

INSTRUCTOR COMPETENCIES REQUIRED
FOR EFFECTIVE FIELDWORK SUPERVISION
OF OCCUPATIONAL THERAPY AND
PHYSICAL THERAPY STUDENTS

BY

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ABSTRACT

The absence of clearly defined competencies to guide the development of educational programs for occupational therapy and physical therapy fieldwork instructors provided the impetus for this research. A primary objective of the study was to identify the competency categories and the competencies which occupational therapy and physical therapy fieldwork instructors, and occupational therapy and physical therapy students perceived to be important in determining the effectiveness of a student's fieldwork experience.

A review of the literature in occupational therapy, physical therapy, and related health professions identified a pool of fieldwork instructor competencies from which 105 competencies were selected for the study questionnaire. The questionnaire was administered to 34 occupational therapy and 37 physical therapy students from the University of British Columbia, and to 59 occupational therapy and 76 physical therapy fieldwork instructors in British Columbia. A response rate of 87% was obtained.

Respondents' ratings of importance of the competency categories and of the most important competencies were similar to previous research findings. Communication and supervisory behaviours were rated as most important in contributing to the effectiveness of a student's fieldwork experience. The majority

of the competencies which were ranked as most important belonged to these two categories. Consistent with previous research, the professional competence category and the competencies which were assigned to it were deemed least important in contributing to the effectiveness of a student's fieldwork experience.

Group differences in ratings of importance were tested using a factorial design. The two-way and three-way analyses of variance, a multivariate analysis of variance and subsequent multiple comparison tests revealed only one significant main effect. Physical therapy students' ratings of importance differed significantly from the occupational therapy and physical therapy fieldwork instructors ($p < .05$). While this significant difference was identified from the analysis, examination of the mean ratings of the competencies showed a consistent pattern of low, moderate or high ratings among all of the groups.

Participants in the study confirmed that the competencies included in the questionnaire were important in contributing to the effectiveness of a student's fieldwork experience. However, the literature suggests that the most important outcome will be the use of the competencies to guide the development of standardized educational programs for occupational therapy and physical therapy fieldwork instructors.

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CHAPTER 1

Introduction

Occupational therapy (O.T.) and physical therapy (P.T.) students registered in educational programs which have been approved by the World Federation of Occupational Therapists and the World Federation of Physical Therapists respectively, are required to complete a minimum of 1000 hours of fieldwork experience prior to graduation. An individual employed by the educational institution typically administers the fieldwork program and liaises with fieldwork instructors or supervising therapists in affiliated clinical agencies. The therapists are normally assigned to the fieldwork instructor role in addition to regular clinical duties. They also assume the responsibility for designing, implementing and evaluating the fieldwork experiences.

Many educators consider that knowledge of educational processes, and skills in clinical teaching, communication, supervision and evaluation, are essential for fieldwork instructors (Emery, 1984; Irby, 1978; May, 1983; Moore & Perry, 1976; Ramsden & Dervitz, 1972; Tompson, 1985, 1986). Studies of physical therapists (Moore and Perry) show that therapists lacked many of these skills. Recent research by May (1983) and Emery (1984) suggests that little has changed in the last decade.

Information collected by Christie, Joyce, and Moeller (1985b); Ryan (1981) and Tompson (1985, 1986) indicate that similar weaknesses have been found among occupational therapists.

The Problem

Participation of fieldwork instructors in educational programs to prepare them for their role is considered to be essential (Barker, 1986; Christie, et al., 1985b; Greenburg, Goldberg, & Jewett, 1984; Jason, 1974; Sox, Morgan, Neufeld, Sheldon, & Tonesk, 1984; Tompson, 1986). However, the nature and extent of the programs available for O.T's and P.T's suggests that there has been only minimal progress towards this goal. Emery (1984), Peat (1985), and Tompson (1985) are consistent in their use of the term haphazard, to describe the co-ordination, content and availability of the programs designed to meet the needs of O.T. and P.T. fieldwork instructors. Sixty-six percent of physical therapists surveyed by May (1983) used trial and error to develop competence in education. Her study supports the contention of Christie et al. (1985b), Emery (1984) and Peat (1985) that education of fieldwork instructors consists largely of on-the-job training.

Of the 25 physical therapy educational programs in the United States which responded to Moore and Perry's (1976) questionnaire, 16 offered meetings of 8 hours or longer duration,

at least once a year. Principles of teaching and learning, communication strategies and student evaluation procedures were included by only five educational programs. The primary purpose of the majority of the meetings was to exchange information about curriculum and other academic changes, and discuss problems of mutual concern. In a more recent survey of eight Canadian O.T. educational programs, Tompson (1985) reported that four offered formal workshops for fieldwork instructors on a regular basis. The remaining programs used a variety of methods such as providing inservice sessions on request, or used the Director of O.T. in the affiliating agencies and students to orient fieldwork instructors. Although Tompson (1985) makes no reference to program content, an analysis of her recommendations for the future suggest that there is little similarity between the workshops and inservice sessions which are currently available.

Although the education of fieldwork instructors remains a "hit-and-miss affair", researchers agree that the solution lies in the development of standardized educational programs for instructors (Christie et al., 1985b; Emery, 1984; Peat, 1985; Tompson, 1985, 1986). In order to implement standardized educational programs the competencies demanded of fieldwork instructors in O.T. and P.T. in all settings, must be identified and clearly defined (Barker, 1986; Peat, 1985). Further, if the competencies can be graded according to their degree of perceived

importance to a student's fieldwork experience, the task of developing standardized formats for the education of fieldwork instructors will be simplified.

Purpose of the Study

The objectives of this study are two-fold: (a) to derive a list of fieldwork instructor competencies from the literature in the health professions; and (b) to determine which categories of the competencies, and which competencies are perceived by O.T. and P.T. fieldwork instructors and O.T. and P.T. students, to be important in contributing to the effectiveness of a student's fieldwork experience. The specific questions to be asked are:

1. What are the categories of fieldwork instructor competencies and how important is each in determining the effectiveness of a student's fieldwork experience?
 - 1.1 What categories of competencies (for example, communication behaviours) can be identified by analysing the interrelationships between the ratings of importance of each competency?
 - 1.2 To what extent do the categories identified empirically in 1.1 relate to the pre-determined categories of competence identified through a literature review?

1.3 Which of the categories are rated as most important in determining the effectiveness of a student's fieldwork experience?

The literature on effective fieldwork instruction suggests that some factors (categories of interrelated competencies) are considered by respondents to be more important than others (Brown, 1981; Irby & Rakestraw, 1981; Moore & Perry, 1976; Romberg, 1984; Shellenberger & Mahan, 1982; Stritter, Hain & Grimes, 1975). Factor analysis will assist in identifying those competencies which are associated with the underlying dimensions of effective fieldwork instruction in O.T. and P.T. (Irby & Rakestraw, 1981; Romberg, 1984). If pre-determined competency categories are validated in this study, the assignment of the competencies to categories will also be verified. The matching of competencies to categories will have direct use for program planners. It will guide the assessment of the educational needs of fieldwork instructors relative to the underlying dimensions of effective instruction, and will be useful in planning educational programs for fieldwork instructors.

2. Which of the selected competencies do O.T. and P.T. fieldwork instructors, and O.T. and P.T. students perceive to be most important in determining the effectiveness of students' fieldwork experiences?

Although a number of studies of effective clinical teaching have been conducted in the health professions, none have clearly delineated the specific behaviours or competencies required for effective fieldwork instruction in occupational therapy and physical therapy. Studies completed are either too broad to provide specific direction for educational planners (Christie et al., 1985b) or have identified specific behaviours perceived to be important from only one relevant population (Emery, 1984). One of the tasks of this study then, is to ascertain which of the competencies derived from the literature are perceived to contribute most to effective fieldwork instruction in O.T. and P.T.

Researchers have suggested that many of the fieldwork instructor competencies associated with effective fieldwork experiences can be improved through educational programs (Cassie, 1977; Greenburg et al. 1984; Petzel, Harris & Masler, 1982). In British Columbia, such programs frequently take second place to those which focus on upgrading the clinical skills of O.T's and P.T's because they are given a lower priority by employers. When employment contracts typically allot only 4 days per year to each therapist for educational leave, programs for fieldwork instructors must be limited to 1-2 day workshops. If such workshops are to focus

on the fieldwork instructor competencies which are most important, these must first be identified.

3. To what extent do the ratings of importance of the selected competencies differ among the groups?

3.1 What are the differences between the ratings of importance of each of four groups (O.T. and P.T. fieldwork instructors and O.T. and P.T. students)?

3.2 What are the differences between ratings of importance of fieldwork instructors (O.T. and P.T.) and students (O.T. and P.T.)?

3.3 What are the differences between the ratings of importance of each profession (O.T. fieldwork instructors and students, and P.T. fieldwork instructors and students)?

The findings related to this question will provide further guidance to planners of educational programs for fieldwork instructors. Although there appears to be some evidence of congruence in the beliefs about effective clinical teaching behaviours among various health professions (Christie et al., 1985b), O.T. and P.T. are separate professions with different theoretical bases and different undergraduate curricula. It would be reasonable to expect that differences may exist in O.T. and P.T. assessments of the degree of importance of the selected competencies.

Although fieldwork instructors and students are both participants in the fieldwork experience, it is conceivable that their perspectives on the importance of the fieldwork instructor competencies may differ. Ratings by both groups, in each of O.T. and P.T., should provide a balanced assessment of the importance of each competency.

4. To what extent are personal variables related to the O.T. and P.T. fieldwork instructors' and O.T. and P.T. students' ratings of importance of the competencies?

It is possible that respondent characteristics may account for their ratings of the competencies. Christie et al. (1985b) showed that experienced fieldwork instructors view the fieldwork instructor role differently from novice instructors. In another study, O'Shea and Parsons (1979) recommended that other variables such as age, sex, clinical experience of instructors and educational preparation (both level of education and attendance at fieldwork instructor preparation workshops) should be considered in future research. The areas of clinical practice of the fieldwork instructors, for example, psychiatry and physical dysfunction, and the type of setting in which they practice may also be related to differences in the respondents' ratings.

Definition of terms

1. Competency: a description of knowledge, a skill or an attitude expected to be demonstrated by an effective fieldwork instructor. Competencies can be divided into traits and behaviours. Traits represent personal characteristics whereas behaviours refer to tasks, activities or ways of acting. This study will only include traits and behaviours which have been identified in the literature as having a relationship to the effectiveness of a students' fieldwork experience.
2. Occupational Therapist: an individual who has met the requirements for registration as an O.T., in his/her country; and has graduated from an educational program which is accredited by the World Federation of Occupational Therapists.
3. Physical Therapist: an individual who has met the requirements for registration as a P.T. in his/her country of residence; and who has graduated from an educational program which is approved by the World Federation of Physical Therapists.
4. Fieldwork instructors: a male or female O.T. or P.T. who has instructed at least one student on a full-time fieldwork experience of 4 weeks or longer duration, since May 1986; in

an agency which is affiliated with the School of Rehabilitation Medicine at the University of British Columbia.

5. O.T. and P.T. students: all males or females who are registered as third or fourth year students in the B.Sc.(O.T.) or B.Sc.(P.T.) programs at the University of British Columbia in January, 1987.
6. Fieldwork experience: the period of time O.T. and P.T. students spend in an accredited clinical agency, learning and applying their theoretical knowledge to client assessment and treatment.

Conceptual Framework

Whether an educational program is based on a mastery learning or competency-based approach, or more general principles of instructional design, the formulation of objectives for the program is a critical element in the initial phases of design (Guskey, 1985; Houle, 1978; Roberts, Cordova & Saxe, 1978). Guskey (1985) states that "objectives describe the skills and abilities students are to acquire as a result of our teaching" (p.18). This view that an objective is formulated from the program planner's perception of what "should be" is reinforced by Houle (1978) when he suggests that objectives include a belief

about "a desired perfection or excellence based on an ideal" (p.139).

The belief that what should be can be identified by defining the competencies required for a particular role is common among educators (e.g Gale & Pol, 1975; Hutchison, 1974; Jason, 1974; Knowles, 1980; Laxdal, 1982). Once specified, the competencies can form the basis for an assessment of the need for educational programs. That is, fieldwork instructors and others can determine the degree to which they display these behaviours, thus assessing their level of competence. The difference between the actual and desired level of competence of the fieldwork instructors can guide the selection of program objectives and content. Subsequently, instructional and evaluation plans for the program can be developed from the program objectives. This program development sequence is recognised in the literature (Boyle, 1981; Houle, 1972; Knowles, 1980).

If educational programs for fieldwork instructors are to be further developed in O.T. and P.T., it is essential to first determine the competencies required of fieldwork instructors.

Significance of the Study

This research will add information about the competencies required by O.T. and P.T. fieldwork instructors. Specification of fieldwork instructor competencies and their importance in

determining the effectiveness of a student's fieldwork experience has implications for the development of educational programs for fieldwork instructors.

Educational programs designed to prepare therapists for their fieldwork instructor role should focus on their needs. However, specification of the requirements for a role (that is, the competencies) must be available to provide the basis for the needs assessment.

Identification of relevant competencies and their level of importance in fieldwork instruction, should reveal which competencies are essential to the role. If this occurs, educational planners could use the information to determine content priorities in developing educational programs to prepare fieldwork instructors for their role. Uniform inclusion of the essential content in programs in Canada and elsewhere, would in effect, standardize the content of programs for O.T. and P.T. fieldwork instructors. The wide variation in the content of the workshops and inservice sessions offered to date (Christie et al., 1985b; Emery, 1984; Peat, 1985; Thompson, 1985) diminishes the credibility of the courses outside the province or state in which they are offered. Continuing education courses designed to update clinical skills usually offer content which is standardized and thus more transferable to other provinces or states. Given the plethora of available courses, it is

reasonable to assume that if content in courses for fieldwork instructors is applicable "worldwide", participation in such courses could be enhanced. If the educational preparation of fieldwork instructors is related to the quality of fieldwork experiences, as the literature suggests (Greenberg et al., 1984; Sox et al., 1984; Lawson & Harvill, 1980; Tompson, 1986), then this could be considered a positive development from this study.

There are several other ways in which fieldwork instructor competencies will be useful for the professions. Identification of the competencies and their relative importance will assist Directors of Occupational Therapy and Physical Therapy Departments in selecting therapists for fieldwork instruction. The list of competencies required for effective fieldwork instruction will provide a useful checklist for therapists to identify the activities which encompass the role and guide their activities during a fieldwork experience. Use of the competencies to develop a self-evaluation tool for fieldwork instructors, and develop a reliable and valid form for the students' evaluation of fieldwork experiences are additional benefits from this research.

Research Design

A cross-sectional survey design was used to determine O.T. and P.T. fieldwork instructors' and O.T. and P.T. students'

perceptions of the importance of each fieldwork instructor competency selected from the literature. A questionnaire was used to collect data from the subjects.

Subjects

Fieldwork instructors

Subjects included all male and female O.T.'s or P.T.'s who had instructed at least one student on full-time fieldwork experiences of 4 weeks or longer duration since May 1986, in agencies affiliated with the School of Rehabilitation Medicine at the University of British Columbia. Therapists were identified from the students' fieldwork performance reports filed in the School of Rehabilitation Medicine. Since May 1986, the 71 third and fourth year students who comprised the student population in the study had completed a total of 355 fieldwork experiences. It was anticipated that some of the fieldwork instructors could have supervised more than one of these students during this period. However, a population of at least 50-60 therapists was expected for each profession.

The demographic characteristics of therapists considered were age, sex, level of education, number of students supervised since graduation, type of practice setting, the type of client problems encountered in practice, years of clinical experience, and number of fieldwork instructor workshops attended.

Students

All third and fourth year students registered in the B.Sc.(O.T.) and B.Sc.(P.T.) programs at The University of British Columbia in January, 1987 were included. Their names were obtained from the School of Rehabilitation Medicine. The population included 34 occupational therapy students and 37 physical therapy students. Age and sex of the respondents and student year were the only demographic data requested. The third year and fourth year O.T. students had completed 8 and 26 weeks of full-time fieldwork experience respectively; the third year and fourth year P.T. students had completed 10 and 26 weeks of full-time fieldwork experience.

Data collection

A profile of the competencies hypothesized to be required of O.T. and P.T. fieldwork instructors, prepared from past research in clinical teaching in the health professions, provided the framework for the questionnaire. If the items had been labelled as competencies, this may have suggested to the respondents that each was already required for O.T. and P.T. fieldwork instructors. Since this had not been established, and was one of the purposes of this study, the proposed competencies were presented to subjects in the form of traits and behaviours. The literature on scaling guided the selection of the rating scale(s)

considered to be most effective in meeting the objectives of this study.

A pre-test of the questionnaire was conducted prior to the study. Subjects included three occupational therapists, three physical therapists, three occupational therapy new graduates (1986) and three physical therapy new graduates (1986). The therapists selected had supervised students in the past, but did not meet the criteria for inclusion in the study. All new graduates had completed their studies in the O.T. or P.T. programs at the School of Rehabilitation Medicine, University of British Columbia. Neither the subjects nor the data from the pre-test were used in the study.

The final questionnaire was mailed or distributed by hand to all subjects concurrently. A letter of introduction outlined the purpose of the study and completion of the questionnaire was voluntary. A decision not to participate did not affect the subject's standing in, or relationship with the School of Rehabilitation Medicine. The return of a completed questionnaire was considered as consent to participate. A stamped, self-addressed envelope for return of the questionnaire was included. Approximately 2 weeks after the first mailing, a thank-you letter which asked each non-respondent to complete and return the questionnaire was mailed. The confidentiality of respondents was assured at all times.

Data analysis

Data was analysed on a group basis using descriptive statistics together with the appropriate inferential statistics to study between group differences.

Limitations of the Study

1. The response rate to the questionnaire determined the availability of data for analysis, and affected the generalizability of the results.
2. The generalizability of the findings was limited to occupational therapy and physical therapy fieldwork instructors, in British Columbia.

CHAPTER 2

Review of the Literature

A major assumption underlying this research is that the delineation of the competencies required of fieldwork instructors in occupational therapy and physical therapy will provide a necessary foundation for the development of educational programs to prepare fieldwork instructors for their role. In order to provide a rationale for this claim, approaches to program development and definitions of competence will be reviewed and the relationship between competency definition and program development will be demonstrated. Means for defining competencies will be derived from the literature to give direction and support to the chosen methodology. The contribution of past occupational therapy and physical therapy research to the definition of fieldwork instructor competencies will be compared to research in related health professions to provide a foundation for the study.

