courses.

Admission to either of the programs is limited, based primarily on two factors: "marks" ... how well you have done with courses you have completed, and "personal suitability". When evaluating "personal suitability" the School of Social Work tries to look at students' personality, their interests, and their potential to be effective helpers. They assess "personal suitability" by looking at the range of experiences and involvements of the student and usually by a personal interview.

Those who wish to pursue a more in depth study of social work issues can go on to do a Master of Social Work Degree Programme. This more advanced training provides the additional skill development and qualifications necessary to take on more demanding roles in the social work field, including moving into senior administrative positions.

While a Bachelor of Social Work is the normal entry requirement into social work types of career opportunities, it sometimes is possible to get jobs in the social services field with a variety of other backgrounds. For instance, graduates with a Bachelor of Arts or Bachelor of Science who have completed majors in the social sciences such as Psychology, Sociology, Anthropology, and Education, have some success in finding jobs, especially with the Department of Social Services.

It is important to remember though, that because of their lack of specialized training their roles are probably limited, as are their chance for advancement.

Students should also keep in mind that the social workers training and work involvements overlap with a variety of other social service oriented career fields such as Professional Psychology, Guidance and Counselling, Criminology, and Rehabilitation Services.

Q. You mentioned earlier that students who do the Bachelor of Social Work Programme have supervised practical experience included in their programme. Could you tell me a little more about what these involve?

A. These practical experiences are called "field placements". There are two such placements. The first occurs in the fourth year of studies. This is a concurrent placement for two semesters. The student will spend two days per week for two semesters in a social service agency in or around St. John's. The remaining three days will be spent attending classes at the University. In the fifth and final year the first semester is spent in a block placement — full-time, for the whole four months. Students have gone all over the Province working with professional social workers participating actively in the work of their agency. The types of work environments where students have had placements have included: branch offices of

the Department of Social Services, the Waterford Hospital, the General Hospital, cottage hospitals, homes for the aged, the Department of Justice, the Alcohol and Drug Foundation, the Penetentiary, Canadian National Institute for the Blind, the Women's Centre, Planned Parenthood, the Salvation Army, and many, many others.

Q. What is the employment outlook like for social workers?

A. Results from a survey of recent graduates of Memorial indicate that all of those with a Social Work Degree who responded were able to find work. In face, everybody had found employment within three months of graduating. The indications are that social work graduates will continue to have no difficulty finding employment. The challenge for those graduating will be to compete successfully for the better opportunities.

It is important to keep in mind that the social work programme covers a wide range of course work that will allow students to adapt and fit into a wide range of work settings. In making the decision about whether to pursue a social work career, a person should explore the various options as have been outlined earlier in this programme. The more you know about these, the easier it will be to decide whether it is the right field for you or not, or to decide what area you would like to work in.

Ask your counsellor for more information. If possible arrange to visit the different work settings and meet the people involved.

Social work provides a great challenge for those who are ready to roll up their sleeves and work for social reform and the betterment of social problems.

APPENDIX I

INSTRUCTION FOR USERS

These materials have been designed for use on Bell and Howell Ringmaster Sound/Slide Projectors: Model 796.

Directions: Place slide carousel on top of machine. Line-up slide 0 with matching slot. Turn machine on. Advance to focus slide. Push in cassette tape. Each programme will run between 10-20 minutes. When programme is finished, rewind tape by pushing in rewind button; tape will self-eject. To release slides, push select button firmly down at top right-rear of machine, turn carousel back to 0, slide carousel will release at this point. Turn machine off.