Program Development

The process of program development has been viewed as a mechanism through which theory and research related to adult development and learning, management, instructional design and evaluation, and marketing can be applied (Sork, 1981). Numerous

models for program development have been proposed (Sork & Buskey, 1981a, 1981b), and although descriptors differ, the elements are very similar (e.g. Boyle, 1981; Bergevin, Morris, & Smith, 1963; Brown & Uhl, 1970; Charters & Blakely, 1974; Chernoff, Lindsay, & Kris-Etherton, 1983; Houle, 1972; Knowles, 1980; Perry, 1978; Roberts, Cordova, & Saxe, 1978; Tyler, 1949). The model developed by Charters and Blakely (1974) has been selected for illustration in Figure 1 because of its relationship to continuing education in the health professions. It represents a systematic planning effort in which each step is dependent on the information gathered from the steps that precede it. The notion of the interdependence of the steps in program development is captured by Houle (1972) when he states that the steps "are to be understood as a complex of interacting elements" (p. 46). Although there are nine steps in Charter's and Blakely's model (1974), there appears to be agreement among planners that Step One, Determine Needs, is the most crucial to effective program development (Boyle, 1981; Hutchison, 1974; Knowles, 1980; Knox, 1974).

The Concept of Need

The literature abounds with articles which propose and debate definitions of need (e.g. Boyle, 1981; Bergevin et al. 1963; Bullard, 1983; Koonz, 1978; Monette, 1977). The

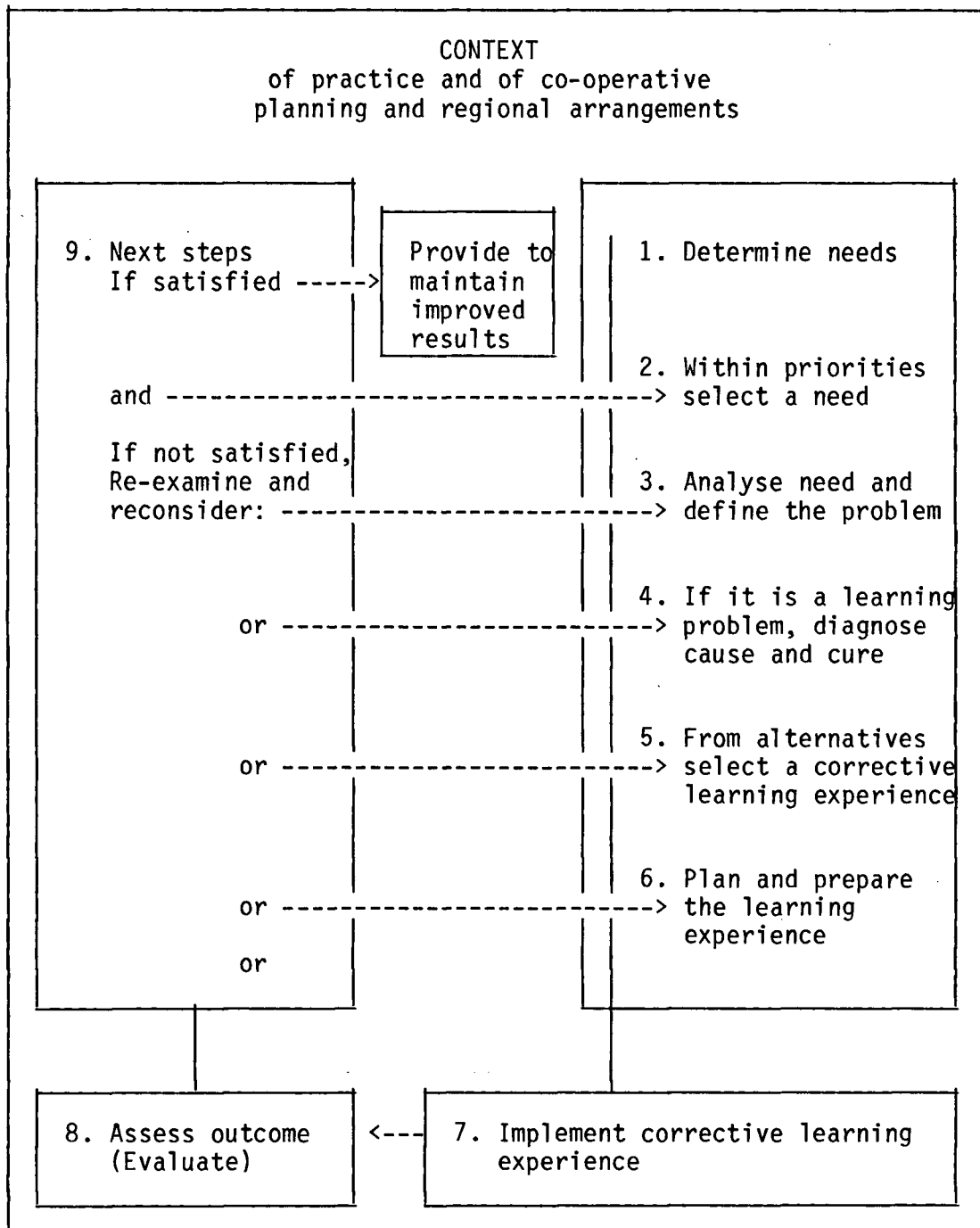


Figure 1. A model of the program development process in continuing education.

definitions which appear consistently in the literature on education and are deemed relevant to adult and continuing education, describe many different types and sources of needs. Terms such as real needs and educational needs describe types of needs, whereas felt needs, normative needs, comparative needs, motivational and prescriptive needs describe sources of needs.

A real need is one which indicates an objectively determined deficiency or gap in the knowledge, attitudes or skills of an individual (Bullard, 1983; Monette, 1977). Real needs are based on validated data (Bullard, 1983). Labelling a need as educational implies that the deficiency identified can be reduced or eliminated through a learning experience which provides the required knowledge, skills or attitudes (Bergevin et al., 1963; Boyle, 1981; Monette, 1977).

A felt need in contrast, is thought to represent an individual's wants or desires for learning (Boyle, 1981; Bergevin et al., 1963). Monette (1977) states that "a felt need alone is an inadequate measure of real need in that it is limited by the perceptions of individuals, that is, their awareness of the services available, their own self-awareness, and their willingness to depend on services" (p.118). Dickinson and Verner (1974) state that when individuals are asked they are rarely able to identify their own needs. Beatty (1976) and Sork (1981) use the term motivational needs to label felt needs.

When a condition of deficiency exists relative to a socially accepted standard or norm the deficiency is thought to describe a prescriptive need (Beatty, 1976). An individual or group falling short of the desirable standard is considered to have a normative need (Boyle, 1981; Monette, 1977). If the characteristics of two groups, one which is receiving a service and one which is not, are compared and found to be the same, the latter group is said to have a comparative need (Monette, 1977). This need, if determined from outside the group can also be classified as a prescriptive need.

Although these definitions of need vary, the term always implies, more or less directly, a standard or a more desirable condition against which need is assessed (Monette, 1977). Boyle's (1981) generic definition that need "represents an imbalance, a lack of adjustment, or a gap between a present situation or state of being and a new or changed set of conditions assumed to be desirable" (p. 155) is typical of the summative definitions of need evident in the literature (Bullard, 1983; Chernoff et al., 1983; Fleisher, 1974; Hutchison, 1974; Knowles, 1980; Knox, 1974; Laxdal, 1982; Lessinger, 1974).

Determining needs in the context of program development

It is from the generic definition of need that the elements of Step One in the process of program development, Determine

Needs, are identified (Charters & Blakely, 1974). Three elements can be described as critical to this step: a) definition of the criteria and standards for performance; that is, the more desirable condition, b) measurement of the potential learners' actual level of performance, and c) comparison of the descriptions of actual and desired performance to ascertain the gaps or needs (Boyle, 1981; Davis & McCallon, 1974; Dickinson & Verner, 1974; Jason, 1974; Laxdal, 1982; Lessinger, 1974).

The first of these three elements, definition of the standards or criteria for effective performance, provides the framework for completing Step One and the remaining steps in the process of program development (Gale & Pol, 1975; Jason, 1974; Laxdal, 1982; Macpherson, Davey, & Simpson, 1985; Young, Weser, McBride, Page, & Littlefield, 1983). The standards provide information for Step Two, setting priorities (Boyle, 1981; Charters & Blakely, 1974). When standards are defined clearly, they guide decision-making about the nature of the problem or deficit (Step Three) and aid the diagnosis of its cause and cure (Step Four). Each standard can be analysed to identify the domain(s) of learning (cognitive, psychomotor or affective) to which it relates (Gronlund, 1978; Knox, 1974). This type of analysis provides direction for the selection of appropriate learning experiences (Step Five) and for planning the experiences (Step Six) (Boyle, 1981). One of the preliminary elements in

Step Six is formulating program objectives. Objectives reflect the desired outcomes of a program, and are a transformation of the standards for performance (Boyle, 1981; Knox, 1974). The objectives guide the instructor who is implementing the program (Step Seven) and become one of the standards against which program value can be judged. As such, they are critical to Step Eight, assessing the outcome of a program (Boyle, 1981; Charters & Blakely, 1974; Laxdal, 1982; Stake, 1983; Steinmetz, 1983; Stufflebeam, 1983; Tyler, 1983).

Competence

The definition of competence goes beyond the "art of being capable" as described in the Webster's Third New International Dictionary (1976). Gale and Pol (1975) have adopted a definition which is consistent with the meanings assigned to the term in education and the health professions. They state:

Competence, by definition, is tied to a position or role. The ligatures binding the two are abilities, knowledge, skills, judgement, attitudes and values required for successful functioning in the position or role. That is, possession of the critically required abilities, knowledge, judgement, skills, attitudes and values - and proficient use of the same - is what yields competence. (p. 20)

Three core ingredients are evident: the role, the behaviours associated with functioning in that role, and success. In the literature there is consistent use of the terms role and successful or proficient performance in relation to competence

(Lewis, 1974; Schalock, 1981). However, the labelling of the third ingredient, the behaviours or activities, is more commonly described as knowledge, skills, and attitudes (Boyle, 1981; Knowles, 1980; Knox, 1974; Laxdal, 1982). Knox (1974) indicates that "the term 'behaviour' refers to knowledge, skill, attitude and also the combination of all three in the form of performance" (p. 77).

Competence, like performance, represents a whole of interrelated parts (Gale & Pol, 1975; Rubin, 1981; Schalock, 1981). Schalock (1981) cautions that competence should "not be defined as the set of knowledges, skills, and attitudes that make up competence or, more accurately, that are needed for competent performance" (p. 154). He suggests that they should only be considered enablers or indicators of competence. Chickering & Claxton (1981) also acknowledge that competence is a macroconcept which is larger than any collection of behavioural statements believed to represent the knowledge, skills, and attitudes related to performance in a particular role. However, they recognize that to operationalize the term, the definition of competence must be reduced to manageable terms and broken into recognizable units.

To do this, the term competency [competencies (plural)] has been coined to label the parts or enablers of competence. Gale and Pol (1975) have indicated that use of these words is just as

illogical as calling intelligencies parts of intelligence. Despite their objections these words have been found to be useful (e.g. Bridle, 1981; Chickering & Claxton, 1981; Davis et al., 1979; McClure & Leigh, 1981; Moncur, 1985; Roberts et al., 1978), and now appear in contemporary dictionaries (Halsey, 1979; Woolf, 1979). Competencies are considered to be the significant behaviours (knowledge, skills, and attitudes) which are performed in a particular role and/or setting, to a specified standard (Davis et al., 1979; Roberts et al., 1978).

Competence and Program Development

It is apparent that the definitions of the terms used to define competencies in a health professions context, and the terms criteria and standards of performance in an educational context, are similar. The phrases effective performance, and knowledge, skills and attitudes, are central to both definitions. Indeed, in some definitions of need the terms competence or competencies are used as a substitute for desirable standards of performance or what should be (Gale & Pol, 1975; Hutchison, 1974; Jason, 1974; Knowles, 1980; Laxdal, 1982). Hutchison (1974) states that in the world of work the learning or educational needs can be stated as the difference between the present level of competency and desired competency. In discussing needs assessment in continuing medical education Laxdal (1982) defines

need simply as "a gap between current and optimal competence" (p. 828). This use of the terms competence and competency in relation to educational need appear more frequently in the references to the continuing education of professionals (Boyle, 1981; Young et al., 1983).

If the definition of competencies represents the first element of Step One in the process of program development (see Figure 1) as supported by Gale and Pol (1975), then competencies can be directly related to program development. Past use of definitions of competence or competencies to guide the development of educational programs at graduate, post graduate and continuing education levels in the health professions, is evidence that this relationship exists (American Physical Therapy Association, 1981; Aston-McCrimmon, 1986; Bridle, 1981; Brintnell & Skakun, 1986; Caney, 1983; Davis, Anderson, & Jagger, 1979; Gill, 1987; Meleca, Schimpfhauser, Witteman & Sachs, 1983; MacPherson, Davey, & Simpson, 1985; Roberts et al., 1978; Young et al., 1983). The use of competency definitions in providing the basis for a self-assessment to assist in determining educational needs, is an additional outcome of relevance to this study (Dunn et al., 1985; Knox, 1974; Laxdal, 1982; Shellenberger & Mahan, 1982). These uses provide the rationale for what Dunn, Hamilton, & Harden (1985) have described as the symbiotic link between competence and continuing education.

The Process of Defining Competencies

The framework

The three major ingredients in the definition of competence provide a framework for defining competence. Issues to be considered in the process will be examined in relation to the three ingredients of competence: the role or position, the behaviours which represent the knowledge, skills and attitudes related to the role, and the delineation of the standards required for effective performance of the behaviours (Davis et al., 1979; Gale & Pol, 1975; Schalock, 1981).

Role

There are several preliminary decisions to be made at the time the role or position for review is selected (Schalock, 1981). Within the health professions, the profession or professions must be selected, the role -- clinician, administrator, educator, researcher -- must be chosen, and the setting must be identified. For example, occupational therapists and physical therapists may instruct students in a university or in a clinical setting. The behaviours related to being an effective instructor in these two different settings will vary considerably.

Specifying the behaviours

Identification of the behaviours to be performed relative to a particular role is a critical step in competency definition. The behaviours to be performed define the parameters of a role or position, and as indicators of competence, become the competencies to be demonstrated (Schalock, 1981).

Components of the task. Due to the difficult nature of this task, it can be divided into two steps: 1) identifying categories of behaviours (or areas of competence), and 2) specifying the essential behaviours (or elements of competence) within each category (Gale & Pol, 1975). This process appears to be a common practice within the health professions (e.g. American Physical Therapy Association, 1981; American Speech-Language-Hearing Association, 1982; Aston-McCrimmon, 1986; Bridle, 1981; Emery, 1984; Hercules, Kneedler, & Roth, 1986; MacPherson et al., 1985; Meleca, Schimpfhauser, Witteman, & Sachs, 1981; Moncur, 1985; Romberg, 1984; Shellenberger & Mahan, 1982). Categories or areas of competence serve as organizers for the task of competency definition by identifying major components of a role or job, whereas the elements or behaviours constitute the competencies for the role. A sample of competencies defined for entry-level pharmacists which was reported by McClure and Leigh

(1981) included eight categories (e.g. maintain drug information) for which 34 competencies were formulated.

Limiting the scope of the task. The number of competencies identified for a particular role can be infinite (Gale & Pol, 1975). Pottinger (1975) emphasizes that competencies cannot be meaningfully defined by seemingly endless lists of behaviors, which ultimately fall short of real world requirements for effective performance. Similarly, Gale and Pol (1975) warn that all elements of competence will never be identified and will not need to be, and others will only be vaguely defineable. Some elements will appear to be extremely simple, even mundane, while others are so complex they are considered to be impractical for use. The criteria of importance and meaningfulness are commonly used to delimit the task (Chernoff et al., 1983; Emery, 1984; Fleisher, 1974; Gale & Pol, 1975; Schalock, 1981). Competency definitions should be readily recognizable as important, those who are to use them should perceive them to be meaningful and useful, and they should not be so numerous that they are overwhelming. Ideally, the behaviours considered to be important to a role will be common to many settings (Schalock, 1981).

Standards

Once the important and meaningful behaviours have been identified, standards for successful performance must be

formulated. Standards may be incorporated into the competency definitions (MacPherson et al., 1985; Young et al., 1983) or listed separately (e.g. Bridle, 1981; Davis et al., 1979).

General versus specific. The standards may be stated in general or specific terms. McAshan (1979) suggests that the level of specificity chosen should be the most functional within the context of the content and in the setting in which the competencies will be used. However, he indicates that there is an inverse relationship between the level of abstraction at which a competency is stated and the validity of the measurement used to evaluate the degree to which it is demonstrated. Clearly, broad or general competencies are amenable to general evaluation, whereas specific competencies are amenable to specific evaluation. Thus, the uses intended for the competencies will dictate the amount of specificity required.

Determining the level of performance. When decisions about the need for general or specific descriptions of standards have been made, the level of performance required must be determined (Gale & Pol, 1975). Pottinger (1975) indicates that this is one of the most difficult and troublesome tasks of competency definition. Regretably, the literature provides little guidance (Schalock, 1981). Much of the difficulty of the task lies in deciding how high the standards for performance should be, and

how the chosen level of performance should be expressed in the competency definition.

Selection of a level of performance which reflects what an individual should know or be able to do, or can realistically achieve is a common recommendation (Fleisher, 1974; Health and Welfare Canada, and Canadian Association of Occupational Therapists' Task Force, 1986; Roberts et al., 1978; Schalock, 1981; Young et al., 1983). Often, the level of performance represents the minimally acceptable level for success (Schalock, 1981). Opponents of this approach argue that standards may be set too low to challenge excellence (Chickering & Claxton, 1981). Regardless of the approach used, the terms minimally acceptable levels or excellence, must be defined. Unquestionably, there will always be tension between required minimums and desirable maximums in the process of standard setting (Spady, 1977). The competence of an individual may be determined by the degree to which an overall standard of performance is achieved (e.g. reaching the standards set for 75% of the competencies) or by successful performance in all of the competencies. The overall standard method may be more desirable because it has the capacity to challenge individuals to reach the standard or to attain a higher standard of performance. Given that competence has been described as a whole of interrelated parts (Gale & Pol, 1975) such an approach appears warranted. Schalock (1981) stresses

that establishing standards for each competency as well as for performance in a job or role as a whole is critical in the standard setting process.

The next step in the process of defining competencies is to select the most appropriate methods to accomplish the task.

Methods

Although program development models emphasize the importance of defining the more desirable future level of performance or competencies, the literature provides only limited guidance on how this should be accomplished. The methods thought to be most appropriate for gathering information which will contribute to competency definition fall largely into three groups: a) past research, b) those which document expert opinion and c) those which identify the opinions of the individuals who function in the role under review (Boyle, 1981; Bridle, 1981; Davis et al., 1979; Young et al., 1983). Group c) will be hereafter referred to as the potential learners. Experts may include individuals who are recognized for their competence and experience in the role, individuals who are knowledgeable about the role due to their close association with those who function in the role, consumers of the service, and professional organisations, institutions and agencies.

Past Research

An analysis of past research is a necessary and desirable exercise. It may yield complete definitions of competencies related to the investigator's area of interest, may identify additional sources of information and/or may offer recommendations to guide competency definition. Sources include published research, and published and unpublished reports from government agencies, institutions and organisations. Findings may be based on opinions of experts and/or potential learners.

Opinions of experts

Four methods for involving experts in the process of competency definition are job analysis (Boyle, 1981; Dunn et al., 1985; Hutchison, 1974; Knowles, 1980; Lewis, 1974; Schalock, 1981), group decision-making (Boyle, 1981; Davis et al., 1979; Knowles, 1980; Knox, 1974), interviews (Dunn et al., 1985), and the Delphi technique (Dunn et al., 1985; Farrell & Scherer, 1983; MacPherson et al., 1985).

Job analysis. Job analysis refers to the process of documenting through observation, interview and research, the significant behaviours which comprise performance in a given role, together with the responsibilities required for successful role performance (Lewis, 1974). Lewis (1974) divides job

analysis into two broad categories. The first category isolates the whole tasks of a job. In the second category each (whole) task is dissected to reveal its components; that is, the knowledge, skills and attitudes necessary to perform the task successfully. These processes are comparable to the steps identifying areas and elements of competence which were discussed in relation to competency definition. Job descriptions, job specifications, task lists or inventories, time and motion studies, work diaries or journals, behavioural event interviews, critical incident studies and work sampling are among the many techniques associated with this process (Boyle, 1981; Dunn et al., 1985; Hutchison, 1974; Knowles, 1980; Lewis, 1974). While job analysis can yield specific and precise information about role requirements it demands excellent observation and interviewing skills, accurate documentation, and is extremely time consuming (Lewis, 1974). The findings do not complete the process of competency definition. The detailed descriptions of performance in a role represent a bank from which the most important behaviours must be selected and the standards for performance of each must be established. Due to the funds, skills and time required job analysis can only be justified when little or no research data is available.

Group decision-making. When past research is lacking or limited, and a job analysis is not considered to be viable

proposition, a group of experts may be convened to formulate an initial list of competencies (Boyle, 1981; Davis et al., 1979; Dunn et al., 1985; Gale & Pol, 1975; Knowles, 1980; Knox, 1974; Young et al., 1983). If information is available from past research and/or a job analysis, the group can organise the information into the desired format as a pre-requisite to confirmation by an expanded group of experts and potential learners. The size of the group and the procedures used to define competencies can vary with group membership and the extent of the task (Bridle, 1981; Davis et al., 1979; Young et al., 1983). Use of this method permits synthesis of different viewpoints, builds support for continuing education programs, and promotes understanding and agreement (Boyle, 1981; Knowles, 1980). Pottinger (1979) states that while this is the most popular method of defining competence it is also the most dangerous technique. He believes that selective perception, beliefs and value systems can contaminate objectivity. For this reason it is preferable to use group decision making in conjunction with other techniques. Two further limitations of this method are that success is usually dependent on effective leadership, and that the time required to complete the task may be excessive.

Interviews. An interview can include open or closed questions which are directed to the subject in a face-to-face

situation (Borg & Gall, 1983; Brink & Wood, 1978; Issac & Michaels, 1971). The advantages of the interview compared to the written questionnaire as described by Brink and Wood (1978), Coldeway and Delisa (1983), Knowles (1980), and Issac and Michaels (1971) include:

1. It permits greater depth in questioning.
2. A high response rate is more assured although this is dependent on the skill of the interviewer.
3. The interviewee and the interviewer may seek clarification on questions or responses.
4. It is possible to establish and maintain rapport with the respondent or determine when rapport has not been established.

The primary disadvantages of the interview is that it can be costly, time consuming and inconvenient (Coldeway & Delisa, 1983). Accuracy of the results is highly dependent on the interviewer's skill, and the problem of subjectivity and personal bias is more likely to influence the results (Issac & Michaels, 1971). Coding and classification of the responses may be difficult due to the variability in format and in the subjects responses (Bullard, 1983; Sowell & Casey, 1982). Due to the time needed a serious weakness in using interviews for research is the usual necessity of using small samples (Borg & Gall, 1983). In the process of defining competencies, interviews may be used as a

job analysis method (Lewis, 1974), or to obtain information from consultants and consumers of the service in which the role is evident (Dunn et al., 1985; Knox, 1974). The interview is not identified in the literature as an major method for the definition of competencies.

The Delphi Technique. This technique engages respondents in an anonymous debate to reach a consensus on specific issues. Although mailed questionnaires are used, one group of respondents (usually recognized experts in a field) contribute information up to four times to develop, refine or revise goals, statements or competencies (Dunn et al., 1985). With each administration of the questionnaire feedback can be given, issues clarified and subsequent questionnaire content revised.

A major drawback in the use of the Delphi technique is that it requires a considerable amount of time to administer and places heavy demand on the respondents' time. Consequently, loss of subjects can be dramatic by the fourth stage. When this arises sampling bias may occur seriously questioning the value of the technique as a research tool (Borg & Gall, 1983). The modification of the technique from a four-phase to a two-phase process by Farrell and Scherer (1983) and MacPherson et al. (1985), and unspecified modification by Meleca et al. (1981, 1983), suggests that administration of the technique in its original form may not be necessary or desirable. Although the

variability of the responses does decrease between phase one and phase four, the mean responses appear to shift minimally (Borg & Gall, 1983). In the study by Farrell and Scherer (1983) only minimal change occurred between mailings and there was no change in negative group opinion. Use of the technique by Sweeney and Regan (1982) neither produced changes nor consensus. The Delphi technique may be justifiable when empirical data is lacking (Farrell & Scherer, 1983). However, where this is not the case, a single administration of a questionnaire may be equally effective (Borg & Gall, 1983).

Opinions of potential learners

While opinions of this group may also be obtained through interviews, or by participation in group decision making or a Delphi study, the most common way of receiving input from this group is through a questionnaire.

Questionnaires. Use of written questionnaires to gather information which can contribute to the identification, definition and validation of competencies is a common practice in health professions education (e.g. Aston-McCrimmon, 1986; Bridle, 1981; Brown, 1981; Irby & Rakestraw, 1981; Meleca et al., 1981, 1983; Moncur, 1985; Shellenberger & Mahan, 1982; Stritter et al., 1975; Stritter, Baker, & McGaghie, 1983). The questionnaire method has several advantages (Borg & Gall, 1983; Boyle, 1981;

Brink & Wood, 1978; Knowles, 1980):

1. It is possible to cover wide geographic areas and to question large numbers of people without significant expense.
2. Anonymity and privacy of subjects can be maintained.
3. The written questions can be presented in the same way all subjects and are not susceptible to the changes in tone or emphasis which can occur in verbal questioning.
4. Subjects have ample time to consider their responses.
5. Questions may be presented in open or closed form.
6. Systematic administration of the questionnaire aids tabulation and analysis of the data.
7. Opinions of experts and potential learners can be obtained at the same time.

While skill in questionnaire design is important in constructing a questionnaire there is always a possibility that respondents will interpret the questions differently (Brink & Wood, 1978; Schuman & Presser, 1981). Pre-testing the questionnaire minimizes this pitfall (Borg & Gall, 1983; Issac & Michaels, 1971). One of the major disadvantages of questionnaires is the problem of non-respondents (Coldeway & Delisa, 1983; Borg & Gall, 1983). Butts (1983) states that when response rates are less than 75%, the results must be seriously questioned. When this occurs the respondents may differ substantially from non-respondents thus biasing the sample.

Use of multiple methods

Program development experts agree that use of methods which involve experts as well as the potential learners is essential (Boyle, 1981; Fleisher, 1974; Hutchison, 1974; Knowles, 1980; Laxdal, 1982). In the context of determining needs, the views of experts represent prescriptive needs, whereas the views of the potential learners represent motivational needs (Beatty 1976; Sork, 1981). Involvement of both groups provides balance, sets the climate for participative program development, and increases the likelihood of program success (Boyle, 1981; Hutchison, 1974; Knox, 1974).

Fleisher (1974) stresses that the more the individuals whose future performances are to be measured by the competencies accept the validity of the standards and their application, the greater authority the standards will carry and the stronger their commitment to reach them will be. When these individuals have participated in the formulation of competencies they will have a greater stake in the success of continuing education programs which may be developed to assist them to meet and/or maintain the performance standards. Consequently, the likelihood that behavioural change will result, is enhanced (Hutchison, 1974).

The review of the literature shows that those responsible for competency definition recognize that completion of the task demands the use of more than one method. Typically, the process

begins with the use of past research, job analysis techniques and/or group decision-making, to formulate an initial list of competencies. Experts and potential learners then verify or validate the competencies through interviews, and through the use of a questionnaire or the Delphi technique.

Selection of methods for this study

The major determinants in selecting the method for this study were the research objectives, the effectiveness of the method in contributing to competency definitions in past research, the degree to which competencies have been defined for fieldwork instructors, and the extent to which involvement of both potential learners and experts was possible.

After consideration of all of these factors the questionnaire was selected as the best method for this study. It permits inclusion of a large number of subjects in each of the four groups (O.T. fieldwork instructors, P.T. fieldwork instructors, O.T. students and P.T. students) regardless of their geographic location in the province. Perspectives from potential learners (O.T. & P.T. fieldwork instructors) and two expert groups (O.T. and P.T. students as consumers) can be obtained as recommended in the literature. Use of the large sample sizes anticipated with the questionnaire method can provide credible units for statistical analysis (Hopkins & Glass, 1978; Issac &

Michael, 1971).

Stritter et al. (1983), in discussing research in clinical teaching suggested that future studies should build on previous work rather than "re-inventing the wheel". Given that a body of research has been developed in the area of clinical teaching it seemed wise to use that knowledge to formulate a questionnaire for this study. A number of researchers in the health professions have indeed done this, to research competencies in clinical teaching (Brown, 1981; Emery, 1984; Irby, 1978; Meleca et al., 1981, 1983; O'Shea & Parsons, 1979; Shellenberger & Mahan, 1982; Stritter et al., 1975, 1983). A once-administered questionnaire with an ordered categories scale was the most common type of questionnaire used. This pattern is also evident in other studies in which formulation of competencies was the research goal (Aston-McCrimmon, 1986; Bridle, 1981; Moncur, 1985).

Fieldwork Instructor Competencies:

State of the Art

If the development of a questionnaire is to be based on past research, the research findings related to both the categories or areas of competence and elements of competence (referred to as competencies) must be examined. The research findings in occupational therapy and physical therapy will be compared to

those in related health professions.

Categories of Competence

Occupational Therapy and Physical Therapy Studies

Research directed at identifying categories of competence or categories of behaviours, and their importance to the effectiveness of a student's fieldwork experience is extremely limited in occupational therapy and physical therapy. Christie et al. (1985a) found that there were three categories of behaviours most frequently identified as critical to a fieldwork experience by O.T. fieldwork instructors and O.T. students. They were in order of importance: a) supervision, b) communication and interpersonal relationships, and c) the attitudinal environment. Research conducted by Emery (1984), and Moore & Perry (1976) in physical therapy revealed similar findings. One purpose of Emery's study (1984) was to determine which of 43 fieldwork instructor behaviours were considered by students to be most important in contributing to an effective fieldwork experience. Communication behaviours were thought to be most important, followed by interpersonal skills, teaching behaviours and, of least importance, professional skills behaviours. An analysis of fieldwork instructor behaviours noted by Moore and Perry (1976) identified six categories of

performance: a) ability as a physical therapist, that is professional competence, b) supervision, c) instruction of students, d) student evaluation, e) interpersonal relationships/communication and f) personal characteristics. In a subsequent study, behaviours which fell into the categories of supervision, communication, and personal characteristics were most linked to effective fieldwork instructors.

Studies in Related Health Professions

Research in medicine, nursing and dentistry provide additional information about the categories of behaviours/competence which are most often associated with effective fieldwork instructors. A variety of methods were used to obtain the data. These studies examined student and instructor perceptions of instructor effectiveness, and the results of students' evaluations of their fieldwork instructors.

Nursing studies

Results of a nursing study by Brown (1981) showed that the categories of behaviours believed to be important differed between faculty and students. Both groups rated personal attributes to be least important (third). However, their rankings of the categories, professional competence and relationship with students, were reversed. Students ranked

relationship with students as most important, whereas professional competence was thought to be most important by the instructors. The behaviours classified as evaluative by O'Shea and Parsons (1979) were most frequently linked to instructor effectiveness by nursing instructors and students.

Instructive/assistive behaviours were ranked second, and personal characteristics third. Brown (1981), and O'Shea and Parsons (1979) both listed personal attributes or characteristics as least important. The categories which were ranked first and second are too different to permit comparison. In both studies no additional statistical analyses were conducted.

Meleca et al. (1981) conducted a multi-faceted study in nursing. Two phases of their project are relevant to this study. They first used trained observers to record the behaviours of fieldwork instructors, and compiled critical incident reports from students to supplement the information collected by the raters. Using the list of 72 nursing instructor behaviours, they developed a questionnaire. Instructors in nursing were then asked to note the frequency with which actual instructors and ideal instructors have or should demonstrate the behaviours listed. The parallel factor analyses and orthogonal rotations conducted on actual and ideal scales yielded no clear-cut solution. Most behaviours loaded highly on a one-factor solution. No patterns relative to the four categories of

behaviours, presentation and providing skills, attending skills, questioning skills and teaching styles/attitudes emerged. This may have been due to the apparent similarity of these categories.

Studies in medicine

In a study of 340 medical students and their instructors Irby (1978) found that the categories demonstrating the greatest difference between best and worst instructors were enthusiasm/stimulation and organisation/clarity. Group instructional skills and clinical supervision were ranked second, clinical competence and role modelling were ranked third, and the combination of role modelling and instructor knowledge was ranked fourth. Six of the seven categories were confirmed using a principal component solution to orthogonal factors, and these accounted for 49.7 percent of the variance. Modelling was subsumed with group instructional skill and was not found to be orthogonal.

Stritter et al. (1975) identified six categories or factors in their research on the contribution of student behaviours to student learning. In descending order of importance based on mean values, these were: a) provides a personal environment in which the student is an active participant, b) reflects a positive attitude toward teaching and students, c) concentrates

on the problem-solving process rather than on factual content alone, d) uses a student-centred instructional approach, e) displays a humanistic orientation, and f) emphasizes his personal research and the research of others. These six factors were obtained from a centroid factor analysis of the intercorrelation matrix followed by a maxplane rotation of factors having an eigenvalue greater than 1.0.

Irby and Rakestraw (1981) used Irby's earlier work (1978) as a foundation for the development of an instructor evaluation instrument. In the factor analysis which they used to determine whether hypothesized factors of instructor effectiveness corresponded with students' assumptions about clinical teaching, four factors emerged. They accounted for 86.7 percent of the variance. In order of importance they were: a) supervisory skills, b) knowledge and clarity, c) interpersonal relations, and d) demonstration of clinical skills.

Further evaluations of instructors by medical students yielded six factors following a principal component factor analysis and subsequent varimax rotation (Shellenberger & Mahan, 1982). The six factors accounted for 58 percent of the variance. Wording of the factors were similar to the categories described by Irby (1978) and Stritter et al. (1975). The relative importance of each factor was not discussed by the authors.

Meleca et al. (1983) conducted the only comprehensive investigation of the behaviours which constitute the role of a fieldwork instructor in medicine. The procedures used were indistinguishable from those used in the nursing study (Meleca et al., 1981). Seventy-six instructor behaviours were identified. There were no substantial differences in the findings for medicine and nursing, related to the categories of behaviours which were studied.

Due to the fact that the labelling of the categories is not identical and the research methods differ in these studies, comparison of the findings is difficult (Irby, 1978, Stritter et al., 1975). In the studies by Irby (1978), and Irby and Rakestraw (1981) clinical competence appears to be less important to instructor effectiveness than supervisory skills. Stritter et al. (1975) uses some categories which in other studies, stand alone as behaviours or competencies. For example, the factors b), c) and d) are listed as behaviours by Christie et al., (1985b), Hughes (1985), and Shellenberger and Mahan (1982).

Dentistry

Romberg (1984) used student evaluations of teaching to identify the behaviours most frequently related to instructor effectiveness in dentistry. A principal component factor analysis with a varimax rotation revealed four factors which

accounted for 92.1 percent of the variance. The four factors in descending order of importance were a) an instructor meeting teaching responsibilities, b) an instructor behaving in a manner conducive to clinical learning, c) an instructor being technically competent, and d) an instructor enjoying his/her job. The descriptions used by Romberg (1984) also make comparison with other research difficult. While the technical competence (Romberg, 1984), and the clinical competence (Irby, 1978) of an instructor may be compared, interpretation of "behaving in a manner conducive to clinical learning" is virtually impossible.

Analysis of findings

The review of research findings related to categories of competence (or behaviours) has shown that the labelling of categories is inconsistent. Categories were defined earlier in this Chapter as the major components of a role. Within each category a number of behaviours or competencies may be specified. Not all of the researchers reviewed have used this definition. The categories or factors identified by Romberg (1984), Shellenberger and Mahan (1982), and Stritter et al. (1975) are either too specific or are so poorly defined that the intended meaning is not clear. For this reason comparison of the findings is problematic. In spite of these difficulties a pattern is apparent in the research. The categories of supervisory and/or

communication and interpersonal relations behaviours appear to be ranked as highly important by Brown (1981), Christie et al. (1985a), Emery (1984), Irby and Rakestraw (1981), and Moore and Perry (1976). In contrast, personal characteristics and/or clinical competence appear to be less important in describing an effective fieldwork instructor (Brown, 1981; Emery, 1984; Irby & Rakestraw, 1981; Moore & Perry, 1976; O'Shea & Parsons, 1979; Romberg, 1984). The rankings of teaching or instructive behaviours vary from moderate to high importance. Further research is necessary to verify these trends.

Selection of categories for this study

The category labels and definitions identified by Moore and Perry (1976) have been adopted with slight modification for use in this study. They incorporate the categories in which research trends are evident, they are meaningful to occupational therapy and physical therapy fieldwork experiences, they are more discrete than many of the categories identified in the literature, and with the exception of personal characteristics or traits, they represent units of instruction which would be helpful in subsequent program development. The categories and their descriptions are as follows:

1. Professional competence incorporates all entry-level competencies which therapists must demonstrate to provide

up-to-date, and effective patient/client care. These include the activities therapists must carry out regardless of their fieldwork instructor role.

2. Teaching/instruction-related behaviours include those behaviours related to planning and implementing instruction, and making program/changes. Application of knowledge of educational theory and practices is required to perform these activities.
3. Supervisory behaviours are those activities related to directing the fieldwork experience and ensuring that the student's performance is effectively monitored. The type, amount and quality of feedback, and the availability of the instructor are samples of the behaviours included in this category.
4. Communication behaviours include non-verbal and verbal interactions between therapist and student, openness of communication, exchange of ideas, and listening skills.
5. Evaluation behaviours include those activities related to formative and summative evaluation; evaluating student performance, evaluating the fieldwork program, and applying educational theory and knowledge of evaluation to the evaluation process.

6. Personal characteristics/traits refers to the aspects of the fieldwork instructor's values or belief system which have an impact on the fieldwork experience. This category includes desirable personal qualities of the fieldwork instructor (e.g. flexibility and enthusiasm for teaching).

Competencies

In comparison to the information available on categories of competence, the literature provides a significant amount of information related to the definition of competencies for fieldwork instructors. A total of 32 reports in occupational therapy, physical therapy, nursing, medicine, speech pathology, dentistry and pharmacy are evident. They include descriptions of effective fieldwork instructors, effective fieldwork instructor behaviours which have been identified from research, and some fieldwork instructor competencies which are entry-level (new graduate) requirements for occupational therapists and physical therapists.

The competencies and the methods used to determine them are discussed under the following headings: (a) Competencies: Occupational therapy and physical therapy, and (b) Competencies: Related health professions. An analysis of these findings and their significance to this study completes the Chapter.

Competencies: Occupational therapy and physical therapy

Nine sources of information in O.T. and P.T. literature were identified. Of these, four related to O.T., and five to P.T. Research contributed to the definition or validation of the competencies in seven of the nine cases. The content of the remaining two articles was derived from the literature and the experience of the authors.

Occupational therapy. In 1981, Bridle conducted a survey of Canadian occupational therapists to ascertain their perceptions about the competencies required of entry-level therapists. Seventeen of the 177 competencies identified are relevant to the role of the fieldwork instructor. The categories teaching behaviours and supervisory behaviours are represented. One competency is an administrative function that is more likely to be within the domain of the Department Director than that of the fieldwork instructor.

Barker (1986) reviewed the literature to summarize desirable fieldwork instructor behaviours. The importance of negotiating a learning contract with the student, working with the student to facilitate goal achievement, and providing regular feedback are emphasized. A five-year evaluation of a regional fieldwork program in Australia produced two clusters of recommendations regarding fieldwork instructor behaviours (Mocellin, 1984). The

following five fieldwork instructor attributes were perceived to be most important by the 105 occupational therapy students who participated: gives feedback, is an effective role model and teacher, encourages students, and is open to discussion. Two preferred methods of receiving feedback were: being told when mistakes were made, and evaluating their own performance with the instructor acting as a monitor.

Christie et al. (1985b) used open-ended questionnaires to ask fieldwork instructors (n = 188) and students (n = 127) to define the respective roles of the student and instructor, to list the primary responsibilities of each and to identify the characteristics of the effective and ineffective instructor. The effective instructor was an active listener, was open, honest and flexible, provided feedback which was timely, constructive, consistent and growth-promoting; adapted his/her supervisory approach to meet the student's needs, was supportive and empathic, and was a competent clinician and educator.

Physical therapy. The entry-level competencies for physical therapists in the United States also includes some fieldwork instructor competencies (American Physical Therapy Association, 1981). Seventeen competencies are given, and each includes one to four sub-competencies or objectives. In a pattern similar to the O.T. entry-level competencies, three of the competencies would normally be carried out by the Director of

the Department. Of the remaining competencies, nine can be categorized as teaching behaviours and five as evaluation behaviours. Some aspects of communication and supervision are listed as sub-competencies.

Moore & Perry (1976) investigated the characteristics of effective fieldwork instructors, as one aspect of a substantial physical therapy study. The top three behaviours were: a) gives regular feedback to students, b) demonstrates a positive attitude toward teaching, and c) confers 1:1 with students. In a subsequent report Perry (1978) mentioned six fieldwork instructor teaching behaviours and two evaluation behaviours, as components of the curriculum design process in fieldwork education.

Emery (1984) listed 43 important fieldwork instructor behaviours which were assessed by 102 physical therapy students. The results were similar to the occupational therapy findings by Christie et al. (1985b). Communication behaviours such as active listening, communicating in a non-threatening manner, providing useful and positive feedback and openness were ranked highly. The behaviours of least importance were those in the category of professional competence. Physical therapists (n = 296) ranked the order of importance of the same 43 fieldwork instructor behaviours in a study by Biediger and Larson (1987). The top three behaviours were: a) relate academic knowledge to clinical practice, b) plan effective learning experiences and c) question

or coach in a way that facilitates student learning. Demonstrating leadership among peers, being perceived as a consistent extension of the academic program and clearly explaining the physiological basis of treatment were identified as the three least important behaviours. Students ranked communication behaviours as most important Emery (1984), whereas therapists believed that teaching behaviours were most important (Biediger & Larson, 1987). The differences in rankings may be due to different perceptions of importance, or may be a reflection of the different scales and procedures used in each study.

Competencies: Related Health Professions

Although there are a total of 23 reports from the professions of nursing, medicine, speech pathology, dentistry and pharmacy, no single source provides competency definitions which can be adopted en masse for occupational therapy and physical therapy. The majority of the reports (n = 16) focussed on the 10-30 behaviours which have been most frequently linked to effective fieldwork instructors in the profession being studied. Four reports addressed one specific behaviour or category of behaviours related to the fieldwork instructor role (Craig, 1981; Ende, 1983; Farquhar & Holdman, 1982; Hughes, 1985). Meleca et al. (1981, 1983) were the only authors to compile a list of all

of the important behaviours of fieldwork instructors in medicine and nursing.

Nursing. Of the nine reports in the nursing literature five include literature reviews and/or the authors' opinions of the most important fieldwork instructor behaviours (Griffith & Bakanauskas, 1983; Hughes, 1983; McCabe, 1985; Shamian & Inhaber, 1985; Wong & Wong, 1980). While the recommendations are similar to those which have emerged from the O.T. and P.T. literature, thirty additional competencies were listed. All of the six categories chosen for this study were represented by the competencies. Hughes (1983) described competencies which were categorized as supervisory behaviours. She was the only one of these authors to focus on one aspect of the fieldwork instructor role.

Two hundred and five students and 24 nursing faculty were asked to list fieldwork instructor behaviours which facilitated and interfered with learning in a study by O'Shea and Parsons (1979). The 28 facilitative behaviours identified were categorized by the authors as personal characteristics, evaluation, or instructive/assistive behaviours. Behaviours included in their evaluation category -- positive feedback, honest feedback, constructive criticism and clearly defined expectations -- were rated as most important by students and faculty. Personal characteristics (e.g. supportive) were seen to

be less important to learning. These findings contributed to the development of a questionnaire which Brown (1981) used to ask 82 nursing students and 42 faculty members to rank the importance of fieldwork instructor behaviours. The provision of useful feedback on performance, and fairness and objectivity in student evaluation were the two behaviours ranked as most important by both groups. The low ranking given to personal characteristics in the O'Shea and Parsons (1979) study, was duplicated by Brown (1981). Craig (1981) investigated the questioning skills of nursing instructors. Her findings supported the need for fieldwork instructors to ask questions in a manner that fosters the development of problem-solving skills.

Meleca et al. (1981) conducted an extensive study to determine the competencies required of fieldwork instructors in nursing. Almost 700 nurses participated in the United States study. A pool of 72 competencies were identified. The usefulness of the competency definitions to O.T. and P.T. appears to be limited because the language used is specific to the nursing profession.

Medicine. One of the ten reports in medicine is descriptive; the remaining nine document research into various aspects of the fieldwork instructor role.

Ende (1983) describes the nature and importance of feedback in medical education. The guidelines he provides for giving

feedback to students parallel the important dimensions of feedback which have been noted by Brown (1981), Christie et al. (1985b), Emery (1984), and O'Shea and Parsons (1979).

Stritter et al. (1975), Irby (1978), Stritter, Baker, and McGaghie (1983), Meleca et al. (1981), and McLeod (1986) conducted research to identify the behaviours which were most frequently linked to effectiveness of an instructor.

In a study which asked 265, 3rd and 4th year medical students to rate the contribution of 77 instructor behaviours to student learning, 16 behaviours emerged as most helpful (Stritter et al., 1975). The most effective clinical instructor approached teaching with enthusiasm, set student objectives, summarized major points, focussed on comprehension and problem solving rather than factual recall, encouraged student questions, answered questions precisely, provided opportunities to practice a variety of skills, and provided constructive feedback on performance. Characteristic of all of the behaviours was evidence of the instructor's genuine interest in students and accessibility to students (Stritter et al., 1975).

Stritter et al. (1983) investigated the degree to which effective medical instructors were perceived to demonstrate each of 48 teaching behaviours and the degree to which each behaviour should be demonstrated. Sixty-three instructors and 116 students participated in the study. There was no significant

difference between instructor and student ratings of the behaviours an "ideal" instructor should demonstrate. Students reported that the best instructors provided more role modelling and more evaluation of performance. Congruence between the content emphasized by the instructor and the students learning needs, and the instructor's teaching style and the student's learning style were recommended by the authors.

A total of 61 instructor behaviours derived from the literature provided the basis for a further study of instructor effectiveness in medicine by Irby (1978). Medical faculty, students and residents ($n = 268$) were asked to select the characteristics which described the best and worst clinical instructors. The best instructors were described as enthusiastic, clear and well organised, and adept at interacting with students and residents. An analysis of the responses to open-ended questions identified the following additional important behaviours: breadth of medical knowledge, clinical competence, accessibility, friendliness; and interest in students, residents and patients.

McLeod (1986) asked each of 62 medical students to identify at least five instructors who they perceived to be most capable of conducting ward rounds that were conducive to learning and to appropriate patient care. The nine instructors who were most frequently mentioned were asked to report on how they conducted

rounds. Analysis of the reports showed that empathy to the needs of medical students, interest in being with and facilitating the learning of students, and being available to provide advice were common recommendations of the instructors.

The most comprehensive study of the behaviours which constitute the role of clinical instructor in medicine was carried out by Meleca et al. (1983). A total of 76 competencies were identified by the 256 clinical instructors who participated. The findings were similar to the national nursing study (Meleca et al., 1981). The competency definitions related to the content and context of fieldwork education in medicine. Consequently, their usefulness to O.T. and P.T. is minimal.

Irby and Rakestraw (1981), and Shellenberger and Mahan (1982) both obtained information about the behaviours of effective instructors through students' evaluations of clinical teaching. The evaluation form used by Irby and Rakestraw included eight instructor behaviours. While all eight behaviours have been identified in previous research, the three highest mean ratings were: is clear and organised, is knowledgeable and analytical, and establishes rapport. The form used by Shellenberger and Mahan included 34 items which represented the broad categories of behaviours identified by Stritter et al. (1975). It appears that only three of the eight items included by Irby and Rakestraw were incorporated in the form used by

Shellenberger and Mahan. The different contexts within which the forms were used (obstetrics and gynaecology versus general practice clerkships), and the variation in the number of items on the forms may account for the lack of similarity in the content of the items. Both of the forms appeared to be valid measures of instructor effectiveness.

Petzel, Harris, and Masler (1982) attempted to validate empirically the effectiveness of certain clinical instructor behaviours in an introductory clinical medicine course. Students' assessments of their first-year tutors' teaching skills were correlated with the same students' clinical performance as rated by their second year tutors. Setting clear goals, providing adequate supervision, and providing regular feedback all correlated with the students' ability to pursue symptoms, overall ability to take a medical history, and use of instruments when conducting a physical examination ($p < .05$). There was little or no correlation between student competency ratings and the following tutor characteristics or skills: was flexible to meet needs, maintained reasonable expectations, was accessible, encouraged questions, provided clear and succinct explanations, was a positive role model, and excelled as a teacher. The authors' suggested that the ratings may be different in studies of senior students.

A study by Farquhar and Holdman (1982) revealed that even though students may desire to have active involvement in their learning, clinical instructors in medicine tend to choose instructional techniques which limit active student involvement. These findings have significance for this study in that they confirm the importance of this instructor behaviour.

Speech pathology. There are only two recent references to fieldwork instructor competencies in speech pathology literature. The fieldwork instructor competencies defined by the American Speech-Language-Hearing Association (1982) included 70 competencies. However, many of the definitions appear to focus more on the level of professional competence of the speech pathology instructor or on the behaviours of the student rather than the education-related behaviours of the instructor. Pletts (1981) in reviewing the literature on clinical teaching, included lists of behaviours desired of a speech pathology fieldwork instructor. Although the wording differs from competencies or behaviours which have been cited already, the pattern is similar.

Dentistry. Romberg (1984) examined instructor effectiveness from students' evaluations of their instructors. The behaviours found to be most important were instructor availability, instructor responsiveness to questions, grading throughout the

fieldwork experience and promptness in grading. Meleca et al. (1981, 1983) refers to a dentistry study which was identical to the comprehensive studies in medicine and nursing. However, a report of the findings does not appear in the literature.

Pharmacy. The need for fieldwork instructors to model role-making and professional negotiation behaviours in addition to clinical skills is emphasized by Broadhead and Facchinetti (1985). Nine responsibilities of a fieldwork instructor are listed in a descriptive article by Cilla (1986). The first five responsibilities outline some of the steps of curriculum design (e.g. set clear learning objectives) as reported by Perry (1978). The remaining four responsibilities are similar to behaviours identified by other authors (e.g. provide positive corrective feedback during the learning process).

Analysis of findings

The review of the literature revealed 13 research studies from which fieldwork instructor competencies could be identified. An analysis of these competencies showed that there were eight competencies which four or more of the researchers had classified as most important to a student's fieldwork experience. These were:

1. Provides (regular, positive, consistent) feedback

2. Is open in discussing issues with student and others
3. Is available/accessible to students
4. Demonstrates positive regard for the student
5. Sets clear (and realistic) goals and responsibilities
6. Demonstrates the skills to be learned
7. Shows enthusiasm for teaching
8. Is sensitive to students' needs.

The content of the research reports did not always include the competencies which were perceived to be least important. Where these were presented, the information provided suggests that the competencies which are related to the professional competence of the health professional, appear to be less critical in influencing the outcome of a fieldwork experience.

Although the amount of information in the literature may suggest that fieldwork instructor competency definition should be complete, the findings are disappointing. No single source of information provides competency definitions which are sufficient to eliminate the need for this study. The majority of the reports ($n = 28$) focus on the 10-30 behaviours which have been most frequently associated with an effective fieldwork instructor in the profession being studied. In each of these reports, the definitions do not encompass all of the important behaviours which constitute the role of a fieldwork instructor.

While the literature does not yield competency definitions which can be transplanted directly on to an occupational therapy and physical therapy questionnaire, it does provide a rich data base from which a questionnaire can be developed. When all of the competencies relevant to occupational therapy and physical therapy were listed regardless of their similarity, 199 competencies were identified. All of the categories of competence chosen for this study were represented.

CHAPTER 3

Methodology

This chapter provides an explanation of and a rationale for the methods used to gather the information needed to answer the research questions in this study. It includes sections on the research design, questionnaire development, subjects, and the procedures used for data collection and analysis.

Research Design

A cross-sectional survey design was used to obtain O.T. and P.T. fieldwork instructors', and O.T. and P.T. students' perceptions of the importance of selected fieldwork instructor traits and behaviours (competencies) in determining the effectiveness of a student's fieldwork experience. In this type of survey, standard information is gathered from a pre-determined population, at the same point in time (Borg & Gall, 1983). It is considered to be a viable method to explore the relationships between two or more variables; in this case, the relationship between fieldwork instructor traits and behaviours and the effectiveness of a student's fieldwork experience. The nature of the apparent relationship can be described, but additional research with appropriate controls is necessary to determine the extent to which the relationship is causal (Mann, 1985).

Development of the Questionnaire

The steps taken in developing the questionnaire are described in this section of the Chapter. An outline of the content and format of the questionnaire is included. In addition, a discussion of question format, specificity and sequence; and of scale type, length and sequence provide a rationale for the chosen format. The summary of the pre-test procedures and a description of the modifications made to the questionnaire based on the pre-test results complete the section.

Questionnaire content

The questionnaire comprised of two sections: Section A - Demographic information and Section B - Fieldwork instructor traits and behaviours. Section A included questions related to the personal characteristics of the therapist and student respondents. Age, sex, the number of students supervised since graduation, years of clinical experience, the type of practice setting, the type of client problems encountered in clinical practice, the number and type of fieldwork instructor workshops attended, and the level of education were considered for each group of therapists (O.T. and P.T. fieldwork instructors). For the O.T. and P.T. students only age, sex and student year were included. These characteristics had been incorporated into

similar studies by other professions or were suggested for inclusion in future research (Christie et al., 1985b; O'Shea & Parsons, 1979).

The literature in the area of fieldwork instruction was the primary source for the content in Section B. An initial list of 199 competencies was derived from the literature. All of the competencies located in the literature were included at this stage regardless of apparent duplication or similarity. Using the experience of the researcher and expert advisors, the initial list of competencies was reduced. Competencies which were eliminated included (a) those which were so specific that they were unrelated to occupational therapy or physical therapy, and (b) those which were a duplication of content. The consolidation of the competencies yielded 99 competencies for the pretest of the questionnaire.

Format of the questionnaire

The literature on questionnaire design and scaling guided the choice of question format and scale in both sections of the questionnaire. In Section A, respondents were asked to give direct responses to questions (e.g. state their age) or to select the best response from a check-list. This format is typical of that used for demographic information (Sudman & Bradburn, 1982). In Section B, decisions about question format (open versus

closed), question specificity and sequence; and scale type, length and sequence were necessary.

Question format

A questionnaire may include open or closed questions, or combination of the two. In open questions, the respondent is free to answer as he or she chooses; in closed questions, a forced-choice format is used (i.e., the respondent must select one of several given answers). Schuman and Presser (1981) indicate that most contemporary questionnaires are more likely to use closed rather than open questions because they are significantly easier to code and analyse. Further, they cite numerous problems in the use of open questions, and suggest that many of the difficulties can be "avoided in closed questions, where respondents are in essence asked to code themselves, with minimal intervention by third parties" (p.104). The data from their research indicate that differences in responses to open and closed questions appear to be smaller for more-educated, in comparison to less-educated subjects. If it is accepted that the subjects in this study are generally more-educated than the populace at large, a questionnaire which utilizes a closed question format can be justified. In addition, research on open versus closed questions suggest that both formats produce similar information (Borg & Gall, 1983).

Question specificity and sequence

In Section B of the questionnaire, subjects were asked to indicate their perceptions of the degree of importance of certain fieldwork instructor competencies in determining the effectiveness of a student's fieldwork experience. By asking for subjects' perceptions of the degree of importance, their perceptions about the strength of the relationship between the competency and effective student experience is being ascertained. The subjects' ability to respond draws on their personal experience in a particular situation; that is, their experience as a fieldwork instructor, or as a student who has participated in a fieldwork experience. The research undertaken by Schuman and Presser (1981) shows that the level of specificity in questionnaire items is critical in enabling subjects to respond appropriately. For this reason, the competency statements were written as specifically as possible. In addition to being preferable in terms of the questionnaire design, other studies in which development of competencies was the goal (e.g. MacPherson et al., 1985; Young et al., 1983), and the literature on the process and objectives of competency formulation (McAshan, 1979; Nickse & McClure, 1981) advise that specific competency statements are more useful than general statements. This is consistent with the need for clear definitions of competencies

for O.T. and P.T. fieldwork instructors (e.g. Peat, 1985; Tompson, 1985).

Although the findings are inconclusive, research suggests that question order may bias respondents, particularly when similar questions are logically clustered together (Schuman & Presser, 1981). To diminish the risk of response-order bias a table of random numbers was used to randomize the questions.

Scale type, length and sequence

An ordered categories scale was selected for this study. This method asks participants to select their responses to questions from a fixed number of categories, commonly 2, 3, 4, 5, 7, 9 or 11 (Dunn-Rankin, 1983). The categories may be represented by numbers, descriptive statements, or a combination of the two. A Likert scale (1932) in which 1 represents strongly disagree, 2 - disagree, 3 - undecided, 4 - agree, and 5 - strongly agree is an example of an ordered categories scale which combines numbers and descriptive statements. Studies which have examined the characteristics or behaviours of effective clinical teachers are consistent in their use of this type of ordered categories scale (Emery, 1984; Irby, 1978; MacPherson et al., 1985; Meleca et al., 1983; Romberg, 1984; Shellenberger & Mahan, 1982; Stritter et al., 1975).

When descriptive statements are used together with numbers

for all points on a scale it is not always clear to a respondent how each label is distinct. For example, in a scale which asks whether a behaviour contributes significantly, moderately, somewhat or not at all to student learning, the difference between moderately and somewhat, may not be clear to the respondent. In this situation respondents may arbitrarily choose a response because the meaning is not clear. Even when statements are described clearly there can be no assurance that each term will be interpreted similarly by all respondents. To minimize such difficulties, a scale which used bipolar descriptive statements, of low importance and of extreme importance, together with a 7-point numerical scale was chosen.

Sudman and Bradburn (1982) suggest that a numerical scale should always use an odd number of points. The 7-point scale was selected to provide participants with a range of response options and increase the likelihood of dispersion of responses. In accordance with the recommendations from the literature the scale was sequenced from 1 - of low importance to 7 - of extreme importance (Schuman & Presser, 1981; Sudman & Bradburn, 1982).

Pretesting the questionnaire

The questionnaires were mailed to a convenience sample of 12 subjects to pretest face validity, to determine the time required to complete the questionnaire, and to obtain respondents'

opinions about comprehensiveness, format and clarity of instructions. Subjects comprised 6 O.T.'s and 6 P.T.'s. Three of the O.T.'s and 3 of the P.T.'s had supervised students in the past but did not meet the criteria for inclusion in the study. The remaining therapists were recent graduates (1986) from the School of Rehabilitation Medicine, at the University of British Columbia who had never supervised students. Completed questionnaires were returned from 10 (83.3%) of the subjects; they included 5 O.T.'s and 5 P.T.'s.

The mean age of the pretest respondents was 29 years, they were all female, and the number of years of experience of the fieldwork supervisors was 13.5 years. The average time taken to complete the questionnaire was 27 minutes, with a range from 15-50 minutes. Aside from the identification of one typing error in Section A no changes of wording, instructions or format were recommended.

In Section B, two changes were suggested: a) reduction of the scale length from 7 to 5 points and b) revisions to the wording of some items. Many of the pre-test respondents stated that the long 7-point scale made the scale seem "fuzzy" in the middle. The fact that many of their ratings were at 6 or 7 on the scale caused them to believe that they were completing the questionnaire incorrectly. The mean ratings for the items, which

ranged from 5.1 - 6.9 (with the exception of one item which had a mean of 3.1), indicated a skewed pattern. Analysis of the top 15 and the bottom 15 competencies based on the mean ratings of importance indicated that the 7-point scale did not appear to be as effective as anticipated in distinguishing between the most and least important competencies. In order to address these concerns, three changes were made. The scale length was changed to 5-points. Research by Jones (1978) provided no evidence to question the effectiveness of a 5-point compared to a 7-point scale. Instructions in Section B were revised because both the pattern of responses and respondents' comments indicated that re-phrasing might increase the dispersion of the ratings. Finally, additional distractor competencies (that is, those expected to be of low importance) were added to the questionnaire. The revised Section B, included 105 competencies.

While revisions were suggested to clarify the wording of some of the traits and behaviours none were considered to be irrelevant to the role of fieldwork instructor. Even though the questionnaire was long, the majority of respondents found the task interesting. I met with six of the respondents to discuss their comments, and the revised items were critiqued by two pretest respondents and one advisor. The final versions of the questionnaire are presented in Appendix A.

Subjects

Four groups of subjects were included in the study: a) O.T. fieldwork instructors, b) P.T. fieldwork instructors, c) O.T. students and d) P.T. students. Fieldwork instructors were therapists (male or female) who had instructed at least one student from School of Rehabilitation Medicine at the University of British Columbia (UBC) on a full-time fieldwork experience of 4 weeks or longer duration, between May 1986 and March 1987. The therapists, in O.T. and P.T., were identified from a review of the students' fieldwork performance reports which were located in the School of Rehabilitation Medicine. The fieldwork instructor population included 59 O.T.'s and 76 P.T.'s.

All students who were registered in the third or fourth year of the B.Sc.(O.T.) and B.Sc.(P.T.) programs at U.B.C. were included. The student population comprised of 34 O.T. students and 37 P.T. students; of these 13 were male. The third year O.T. and P.T. students had completed 8 and 10 weeks of full-time fieldwork experience respectively; and the fourth year students had completed 26 weeks of full-time fieldwork experience.

Procedures

The questionnaires were mailed or distributed to all subjects in the same week. The accompanying letters of introduction were signed by the researcher and the O.T. or P.T.

fieldwork co-ordinator from the School of Rehabilitation Medicine at the University of British Columbia. A stamped, self-addressed envelope for returning the questionnaire was included for therapists. The students were requested to leave the questionnaire in the School of Rehabilitation Medicine office prior to leaving the University of British Columbia for the summer months. Two weeks after the initial mailing, a follow-up letter and an additional questionnaire was sent to all of the non-respondents. An overall response rate of 87% was obtained from the initial and follow-up mailings. The response rates for each of the four core groups were 88% for O.T. fieldwork instructors, 80% for P.T. fieldwork instructors, 97% for O.T. students, and 89% for P.T. students.

One questionnaire was excluded from the analysis because more than 5% of the data were missing. Exclusion of eight additional questionnaires due to their late return, yielded a final study sample of 171 persons.

Prior to data analysis, each competency was assigned to one of the six pre-determined categories. The researcher and two advisors independently assigned the competencies to categories using the category definitions which were described in Chapter 2. When there was not full agreement about the assignment to categories, the majority rule was applied. For several of the competencies there was no agreement. In these situations,

discussion ensued and the researcher made a final decision about the appropriate category for the competency. The number of competencies assigned to each category ranged from 8 to 39. Appendix B lists the competencies by category.

Data Analysis

Each respondent was assigned an identification code, and all of the data were transferred to coding forms. Descriptive statistics, that is means, medians, standard deviations, frequencies, percentages and ranks were used to compare respondents on each of the demographic variables. The mean scores and standard deviations were also calculated for the ratings of importance for the O.T. fieldwork instructors, P.T. fieldwork instructors, O.T. students, P.T. students, and for the different combinations of these groups.

Inferential statistics were used to complete the data analysis. A factor analysis and subsequent varimax rotation with eigenvalues greater than 1.0 was used to examine the underlying dimensions of fieldwork instruction, and the pre-determined categories of competence. Two-way and three-way analyses of variance, followed by a multivariate analysis of variance were employed to assess between group differences in the ratings of importance of the competencies, by category. Tukey's multiple comparison tests and multiple t-tests were used to determine

which means differed significantly from each other. Pearson Product Moment Correlation Coefficients were used to examine the relationship of age and years of experience to ratings of importance. Finally, t-tests were used to determine the significance of differences in ratings of importance by groups of respondents categorized on the basis of demographic variables.

The data were analysed on the University of British Columbia MTS system using the Midas Statistical Package.

CHAPTER 4

Results

The analysis of the literature indicates that there are similarities between O.T. and P.T. fieldwork instructors', and O.T. and P.T. students' beliefs about the behaviours which characterize an effective fieldwork instructor (Barker, 1986; Biedeger & Larson, 1987; Christie et al., 1985b; Emery, 1984; Moore & Perry, 1976). The degree to which this trend is evident in British Columbia is reported in this chapter.

Findings from this study are presented in two parts: (a) characteristics of respondents, and (b) categories of competence and competencies: perceptions of importance. In part one, the demographic characteristics of the respondents which have been summarized from Section A of the study questionnaire (see Appendix 1, Section A) are presented. Descriptions of the general characteristics of the respondents (group classification, age and sex) are followed by descriptions of the characteristics which are relevant to all students, or all instructors. One of the questions, the category of client problems encountered by O.T. and P.T. fieldwork instructors, differed for each profession. For this reason, these data are discussed separately. In part two, the analyses of the data from Section B of the questionnaire (see Appendix A) are reported in relation to

the four research questions which were identified in Chapter one.

Characteristics of the Respondents

Of the 171 respondents, 55 were O.T. fieldwork instructors (OTF), 50 were P.T. fieldwork instructors (PTF), 33 were O.T. students (OTS), and 33 were P.T. students (PTS). Twenty-one (12.28%) were men and 150 (87.72%) were women. The average age of respondents was 30.67 years ($SD = 8.18$) with a range from 20 years to 60 years. The sex and age of respondents by group is presented in Table 1.

Table 1

Distribution of Respondents by Group, Age, and Sex

Group	OTF	PTF	OTS	PTS
No. of Respondents				
Male	3	5	4	9
Female	47	50	29	24
Age				
M	35.54	33.33	24.42	25.18
SD	8.65	7.29	4.09	3.72
Median	33.00	31.00	22.67	24.20
Range	24-59	23-60	21-37	20-35

In the OTS group 18 (54.55%) were third year students and 15 (45.45%) were fourth year students. A similar analysis of the PTS group showed that 16 (48.48%) were third year students and 17 (51.52%) were fourth year students.

The level of education of OTF and PTF respondents is presented in Table 2. A majority of the respondents in both groups reported that their highest level of education was a baccalaureate degree (72% and 72.73% respectively).

Table 2

Distribution of OTF and PTF Respondents by Level of Education

Qualifications	OTF		PTF	
	No. of respondents	% of OTF group	No. of respondents	% of PTF Group
Diploma in OT <u>or</u> PT	14	28.00	14	25.45
Diploma in OT <u>and</u> PT				
Bachelors degree in OT <u>or</u> PT	21	42.00	23	41.82
Bachelors degree in OT <u>and</u> PT	13	26.00	17	30.91
Masters degree			1	1.82
Other	2 ^a	4.00		

Note. ^a = 1 has a B.A.; 1 has a B.Sc. and a Post-graduate diploma.

All of the fieldwork instructors were asked to identify the type of setting in which they had practised most frequently in 1987. Their responses are reported in Table 3.

Table 3

Distribution of OTF and PTF Respondents by Type of Practice

Setting

Type of setting	OTF		PTF	
	No. of respondents	% of OTF group	No. of respondents	% of PTF Group
Inpatient program - acute care or rehabilitation	23	46.00	31	56.36
Inpatient program - long term care	3	6.00	-	-
Outpatient program, day program or community service	21	42.00	22	40.00
Other	3 ^a	6.00	2 ^b	3.64

Note. ^a = 1, outpatient - acute care; 1, Child Development program; 1, unstated.

^b = 1, Workers' Compensation Board; 1, combination of inpatient and outpatient, acute care and rehabilitation.

The average number of years that OTF respondents had practised O.T. since graduation was 11.21 years (SD = 7.64) with a range from 2 years to 34 years. In the PTF group, respondents

had practised an average of 10.18 years (SD = 7.29) ranging from 1 year to 36 years. The median number of years of practice for the OTF and PTF groups were 9.50 years and 7.88 years respectively.

The number of fieldwork students instructed by respondents in each group since graduation is presented in Table 4.

Table 4

Distribution of OTF and PTF Respondents by the Number of Fieldwork Students Instructed

Number of students instructed	OTF		PTF	
	No. of respondents	% of OTF group	No. of respondents	% of PTF Group
0 - 5	11	22	24	43.64
6 - 10	14	28	12	21.82
11 - 15	10	20	5	9.09
16+	15	30	14	25.45

Similar proportions of OTF respondents were represented in each of the four groups. Fifty percent of the O.T.'s had instructed 10 or fewer students, and 50% had instructed 11 or more students. In contrast, 65.46% of PTF respondents had instructed 10 or fewer

students, and only 34.54% had instructed 11 or more students. These data show that OTF respondents have had more experience instructing students than the PTF respondents.

Further analysis of the number of students instructed by the older and more experienced OTF and PTF respondents provided more information about the differences between the groups. The proportion of PTF respondents who were above the P.T. median for years of experience, and who had instructed five or fewer students was 28.57% ($n = 8$). Occupational therapy fieldwork instructors who had instructed five or fewer students represented only 4% ($n = 1$) of the instructors who were above the O.T. median for years of experience. A similar analysis of OTF and PTF respondents who were above the median for age and who had instructed five or fewer students yielded proportions of 12% ($n = 3$) and 24% ($n = 6$) respectively. These data reveal that fewer of the older and more experienced respondents in the PTF group instruct students than do older and more experienced OTF respondents. The proportion of older, more experienced O.T. and P.T. fieldwork instructors who had instructed 16 or more students in each group was similar. In the PTF group 40% ($n = 10$) of the older instructors and 40% ($n = 12$) of the more experienced respondents had instructed 16 or more students. The proportions of older and more experienced OTF respondents who had instructed 16 or more students were 48% and 52% respectively.

Thirty of the OTF respondents (60%) reported attending a fieldwork instructor preparation program within the last five years, compared to 10 (18.18%) of the PTF group. The type of programs attended by these respondents is displayed in Table 5.

Table 5

Distribution of OTF and PTF Respondents by Type of Fieldwork
Instructor Program Attended

Program attended	OTF ^a		PTF ^b	
	No. of respondents	% of OTF group	No. of respondents	% of PTF Group
1 day, or 2 1/2 day workshops offered by the School of Rehabilitation Medicine (SRM)	23	76.67	3	30.00
6 week course offered by the SRM (OTF only)	2	6.67		
1-2 hour inservice session offered by the SRM	1	3.33	2	20.00
Inservice series offered by the SRM	3	10.00	-	-
Other ^c	1	3.33	5	50.00

Note. $a_n = 30$. $b_n = 10$. ^c = Seminars, workshops and inservice sessions offered by the University of Alberta, Dalhousie University, Queens University, University of Saskatoon, University of Toronto and the University of Western Ontario.

The response options for the question on the most common category of client problems encountered in the respondents' practice in 1987 differed for each of the therapist groups. Nineteen (38%) of the OTF respondents practiced in adult psychiatry, 22 (44%) in adult, physical dysfunction, 5 (10%) in paediatric, physical dysfunction, and 4 (8%) reported working with types of client problems which they did not perceive to be incorporated in the previous categories.

In the PTF group, the highest proportion of therapists ($n = 25$; 45.45%) worked with adults who had orthopaedic or musculo-skeletal problems. Of the remainder, 11 (20%) treated adults with cardio-respiratory problems, 8 (14.55%) treated adult neurology clients, 3 (5.45%) treated children with neurological problems, 3 (5.45%) treated children with orthopaedic disorders and 5 (9.09%) treated clients who had problems which were not included in these categories.

In general, the OTS and PTS respondents, can be described as young, mainly female, third and fourth year students registered the O.T. and P.T. undergraduate programs at the University of British Columbia. The OTF and PTF respondents are young to middle-aged adults, the majority of whom are female, with education to the baccalaureate level.

Categories of Competence and Competencies:

Perceptions of Importance

A profile of the pattern of responses to Section B of the questionnaire, and the presentation of the findings for each of the four study questions are incorporated in the next part of this chapter. The data pertaining to the study questions are reported under the following headings: (a) categories of competencies: validation and importance, b) competencies identified as most important, c) group differences in the ratings of importance, and d) the relationship of personal variables to the ratings of importance.

Response Profile

The mean rating of each competency for the four core groups (OTF, PTF, OTS and PTS), and for combinations of these groups are presented in Appendix C. Analysis of the mean ratings of the competencies for all groups combined (see Appendix C, Section 3), showed that the ratings ranged from a low of 1.70 (Chair staff meetings) to a high of 4.85 (Provide constructive feedback). Nineteen percent of the OTF and PTF ratings of importance, and 26% and 36% of OTS and PTS ratings of importance respectively, were below 4.00 (see Appendix C, Section 1). Although the ratings of importance for the majority of the competencies ranged from 1:00 to 5:00 the response pattern indicated that the data

were negatively skewed (Ferguson, 1981).

Examination of the mean ratings of importance across the groups showed that while there were differences in ratings between the groups the direction of the ratings were the same. That is, all groups tended towards higher or lower ratings of each competency rather than one or more groups giving low ratings (less than 3.00) and others giving high ratings (more than 3.00). The variance between groups on the each competency did not differ markedly.

Nine competencies were included in the questionnaire as distractors; that is, competencies which were shown to be less important in previous research. The mean ratings of these competencies ranged from 1.70 to 3.72. Only one of the nine mean ratings exceeded 3.50. Seven of the nine distractors were included in the 10 lowest ranked mean ratings when the data from all groups were combined.

Categories of Competence: Validation and Importance

Typically, educational programs are divided into units of instruction in which similar or related dimensions of a topic are introduced at the same time, or in a logical sequence (Gronlund, 1978; Tyler, 1949). Since the outcomes of this study will provide a basis for planning educational programs for fieldwork instructors, the division of the competencies required for

effective instruction of students' fieldwork experiences into categories of competence was considered to be desirable. In order to guide the development of preparatory programs for O.T. and P.T. fieldwork instructors, six categories were pre-determined for this study. These categories were professional competence behaviours, teaching behaviours, supervisory behaviours, communication behaviours, evaluation behaviours, and personal characteristics or traits.

The first research question was comprised of three parts: (a) what categories of competencies (i.e. factors) can be identified by analysing the interrelationships between ratings of importance, (b) to what extent do the categories [identified in (a)] relate to the six pre-determined categories of competence, and (c) which of the categories are rated as most important in determining the effectiveness of students' fieldwork experiences. Questions (a) and (b) are reported under the heading, validation of categories; question (c) is addressed in the most important categories section.

Validation of Categories

A principal component factor analysis followed by a varimax rotation of the factors with eigenvalues greater than 1.0 was employed to determine what factors emerged from the data and to validate the six pre-determined categories of competence.

Analysis of the scaled factor loadings on all of the 105 competencies revealed that most of the competencies loaded rather highly on a one-factor solution. Beyond the first unrotated factor, which accounted for 20.90% of the variance, none of the factors explained more than 4.60% of the variance. Although the proportion of variance accounted for by the first factor was transferred to other factors following the varimax rotation, the pattern was similar. Inspection of the competencies with loadings greater than 0.50 on the first factor showed that competencies from all of the pre-determined categories of competence were included. Thus, the pre-determined categories were not shown to represent independent sets of competencies in the factor analysis.

Competency intercorrelations were moderate; 80% of the correlations ranged from 0.10 to 0.39. Of the pairs of competencies with correlations of 0.50 or higher, 60% belonged to the same category. These data support the validity of the pre-determined categories of competence. When a principal component factor analysis and a subsequent varimax rotation was conducted on the mean ratings for the six pre-determined competency categories rather than the 105 competencies, further evidence of a trend towards independence of the categories emerged (see Table 6). Each factor showed a high loading on one category of competency.

Table 6

Varimax Factors for the Pre-determined Categories of Competence

Category	Factor					
	1	2	3	4	5	6
Professional competence	.275	.215	<u>.839^a</u>	.318	.176	.200
Teaching behaviours	.449	.237	.381	.247	.317	<u>.658^a</u>
Supervisory behaviours	.291	.320	.185	.286	<u>.810^a</u>	.197
Communication behaviours	.166	<u>.903^a</u>	.167	.227	.242	.132
Evaluation behaviours	<u>.884^a</u>	.173	.233	.208	.232	.189
Personal traits	.158	.248	.306	<u>.854^a</u>	.253	.155
% Variance	20.0	18.5	17.7	17.8	16.1	9.9

Note. ^a = highest loadings for each factor, and represent each of the six categories of competence.

Most Important Categories

While the presentation of the competencies which were identified as most important is related to the second research question, analysis of the categories to which the most important competencies belong is pertinent to the first research question.

Three steps were taken to identify the most important competencies: (a) the top 10 ranked competencies for each group were sorted by category (see Table 7), (b) the average ratings of the competencies in each category were compared (see Table 8), and (c) competencies which received a mean rating of 4.50 or higher by each group or combination of groups (see Tables 9 and 10) were identified.

Table 7 depicts the distribution of the top 10 ranked competencies by category for each of the nine groups. Due to the fact that some of the competencies were given equal ranking by some groups, the number of competencies which were ranked in the top 10, ranged from 10 to 16. As indicated in Table 7, when the pre-determined categories for each of the top 10 ranked competencies were examined, the competencies in the categories of supervisory behaviours and communication behaviours appeared to be most important. The OTF group rated communication behaviours as most important, whereas the PTF group gave supervisory behaviours and communication behaviours equal rating. In the OTS group and the PTS group, twice as many supervisory behaviours were ranked in the top 10 as were communication behaviours. This is the reverse of the OTF group pattern, where communication behaviours were ranked in the top 10 twice as often as supervisory behaviours.

Table 7

Proportion of the Top 10 Competency Rankings by Category and by Group

Category	Category ^a					
	1	2	3	4	5	6
OTF	9.09	-	18.18	36.36	9.09	27.27
PTF	-	10.00	40.00	40.00	-	10.00
OTS	-	18.75	43.75	25.00	6.25	6.25
PTS	-	18.18	54.55	18.18	-	-
OTF and PTF	-	9.09	27.27	36.36	-	18.18
OTS and PTS	-	20.00	50.00	30.00	-	-
OTF and OTS	-	16.67	25.00	33.33	8.33	16.67
PTF and PTS	-	9.09	36.36	45.45	-	9.09
OTF, PTF, OTS & PTS	-	10.00	40.00	40.00	-	10.00

Note. ^a1 = professional competence; 2 = teaching behaviours; 3 = supervisory behaviours; 4 = communication behaviours; 5 = evaluation behaviours; 6 = personal traits.

Further information about the relative importance of the six categories is provided in Table 8. This table displays the mean ratings and standard deviations of the ratings of the competencies within the six categories for all groups combined. An analysis of variance revealed significant differences among the mean ratings

of the categories ($p < .0001$). Tukey's multiple comparison test was used to determine which means were different from each other.

Table 8

Means and SD by Category for all Subjects^a

Category	M	SD
Professional competence	3.81	0.50
Teaching behaviours	4.04	0.41
Supervisory behaviours	4.47	0.32
Communication behaviours	4.58	0.32
Evaluation behaviours	4.13	0.52
Personal traits	4.38	0.42

Note. ^a $n = 171$. All of the means differed significantly from each other at $p < .05$.

The category of Communication behaviours was perceived to be the most important category, and the category of professional competence behaviours was deemed the least important in contributing to the effectiveness of a student's fieldwork experience. These findings are consistent with the pattern which was apparent in the analysis of the top 10 rankings by category and by group (see Table 7).

Competencies Identified as Most Important

Identification of the competencies which the O.T. and P.T. fieldwork instructors' and the O.T. and P.T. students' perceived as most important in determining the effectiveness of students' fieldwork experiences was the objective of the second research question. A mean rating of 4.50 or higher has been specified as the criterion for identifying the most important competencies (traits and behaviours). The number of competencies meeting this criterion in each of the nine groups or combinations of groups is displayed in Table 9.

Table 9

Number of Competencies Perceived to be Most Important by Group(s)

Group(s)	Items Perceived to be Most Important	
	No. of Items	% of total items
OTF	42	40.00
PTF	33	31.43
OTS	41	39.05
PTS	15	14.29
OTF and PTF	37	35.24
OTS and PTS	28	26.67
OTF and OTS	39	37.14
PTF and PTS	23	21.90
OTF, PTF, OTS and PTS	32	30.48

Fifty-three of the 105 competencies (50.48%) were classified

as most important in one or more of the nine groups. Ten of the 53 competencies (19%) received a mean rating of 4.50 or higher by all nine groups. In addition, these same 10 competencies were the only competencies rated 4.50 or higher which were common to the four core groups (OTF, PTF, OTS and PTS). The 10 competencies are presented in Table 10.

Table 10

The Top 10 Competencies Rated 4.5 or Higher which were Common to all Groups

Rank	Competency
1	Provide constructive feedback
2	Provide feedback without belittling the student
3 =	Allow the student progressive independence
3 =	Provide opportunities for supervised and unsupervised practice appropriate to the students' level of fieldwork experience.
5 =	Make specific suggestions for improvement of performance
5 =	Discuss issues openly with students
7	Communicate with student(s) in a non-threatening manner
8	Explain clearly, basis for own actions
9	Provide time for discussion and questions on a regular basis
10	Observe students' performance in such a way as not to intimidate the student

A second approach to identifying the 10 most important competencies was to combine the ratings of all groups, and to select the competencies with the highest mean ratings. Table 11 lists these competencies, their ranking of importance, and the means and standard deviations of the ratings of the competencies by the four core groups. The proportion of the 10 competencies listed in Table 11 which were included in the top 10 rankings of the remaining eight groups, ranged from a low of 45.45% (PTS) to a high of 81.82% (PTF and PTS; OTF and PTF).

Table 11

The Top 10 Ranked Competencies for all Groups Combined, and the Means and SD for OTF, PTF, OTS and PTS Groups

Rank	Competency	OTF	PTF	OTS	PTS
1	Provide constructive feedback				
	M	4.94	4.84	4.82	4.79
	SD	0.24	0.42	0.39	0.42
2	Provide feedback without belittling the student				
	M	4.94	4.80	4.91	4.52 ^d
	SD	0.24	0.56	0.38	0.62
3 =	Provide opportunities for supervised and unsupervised practice appropriate to the students' level of fieldwork experience				
	M	4.66 ^a	4.69 ^b	4.89	4.85
	SD	0.52	0.54	0.33	0.36

Rank	Competency	OTF	PTF	OTS	PTS
3 =	Allow the student progressive independence				
	M	4.70 ^a	4.75	4.82	4.79
	SD	0.54	0.44	0.39	0.42
5 =	Discuss issues with the student openly				
	M	4.78	4.78	4.70	4.64
	SD	0.46	0.50	0.53	0.65
5 =	Make specific suggestions for improvement of performance				
	M	4.78	4.76	4.76	4.60
	SD	0.46	0.51	0.50	0.66
7	Demonstrate positive regard for the student				
	M	4.84	4.73	4.73	4.45 ^d
	SD	0.42	0.56	0.52	0.56
8	Encourage student questions, opinions and requests for assistance				
	M	4.80	4.75	4.67 ^c	4.42 ^d
	SD	0.45	0.48	0.54	0.71
9	Communicate with the student in a non-threatening manner				
	M	4.74	4.69 ^b	4.70	4.52 ^d
	SD	0.44	0.47	0.47	0.67
10	Provide positive feedback on performance				
	M	4.70 ^a	4.69 ^b	4.70	4.45 ^d
	SD	0.54	0.47	0.53	0.56

Note. ^a = item not included in top 10 items for OTF. ^b = item not included in top 10 items for PTF. ^c = item not included in top 10 items for OTS. ^d = item not included in top 10 items for PTS.

For the combined rankings only the items provide constructive feedback, discuss issues with the student openly, and make specific suggestions for improvement of performance were included in the top 10 rankings of the four core groups.

While inferential analysis of the differences in ratings of importance for all of the competencies among the groups was judged to be inappropriate, some additional observations were possible from the review of the descriptive data. Of the 53 competencies classified as most important by one or more groups, 26 (49%) were ranked in the top 10 by one or more of the OTF, PTF, OTS and PTS groups. Although overlap in the top rankings of the competencies was evident among the groups, a higher proportion of the students' top ratings pertained to supervisory behaviours, particularly those which focussed on feedback regarding student performance. In contrast, competencies related to communication behaviours were rated higher by the fieldwork instructors. These differences emerged when the top 10 competencies were isolated for each of the core groups, and for the different combinations of groups (see Table 7), but the differences were less apparent when the mean ratings for the competencies were compared (see Table 11). For example, the competency which was ranked 10th, provide positive feedback on performance, was not included in the top 10 ranked competencies for the OTF, PTF and PTS groups. However, the mean ratings for

this competency ranged from 4.45 to 4.70 for the four core groups, and the variance ranged from 0.22 to 0.31.

Of the 53 competencies which were ranked in the top 10 by one or more groups there were only eight competencies for which the difference between the lowest and highest mean ratings of the four core groups exceeded 0.50. The difference was 0.70 or higher for three of these competencies. For two of the three, request feedback from the student regarding the fieldwork program and take responsibility for own actions, the OTF and PTF groups gave higher ratings than the students. The differences between the fieldwork instructors' ratings (OTF and PTF combined) and the students' ratings (OTS and PTS combined) of these two competencies were 0.47 and 0.24 respectively. The students' rated the competency, point out weaknesses in student performance 0.45 higher than the fieldwork instructors.

In general, the differences between the group ratings of the majority of the 53 competencies which were rated as most important were low, and the variances in the competency ratings were similar across the groups. However, it is notable that the mean ratings of importance of the PTS group were lower than the other three core groups on 43 of the 53 competencies.

Group Differences in the Ratings of Importance

The third research question sought to determine to what

extent the mean ratings of importance of the competency categories differed between the OTF, PTF, OTS and PTS groups, between professions (OTF and OTS groups compared to PTF and PTS groups), and between fieldwork instructors (OTF and PTF groups) and students (OTS and PTS groups). In order to identify any main and/or interaction effects between the ratings of importance and these various combinations of groups a two-way analysis of variance (ANOVA) and a three-way ANOVA were employed (Borg & Gall, 1983). The two-way ANOVA explored the main and interaction effects for the core groups (OTF, PTF, OTS and PTS) and the ratings of importance for all six competency categories. In the three-way ANOVA, the main and interaction effects for fieldwork instructors (OTF and PTF) and students (OTS and PTS), and O.T. (OTF and OTS) and P.T. (PTF and PTS), and ratings of importance in each of the six categories were assessed.

The means and standard deviations for each of the groups or combinations of groups provided the raw data for the statistical analyses and are displayed in Table 12. The findings are presented under the following headings: (a) differences between core groups, (b) differences between fieldwork instructors and students, and between professions, (c) multivariate analysis of variance results. The multivariate analysis of variance (MANOVA) was used to confirm any differences that were identified in the mean ratings of importance for the six competency categories for

each of the four core groups.

Table 12

Means and SD by Category for all Groups

Group	Category					
	1	2	3	4	5	6
OTF						
M	3.86	4.13	4.46	4.62	4.24	4.51
SD	0.47	0.41	0.30	0.29	0.48	0.29
PTF						
M	3.88	4.10	4.52	4.64	4.24	4.38
SD	0.56	0.45	0.35	0.27	0.52	0.43
OTS						
M	3.76	4.05	4.54	4.54	4.06	4.37
SD	0.40	0.26	0.25	0.33	0.45	0.43
PTS						
M	3.65	3.79	4.35	4.47	3.81	4.17
SD	0.52	0.41	0.32	0.37	0.52	0.49
OTF and PTF						
M	3.87	4.12	4.49	4.63	4.24	4.44
SD	0.52	0.43	0.33	0.28	0.50	0.37
OTS and PTS						
M	3.71	3.92	4.44	4.50	3.94	4.27
SD	0.46	0.36	0.30	0.35	0.49	0.47
OTF and OTS						
M	3.82	4.10	4.49	4.59	4.17	4.46
SD	0.44	0.35	0.28	0.31	0.47	0.36
PTF and PTS						
M	3.79	3.99	4.47	4.58	4.08	4.30
SD	0.56	0.45	0.35	0.32	0.56	0.46

Differences between Core Groups and Ratings of Importance

The results of the two-way factorial ANOVA for core groups is presented in Table 13.

Table 13

Factorial Analysis of Variance of Core Groups and Categories

Source	df	MS	F	P
Core groups	3	3.342	4.98	0.003*
Error	167	0.671	9.79	0.000
Categories	5	14.639	213.76	0.000**
Core groups x categories	15	0.164	2.39	0.002*
Error	835	0.068		

Note. * $p < .01$. ** $p < .0001$.

Administration of Tukey's multiple comparison test for the Core groups x Categories interaction effects revealed significant differences between groups in four of the six categories. A plot of the Core groups x Categories interaction is shown in Figure 2.

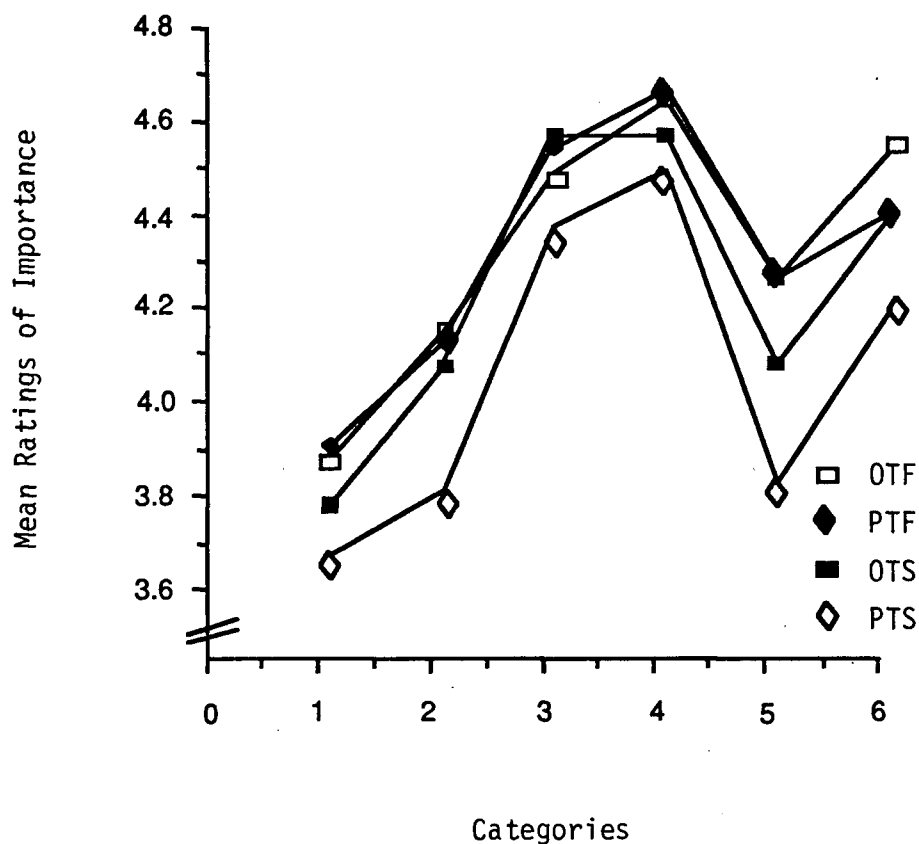


Figure 2. Differences in mean ratings for the four core groups for each category.

There were no significant differences in the categories of supervisory and communication behaviours (categories three and four respectively). In category one, professional competence, the PTS ratings differed significantly from the PTF group ($p < .05$). The PTS ratings were lower than the OTF, PTF and OTS groups in category two, teaching behaviours and in category five, evaluation behaviours ($p < .05$). Analysis of the differences

between the OTS and PTS mean ratings of the competencies in the teaching and evaluation behaviours categories showed that there were nine teaching behaviours and one evaluation behaviour in which the differences between the groups exceeded 0.50. All of the teaching behaviours in which the OTS group was 0.50 or higher ($n = 6$) than the PTS group included content related to objectives for fieldwork experiences. For the one evaluation behaviour (document evaluation accurately) the mean rating of the OTS group was 0.67 higher than the mean rating of the PTS group. In the personal traits category (category six) the PTS group was significantly lower ($p < .05$) than the O.T. and P.T. fieldwork instructors.

Differences between the overall mean scores for each category of competence were significant to the $p < .05$ level. Analysis of the differences between the core groups indicated that the ratings of importance of the PTS group were significantly lower than the OTF and the PTF groups ($p < .05$).

The two-way ANOVA demonstrated significant main effects for the core groups and the categories, and significant interaction effects in the Core groups x Categories analysis.

Differences between Fieldwork Instructors and Students, and between Professions

The statistical data from the three-way ANOVA for fieldwork

instructors and students, and professions are displayed in Table 14.

Table 14

Factorial Analysis of Variance of Fieldwork Instructors and Students, of Professions and of Categories

Source	df	MS	F	P
Fieldwork instructors and students	1	6.879	23.96	0.005**
O.T. and P.T.	1	1.278	9.54	0.027*
Categories	5	14.639	213.76	0.000****
Fieldwork instructors and students x O.T. and P.T.	1	1.868	26.49	0.004**
Fieldwork instructors and students x categories	5	0.287	4.19	0.001***
O.T. and P.T. x categories	5	0.134	1.96	0.082
Fieldwork instructors and students x O.T. and P.T. x categories	5	0.071	1.03	0.399
Error	835	0.068		

Note. * $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

Subsequent multiple comparison tests confirmed that there were no significant interaction effects for O.T. and P.T. x Categories, or for Fieldwork Instructors and Students x O.T. and P.T. x

Categories. In the Fieldwork instructors and Students x Categories analysis, the students' mean ratings were significantly lower than the fieldwork instructors' ($p < .05$) except in categories three and four, the categories of supervisory and communication behaviours respectively (see Figure 3).

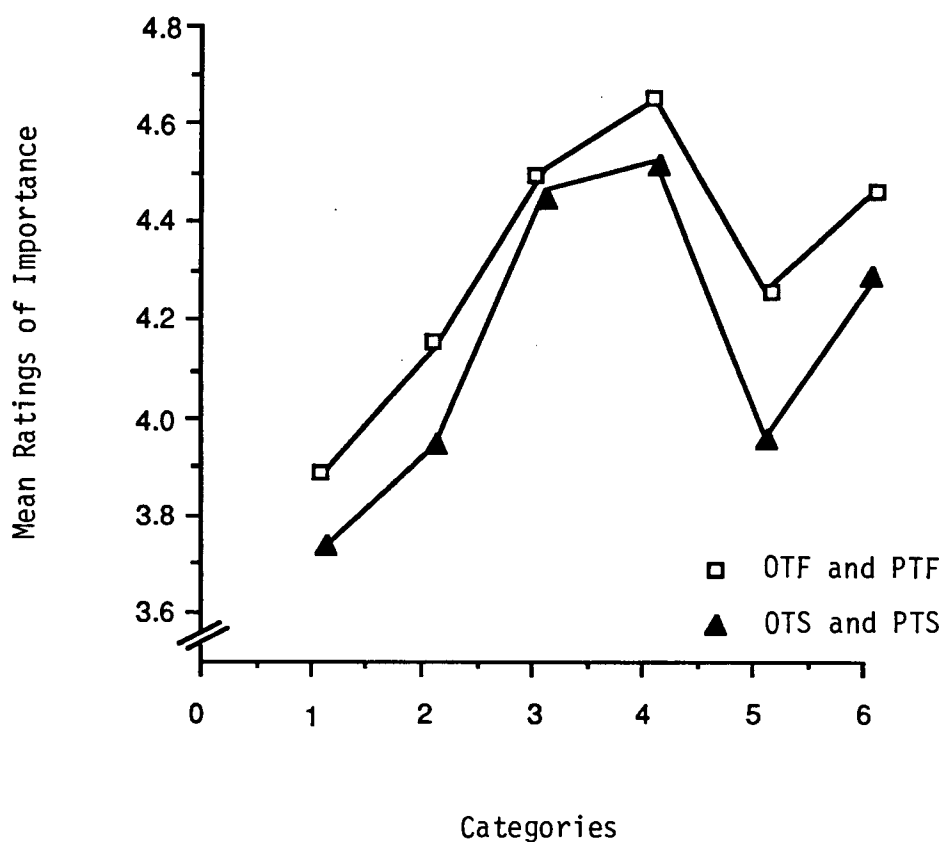


Figure 3. Differences in mean ratings for fieldwork instructors (OTF and PTF combined) and students (OTS and PTS combined) for each category.

The differences between fieldwork instructors and students, and professions (O.T. and P.T.), were both significant to the $p < .05$ level. However, when the interaction between these four groups is considered (that is, O.T. and P.T. are collapsed over fieldwork instructors and students) this result is clarified (see Figure 4). The only significant main effect continues to be that

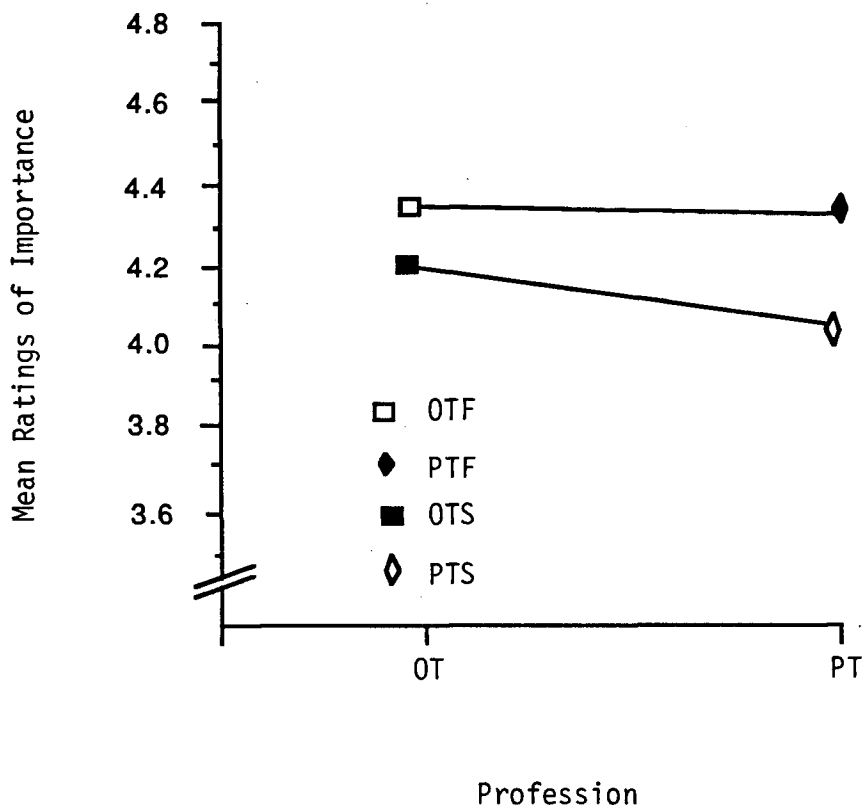


Figure 4. Mean ratings of importance for fieldwork instructors (OTF and PTF) and students (OTS and PTS), and professions (OT and PT).

the ratings of the PTS group are lower than the OTF and PTF groups ($p < .05$). The OTS group ratings did not differ significantly from either the PTS or OTF and PTF groups.

Multivariate Analysis of Variance Results

A multivariate analysis of variance (MANOVA) was used to further examine the main finding that emerged from the two-way ANOVA and the three-way ANOVA -- that the PTS group was significantly lower in their ratings of importance than the OTF and PTF groups. The analysis which tested for differences between the core groups and the mean ratings of importance for the six competency categories revealed significant differences (Wilks Lambda 0.71; $df = 6, 3, 167$; $p < .0001$). Administration of a one-way ANOVA and subsequent multiple comparison tests confirmed the pattern of the previous findings. The ANOVA findings are presented in Table 15.

Table 15

Analysis of Variance for Each Category

Category	Source	df	MS	F	P
Professional competence	Group Error	3 167	0.444 0.250	1.779	0.151
Teaching behaviours	Group Error	3 167	0.977 0.158	6.176	0.001***
Supervisory behaviours	Group Error	3 167	0.294 0.097	3.023	0.031*
Communication behaviours	Group Error	3 167	0.247 0.096	2.574	0.055
Evaluation behaviours	Group Error	3 167	1.630 0.247	6.611	0.000***
Personal traits	Group Error	3 167	0.816 0.166	4.927	0.003**

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

The PTS group was significantly different from the other three groups (OTF, PTF and OTS) in category six, the teaching behaviours category ($p < .05$). In the evaluation behaviours category (category five), the PTS group differed significantly from the OTF and PTF groups ($p < .05$). Finally, the PTS group was significantly different from the OTF group in category six, so the personal traits category ($p < .05$).

A comparison between these results and those of the Core Group x Categories analysis revealed some differences. In the two-way ANOVA the PTS group were also significantly different from the PTF group in the category of professional competence(category one). This difference was not evident in the one-way ANOVA. Although the PTS group differed significantly from other groups in the categories of evaluation behaviours and personal traits (categories five and six respectively), the differences were evident between fewer groups in the one-way ANOVA. The findings from all of the analyses are relatively consistent in demonstrating the trend towards significant differences between the PTS group and other groups, in three to four of the competency categories.

The Relationship of Personal Variables to Ratings of Importance

Part A of the questionnaire requested demographic information from all of the respondents in each of the OTF, PTF, OTS and PTS groups (see Appendix 1, Part A). Assessing the extent to which the personal variables, which were elicited from this part of the questionnaire, were related to the respondents ratings of importance for the competency categories, was the goal of the fourth research question. The descriptive data (means and standard deviations) for the six categories rather than the 105

competencies provided the basis for these statistical analyses. The respondent characteristics analysed for the fieldwork instructors were age, years of experience, number of students supervised, type of setting in which the respondents were employed, the type of client problems addressed by respondents, and attendance of respondents at fieldwork instructor preparation programs. For the students, the relationships between age, student year, and mean ratings of importance were analysed. Two variables, sex (fieldwork instructors and students) and educational qualifications (fieldwork instructors), were not included in this analysis due to the small cell sizes of some of the response categories (see Tables 1 and 2).

Fieldwork Instructors

In order to determine the extent to which OTF and PTF respondents' ages, and number of years of practice were related to the mean ratings for the six competency categories, Pearson Product Moment Correlation Coefficients were calculated. No significant correlations were found for age. The number of years in which a fieldwork instructor had practised as an O.T. or a P.T. was significantly correlated to the mean ratings for the categories of professional competence behaviours ($r = 0.25$; $p < .01$), teaching behaviours ($r = 0.22$; $p < .05$) and evaluation behaviours ($r = 0.20$; $p < .05$). While these correlations are

significant they are low. A post-hoc t-test showed that there were no significant differences between ratings of importance of OTF and PTF respondents who had less than 10 years experience ($n = 55$) and those who had more than 10 years experience ($n = 48$).

The responses of the fieldwork instructors to the question on the number of students supervised, fell into four groups: (a) 0-5, (b) 6-10, (c) 11-15 and (d) 16 or more students. The OTF and PTF populations consisted only of instructors who had supervised one or more UBC students. Thus, all of the group (a) respondents had supervised at least one student. Inclusion of a zero in this item can be considered to be an error in the questionnaire. In order to determine if differences were evident when OTF and PTF data were combined and analysed across each of these four groups for each of the six categories, an analysis of variance was used. No significant differences were found.

T-tests were used to examine all of the remaining fieldwork instructor variables. Table 3 indicated that the majority of OTF and PTF respondents worked in inpatient settings (acute and rehabilitation) and outpatient settings. The low number of respondents who worked in inpatient, long term settings ($n = 3$) and other settings ($n = 5$) did not permit statistical comparison. Therapists who worked in inpatient settings ($n = 54$) were compared to therapists who worked in outpatient settings ($n = 43$)

using a t-test. The findings were not significant. Due to differences in the types of client problems addressed by OTF and PTF subjects these data could not be compared. However, in the OTF group the extent of the differences between OTF respondents who selected the categories of adult psychiatry ($n = 19$) and adult, physical dysfunction ($n = 27$) were analysed. In the PTF group, the ratings of PTF respondents who chose adult orthopaedics ($n = 25$) were compared to those who chose other categories ($n = 30$). None of the findings were significant. The type of client problems addressed by the respondents in these groups appear to be unrelated to their ratings of importance.

Of all of the statistical tests conducted on the relationship of personal variables to the fieldwork instructors' ratings of importance only one other significant finding appears to be meaningful. There was a significant difference ($p < .01$) between OTF and PTF respondents who had participated in a fieldwork instructor preparation program compared to those who had not, in the category of evaluation behaviours (see Table 16).

Table 16

T-test Comparing Ratings of Fieldwork Instructors who had and had not Participated in Workshops by Category

Category	Yes ^a	No ^b	t	df	p
Professional competence					
M	3.88	3.87	0.12	103	0.905
SD	0.50	0.53			
Teaching behaviours					
M	4.22	4.06	1.91	103	0.058
SD	0.40	0.44			
Supervisory behaviours			-		
M	4.50	4.49	0.12	103	0.903
SD	0.35	0.30			
Communication behaviours					
M	4.63	4.63	-0.08	103	0.939
SD	0.30	0.26			
Evaluation behaviours					
M	4.39	4.15	2.49	103	0.014*
SD	0.47	0.50			
Personal traits					
M	4.52	4.40	1.62	103	0.108
SD	0.35	0.39			

Note. ^an = 40. ^bn = 65. * p < .01.

Students

The relationship between the age of the students and their ratings of importance for the six categories was explored using the Pearson Product Moment Correlation Coefficient. No significant effects for age were found. The results of the analysis of between group differences in ratings of importance presented in the previous section showed that the PTS group was significantly different from the OTF, PTF and PTS groups. In an effort to seek an explanation for this difference a t-test was employed to compare the ratings of importance of third and fourth year P.T. students (see Table 17). The analysis of the results revealed significant differences between third and fourth year students in their ratings of the competencies in the teaching behaviours category ($p < .01$) and in the evaluation behaviours category ($p < .01$). In both categories the fourth year P.T. students had lower mean ratings than the third year P.T. students. While no other significant differences were found, the mean ratings of the fourth year P.T. students were lower for all of the categories except for the personal traits category, for which the fourth year students gave higher ratings. The ratings of importance by category for the third and fourth year OTS group revealed no significant differences. In contrast to the PTS group, the fourth year O.T. students rated the supervisory

Table 17

T-test Comparing Ratings of Third and Fourth Year P.T. Students by Category

Category	Third year ^a	Fourth year ^b	t	df	p
Professional competence					
M	3.75	3.56	1.01	31	0.320
SD	0.61	0.42			
Teaching behaviours					
M	3.98	3.61	2.90	31	0.007*
SD	0.34	0.38			
Supervisory behaviours					
M	4.36	4.34	0.19	31	0.849
SD	0.38	0.27			
Communication behaviours					
M	4.48	4.47	0.10	31	0.918
SD	0.43	0.31			
Evaluation behaviours					
M	4.05	3.60	2.81	31	0.009*
SD	0.42	0.50			
Personal traits					
M	4.08	4.25	-0.97	31	0.340
SD	0.62	0.35			

Note. $a_n = 16$. $b_n = 17$. $*p < .01$

behaviours, communication behaviours, evaluation behaviours and the personal traits categories higher than third year O.T. students.

Fieldwork Instructors and Students

While there were no significant correlations between age and ratings of importance for the six categories when fieldwork instructors ($n = 104$) and students ($n = 66$) were analysed separately, significant correlations were evident in three of the categories when the data were combined ($n = 170$). The categories were: (a) professional competence ($r = 0.21$; $p < .01$), (b) teaching behaviours ($r = 0.22$; $p < .01$), and (c) evaluation behaviours ($r = 0.27$; $p < .01$). Although the correlations are low, there appears to be a significant relationship between age and ratings of importance for the categories.

CHAPTER 5

Discussion and Implications

The purposes of this study were two-fold: (a) to derive a list of fieldwork instructor competencies from the literature in the health professions, and (b) to determine which competency categories and which competencies were perceived by O.T. and P.T. fieldwork instructors, and by O.T. and P.T. students to be important in contributing to the effectiveness of a student's fieldwork experience. A review of the literature suggested that if the respondents' ratings of the importance of the categories and the competencies were similar for all groups, they could be used to guide the development of educational programs to prepare fieldwork instructors in each profession for their role. Central to this belief is the assumption that a relationship exists between the concepts of competence and competencies, and program development. The postulates which link these concepts were examined in Chapter 2.

Discussion of the results is centred around the important competency categories and competencies identified in this research, their relationship to previous research, and their usefulness in guiding the future development of educational programs for fieldwork instructors. The headings used to provide a framework for the discussion are similar to those which guided the presentation of the results. They are: (a) characteristics

of the respondents, (b) validation and importance of the categories, (c) important competencies, (d) group differences, and (e) the relationship between personal variables and ratings of importance. Differences between the groups which are evident from the descriptive data will be discussed in (b) and (c), while differences which emerge from the inferential analyses will be examined in (d). Implications of the results follow the discussion.

Characteristics of Respondents

The descriptive statistics on the age and sex of the respondents in all groups produced no unexpected results. The ratio of male to female fieldwork instructors parallels the ratio of males to females in each profession. A higher proportion of males in each of the student groups reflects the increases in the number of men entering the University of British Columbia programs in O.T. and P.T. It is apparent from the wide range in the ages of the fieldwork instructors that therapists instruct students from graduation to retirement. The age ranges of the students is indicative of the higher numbers of mature students entering these professions. Third year and fourth year students in O.T. and P.T. were equally well represented among the respondents.

Of the remaining demographic findings related to the fieldwork instructors -- education, type of practice setting, type of client problems encountered by respondents, years of experience since graduation, number of students supervised, and fieldwork preparation programs attended -- the majority of the findings were anticipated. The educational qualifications of the respondents, the types of settings in which they practice, and their years of experience since graduation reflect the educational and employment patterns of O.T.'s and P.T.'s in British Columbia (British Columbia Society of Occupational Therapists, 1987; Physiotherapy Association of British Columbia, 1986; Health Manpower Research Unit, 1985).

Students in the O.T. and P.T. programs at the University of British Columbia are required to complete fieldwork experiences which focus on the variety of client problems they will encounter following graduation. The population of fieldwork instructors included all therapists who had instructed O.T. and P.T. students from the University of British Columbia between May 1986 and February 1987. The range of problems encountered by the fieldwork instructors parallels the assignment of students to fieldwork experience areas during this period.

The numbers of students instructed by the OTF and PTF respondents in each of the four groups (0-5 students, 6-10 students, 11-15 students, and 16 or more students) was

disproportionate between the professions. The study findings show that the OTF respondents are more experienced fieldwork instructors than the PTF respondents. Physical therapists outnumber O.T.'s in British Columbia by a margin of 3:1 (Health Manpower Research Unit, 1985). The lower number of O.T.'s may account for the higher numbers of students instructed by O.T.'s. That is, each O.T. may be required to instruct students more frequently than P.T.'s to ensure that all of the students receive the necessary fieldwork experience prior to graduation.

When the number of students instructed by OTF and PTF respondents was compared to the age and years of experience of these respondents, the data indicated that P.T. students were more likely to be assigned to fieldwork instructors who were younger and who had less experience. There are several possible reasons for this trend. The older and more experienced PTF respondents may have administrative responsibilities which limit the time they have available to instruct students. However, when shortages of fieldwork experiences do occur, for example, in the summer months, they may feel more pressure to instruct students. Secondly, although the geographic location of respondents was not requested in this study, it is possible that the eight more experienced P.T.'s who had instructed five or fewer students worked in a centre or city to which a smaller number of students were assigned. Variations in the procedures for assigning

students to instructors may also be a factor. In some affiliating agencies, policy may dictate that students are considered to be the responsibility of the younger, less experienced therapists. None of these hypotheses can be confirmed without further research.

A higher proportion of OTF respondents had attended fieldwork instructor preparation workshops (see Table 5). While courses have been offered at least once annually for the last five years in O.T., courses have not been available in P.T. for the last 2-3 years. Lack of access to workshops in British Columbia in recent years is likely to be the primary reason for the discrepancy between the OTF and PTF groups.

Validation and Importance of the Categories

The data analysis related to the competency categories (see Table 6) supported the validity of the pre-determined categories. This validation of the categories offers program designers some assurance that the competencies assigned to each category accurately represent the behaviours in the category. The high loading of most of the competencies on a one-factor solution, in the factor analysis and subsequent varimax rotation is consistent with the findings of Meleca et al. (1981, 1983).

The ratings of the importance of the categories of competence in this study appear to be related to previous

research findings in O.T. and P.T. (Christie et al., 1985a; Emery, 1984; Moore & Perry, 1976), and in medicine (Irby & Rakestraw, 1981). When all data were combined the category of communication behaviours emerged as most important in this research (see Table 8). However, when the data was analysed for each group, a higher proportion of the top 10 ranked competencies for students were in the category of supervisory behaviours (see Table 7). In the study by Christie et al. (1985a), supervisory behaviours were most frequently mentioned as the most critical components of a fieldwork experience, by O.T. fieldwork instructors and students. Communication behaviours were considered to be of secondary importance. The results of Moore and Perry's study (1976) of P.T. fieldwork instructors produced identical results. Emery's (1984) finding that P.T. students rated communication behaviours as most important, differed from the ratings of students in this study. However, the communication behaviours category which Emery used, included behaviours from the categories of communication and supervisory behaviours which were used in this research. Although the differences between instructor and student ratings of the most important category found in this study were not apparent in previous research, the categories of supervision and communication behaviours were consistently rated as highly

important to a student's fieldwork experience (see Figures 2 and 3).

The low rating of importance of the professional competence category (see Tables 7 and 8) appears to confirm the findings of previous researchers (Emery, 1984; Irby & Rakestraw, 1981; Romberg, 1984). While professional competence behaviours are important in contributing to an effective fieldwork experience, it is clear that they are perceived to be less important than the other competency categories by the respondents in this study. It is possible that respondents may place less importance on the competencies in the professional competence category because they assume that all fieldwork instructors meet basic professional competence requirements. The findings from this study regarding the most and least important categories of fieldwork instructor behaviours appear to support the trends identified in earlier O.T. and P.T. studies.

Important Competencies

With the exception of the competencies which were classified as distractors, the study results appear to confirm that the competencies which were derived from the literature were perceived by the respondents to be important in contributing to the effectiveness of a student's fieldwork experience.

Appendix C shows that the ratings of importance by each group followed a similar pattern. That is, the ratings on each competency tended to be high, medium or low across all groups. Although the ratings of the OTF group were closer to the PTF group, and the OTS group ratings were more similar to the PTS group on some competencies, it was apparent that the PTS group ratings were generally lower than the OTF, PTF and OTS groups.

It has been reported that there were ten competencies in which the differences between the OTS and PTS groups exceeded 0.50 and that six of these included content related to the objectives for the fieldwork experience. These competencies were classified as teaching behaviours. The ratings of the OTF, PTF and OTS groups were higher than the PTS group on five of these six competencies. These five competencies stated that fieldwork objectives should be consistent with university goals for fieldwork, be able to be accomplished in the time available, be compatible with the student evaluation form; and should specify the knowledge, skills and attitudes to be acquired during the fieldwork experience. Although fieldwork instructors may rate these competencies more highly because they provide structure and organisation to the fieldwork experience, all of the students may not share this view. Fieldwork objectives have been developed and are used to guide the majority of O.T. fieldwork experiences (J. O'Callaghan, personal communication, April 8, 1987). In

P.T., fieldwork objectives are being developed in many affiliating agencies but as yet are not in frequent use (L. Botman, personal communication, April 8, 1987). For this reason, it is conceivable that the P.T. students' lack of experience in using objectives, may have contributed to their lower ratings of these competencies.

Although the ratings of importance followed a similar pattern among the groups, the analysis of the competencies ranked in the top 10 by each group revealed some differences between fieldwork instructors and students. The competencies ranked highly by the fieldwork instructors, such as make specific suggestions for improvement and encourage student questions opinions and requests for assistance, seem to be more objective than subjective. That is, they are the type of competencies which would be recommended as requirements of sound educational practice. In contrast, competencies ranked highly by students appear to be more subjective and relate to the interpersonal dynamics between the fieldwork instructor and the student. Observe students' performance in such a way as to not intimidate the student, and supervise the student without taking over, unless absolutely necessary, are examples of the competencies which illustrate this trend.

The finding that the ratings of importance between fieldwork instructors and students, varies according to the content of the

competency is not surprising. Each of the groups can be expected to have different perspectives on the degree of importance of each competency in contributing to the effectiveness of a student's fieldwork experience. The instructors' examine the competencies from the perspective of service provider (where the service is fieldwork instruction) whereas the students' consider each competency from the perspective of the recipient or consumer of the service. Other factors such as whether the respondents' experiences of fieldwork were negative or positive are likely to have effected their ratings. The influence of other personal variables on ratings of importance is discussed in a later section of the Chapter.

When the competencies which were ranked in the top 10 by the groups in this study are compared to those competencies which have been identified as most important in past research, similarities are evident. The inclusion of several competencies related to the provision of feedback is consistent with the majority of the previous research (Brown, 1981; Christie et al., 1985b; Emery, 1984; Moore & Perry, 1976; O'Shea & Parsons, 1979; Petzel et al., 1982; Stritter et al., 1975). Other competencies which had been found to be highly important by four or more researchers -- discussing issues openly with the student, being accessible to students and demonstrating positive regard for the student -- were also ranked in the top 10 in this study (Christie

et al., 1985b; Emery, 1984; McLeod, 1986; Moore & Perry, 1976; Romberg, 1984; Stritter et al., 1975; Tompson, 1986).

Group Differences

The descriptive data related to the differences in group ratings of the importance of the competency categories and competencies has been discussed. This section will discuss the appropriateness of the chosen inferential statistics for the data, and the results which emerged from the analyses.

The identification of any main and/or interaction effects between ratings of importance and the different combinations of groups used in this study, was determined by a two-way factorial ANOVA and a three-way factorial ANOVA, and a MANOVA. Use of these methods usually requires that the assumptions underlying the use of ANOVA -- homogeneity of variance and normality of the distribution -- are not violated. Examination of the data indicated that the variance between the groups on each of the categories were similar. No radical departures from homogeneity were evident for any of the samples. Although it has been noted that the data were negatively skewed, Ferguson (1981) and Borg and Gall (1983) indicate that reasonable departures from the assumption of normality can occur without seriously affecting the validity of the inferences drawn from the data. When the distribution of the data is not normal the data can be

transformed to meet this requirement (Ferguson, 1981). The raw data used for the two-way and three-way ANOVA's were the mean ratings for the six categories in each group. Due to the fact that the raw data were aggregated scores, further transformation of the scores to meet normality requirements was judged to be inappropriate. Furthermore, Jones (1978) found no evidence that the Type I error rate was higher for skewed distributions when scaled data (rather than continuous data) were analysed using ANOVA procedures.

Although significant differences were found in the Core Groups x Categories ANOVA (see Table 13), and in the Fieldwork Instructors and Students x Professions x Categories ANOVA (see Table 14), the subsequent multiple comparison tests produced only two consistent and meaningful findings. The main effect from these analyses was that the ratings of the PTS group differed significantly from the OTF and PTF groups ($p < .05$). This finding was also supported by the MANOVA results. Differences between the core groups, and between fieldwork instructors and students were not apparent for the categories of supervisory and communication behaviours (categories three and four, respectively). The fact that competencies in these categories were perceived to be more important in contributing to the effectiveness of a student's fieldwork experience is likely to have contributed to this result.

Some possible reasons for the PTS differences in ratings in the teaching behaviours category were offered in the preceding section of this Chapter. A further review of the differences between the PTS group and the other core groups in the categories of professional competence, evaluation behaviours and personal traits, provides only two possible explanations for the lower PTS ratings of the competencies in these categories. The lower PTS ratings may be due to the instructions on the questionnaire. Section B of the questionnaire (see Appendix A, Section B) asked respondents to attempt to use the full range of the scale in differentiating the degree of importance of each competency. The P.T. students may have taken more care to complete the questionnaire according to the instructions. If the PTS respondents were not influenced to a greater degree than other respondents by the instructions on the questionnaire, their perceptions of the importance of the competencies in these categories may actually be lower than those of the other core groups. Although there are significant differences between the PTS group ratings and one or more of the other core groups in four categories, the pattern of the responses is similar (see Figure 2). The small differences in the mean ratings between the groups do not appear to effect the trend towards high, moderate or low ratings of the competencies among all of the groups.

The Relationship between Personal Variables and Ratings of Importance

The analyses revealed that four personal variables appeared to influence the ratings of importance for one or more of the respondent groups. Age, years of experience, attendance at fieldwork preparation workshops, and student year were the variables which showed a relationship to the ratings of importance.

The ages of all respondents, and the years of experience of the fieldwork instructors correlated significantly with the ratings of importance by category. Although the correlations were all significant to the $p < .01$ level, the correlations were low ($r = 0.20$ to $r = 0.27$). The significant correlations for age and years of experience were in the categories of professional competence, teaching behaviours and evaluation behaviours. It is conceivable that as an instructor ages and acquires more experience, that perceptions of importance in these areas might change. While a correlation between age and ratings of importance is evident, it may be due to the fact that the PTS group were younger and had lower ratings than other groups. The ratings of the competencies in the three most important categories (communication behaviours, supervisory behaviours, and personal traits) appear to be less affected by the age and experience of the respondents.

When the ratings of the OTF and PTF respondents who had and had not attended fieldwork preparation programs were compared a significant difference ($p < .01$) was found in the category of evaluation behaviours (see Table 16). Twenty-six of the 40 respondents who had attended a fieldwork preparation program, had attended the 1-day workshops offered by the School of Rehabilitation Medicine at the University of British Columbia. These programs included content related to the teaching behaviours, supervisory behaviours, and evaluation behaviours categories. The higher ratings of the respondents who attended the programs in the teaching behaviours and evaluation behaviours categories may have been influenced by their participation in the programs. Further pre- and post-testing of the workshop participants would be necessary to confirm this trend.

Although no significant differences were evident in the ratings of importance for third and fourth year O.T. students, the ratings of third and fourth year P.T. students differed significantly ($p < 0.1$) in the teaching behaviours and evaluation behaviours categories (see Table 17). The variance in the fourth year PTS ratings in all categories suggests that the lower ratings of the fourth year students represent a general trend among fourth year students. If "deviant" ratings of several students had contributed to this effect, the variance would be expected to be greater among the fourth year students. The

variances in the categories are similar to those of the third year PTS group. Fourth year PTS ratings in the teaching and evaluation behaviours categories are lower than those of the third year PTS group. Two possible explanations for this pattern are presented. The additional year of fieldwork experience may change students' perceptions of the importance of the competencies in these categories. Lower ratings by the fourth year students may be attributed to the experiences of this group of students, but may not be apparent in future fourth year PTS groups. Further research would be necessary to confirm or refute these findings, and to explore the reasons for the differences in the ratings.

Implications

The findings related to the validation and importance of the competency categories, and the degree of importance of the competencies in contributing to a student's fieldwork experience have several implications for fieldwork education in O.T. and P.T.

Validation of the pre-determined categories provides a legitimate framework for the organisation of a standardized hierarchy of fieldwork instructor preparation programs. Although educational programs are offered by both professions to ensure the continuing professional competence of therapists, at least

four of the remaining five categories -- teaching behaviours, supervisory behaviours, communication behaviours and evaluation behaviours -- provide distinct content areas in which instructor workshops could be developed. The category of personal characteristics or traits includes competencies which are thought to be less responsive to change, and consequently less affected by educational programs (Petzel et al., 1982). The hierarchy of importance of the categories (i.e. most important to least important) will also be useful in setting priorities for fieldwork instructor preparation programs.

All of the competencies except the nine distractors were perceived to be of moderate to high importance in contributing to the effectiveness of a student's fieldwork experience. The confirmation by O.T. and P.T. fieldwork instructors and students of the importance of the competencies which were derived from the literature, justifies continued use of the competencies in O.T. and P.T. education.

There are a variety of ways in which use of the competencies could benefit fieldwork instructors and/or students' fieldwork experiences. The competencies could form the basis of a questionnaire to assess the educational needs of fieldwork instructors. A clear description of the degree to which fieldwork instructors are competent in their role is necessary to guide educational planning. Development of a self-evaluation

tool based on the competencies would enable the fieldwork instructors to assess their own learning needs. In this form, the list of competencies could be used by fieldwork instructors as a way of checking that they have carried out the tasks associated with their role. Use of the competencies to review and revise the forms used by students to evaluate fieldwork instructors is an additional benefit arising from this research.

While a number of benefits of this research are evident, the literature suggests that the most important outcome will be the provision of clearly defined competencies to guide the development of standardized educational programs for fieldwork instructors in O.T. and P.T.

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APPENDICES

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APPENDIX A

QUESTIONNAIRE ON FIELDWORK INSTRUCTOR TRAITS AND BEHAVIOURS

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Appendix A: Section A - OTF Respondents

FIELDWORK INSTRUCTOR TRAITS AND BEHAVIOURS

INSTRUCTIONS: Please read all information provided before answering the questions in each section.

Definitions: **Fieldwork Instructor** - an occupational therapist or physical therapist who is assigned responsibility for teaching, supervising and evaluating a student in addition to patient/client care activities.
Fieldwork - the time students spend in an accredited clinical setting/facility applying their theoretical knowledge to patient/client assessment and intervention.

SECTION A: DEMOGRAPHIC INFORMATION

INSTRUCTIONS: Please check the most suitable answer to each question.

1. Age - please state in years: _____
2. Sex

Male	_____
Female	_____
3. Highest level of education attained:

Diploma in O.T. or P.T.	_____
Diploma in O.T. & P.T.	_____
Bachelor's degree in O.T. or P.T.	_____
Bachelor's degree in O.T. & P.T.	_____
Master's degree	_____
Other, please state	_____
4. Type of setting in which you have practised **most** frequently this year (check only one):

Inpatient program - acute care or rehabilitation	_____
Inpatient program - long term care	_____
Outpatient, day program or community service	_____
Other, please state	_____

 SECTION A: DEMOGRAPHIC INFORMATION

5. Most common category of patient/client problems in your practice this year (check only one):

Adult psychiatry _____
 Paediatric psychiatry _____
 Adult - physical dysfunction _____
 Paediatric - physical dysfunction _____
 Other, Please state _____

6. Number of years you have practised occupational therapy since graduation (state number of years): _____

7. Number of fieldwork students you have instructed since graduation:

0 - 5 students _____
 6 - 10 students _____
 11 - 15 students _____
 16 + students _____

8. a) Have you attended fieldwork instructor preparation programs in the last five years?

Yes _____ ----> Please complete question 8 (b)

No _____ ----> Please proceed to Section B, of the questionnaire

- b) Fieldwork instructor preparation programs attended in the last five years (check those which apply):

A 1-day (or a 2, 1/2 day) workshop offered by the School of Rehabilitation Medicine (SRM) [at the University of British Columbia (UBC), in Victoria or in Penticton] _____

A 6 week course offered by the SRM, at UBC (1983) _____

A 1-2 hour inservice session offered by the SRM _____

A Series of 2 or 3 inservice sessions offered by the SRM _____

Other, please state _____

Appendix A: Section A - PTF Respondents

FIELDWORK INSTRUCTOR TRAITS AND BEHAVIOURS

INSTRUCTIONS: Please read all information provided before answering the questions in each section.

Definitions: **Fieldwork Instructor** - an occupational therapist or physical therapist who is assigned responsibility for teaching, supervising and evaluating a student in addition to patient/client care activities.
Fieldwork - the time students spend in an accredited clinical setting/facility applying their theoretical knowledge to patient/client assessment and intervention.

SECTION A: DEMOGRAPHIC INFORMATION

INSTRUCTIONS: Please check the most suitable answer to each question.

1. Age - please state in years: _____
2. Sex

Male	_____
Female	_____
3. Highest level of education attained:

Diploma in O.T. or P.T.	_____
Diploma in O.T. & P.T.	_____
Bachelor's degree in O.T. or P.T.	_____
Bachelor's degree in O.T. & P.T.	_____
Master's degree	_____
Other, please state	_____
4. Type of setting in which you have practised **most** frequently this year (check only one):

Inpatient program - acute care or rehabilitation	_____
Inpatient program - long term care	_____
Outpatient, day program or community service	_____
Other, please state	_____

 SECTION A: DEMOGRAPHIC INFORMATION

5. Most common category of patient/client problems in your practice this year (check only one):

Obstetrics	_____
Adult, neurology	_____
Adult, cardio-respiratory	_____
Adult, orthopaedics/musculo-skeletal	_____
Paediatric, neurology	_____
Paediatric, cardio-respiratory	_____
Paediatric, orthopaedics/musculo-skeletal	_____
Other, Please state	_____

6. Number of years you have practised physical therapy since graduation (state number of years): _____

7. Number of fieldwork students you have instructed since graduation:

0 - 5 students	_____
6 - 10 students	_____
11 - 15 students	_____
16 + students	_____

8. a) Have you attended fieldwork instructor preparation programs in the last five years:

Yes _____ ----> Please complete question 8 (b)

No _____ ----> Please proceed to Section B, of the questionnaire

- b) Fieldwork instructor preparation programs attended in the last five years (check those which apply):

A 1-day (or a 2, 1/2 day) workshop offered by the School of Rehabilitation Medicine (SRM) [at the University of British Columbia (UBC) or in Victoria] _____

A 1 - 2 hour inservice session offered by the SRM _____

A Series of 2 or 3 inservice sessions offered by the SRM _____

Other, please state _____

Appendix A: Section A - OTS and PTS Respondents

FIELDWORK INSTRUCTOR TRAITS AND BEHAVIOURS

INSTRUCTIONS: Please read all information provided before answering the questions in each section.

Definitions: **Fieldwork Instructor** - an occupational therapist or physical therapist who is assigned responsibility for teaching, supervising and evaluating a student in addition to patient/client care activities.
Fieldwork - the time students spend in an accredited clinical setting/facility applying their theoretical knowledge to patient/client assessment and intervention.

SECTION A: DEMOGRAPHIC INFORMATION

INSTRUCTIONS: Please check the most suitable answer to each question.

1. Age - please state in years: _____
2. Sex Male _____
Female _____
3. At the present time I am registered as a (check one which applies):

3rd year O.T. student	_____
4th year O.T. student	_____
3rd year P.T. student	_____
4th year P.T. student	_____

PLEASE PROCEED TO SECTION B

Appendix A: Section B - All Respondents

SECTION B: FIELDWORK INSTRUCTOR TRAITS AND BEHAVIOURS

This section of the questionnaire lists traits and behaviours which describe the broad role of therapists as fieldwork instructors. You are asked to rate the degree to which each trait or behaviour contributes to the effectiveness of a student's fieldwork experience. Specifically "To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience?"

EXAMPLE:

'Present formal lectures on important clinical topics'	of low							of extreme
	Importance	1	2	3	4	5		Importance

If you gave this behaviour a rating of 5, this would mean that you perceive that it is **extremely important** in contributing to the effectiveness of a student's fieldwork experience.

If you gave this behaviour a rating of 1, this would mean that you perceive that it has **low importance** in contributing to the effectiveness of student's fieldwork experience.

If you believe that that this behaviour is neither extremely important nor of low importance you can select the rating (2, 3 or 4) which best reflects your opinion of its **degree of importance** in contributing to the effectiveness of a student's fieldwork experience.

You should attempt to use the full range of the scale in differentiating the degree of importance of each trait and behaviour, in order to clearly identify the traits and behaviours which you believe are extremely important in contributing to the effectiveness of student's fieldwork experience.

Some traits or behaviours listed on the form are similar to each other, but they are **not** identical. Make your rating of each trait or behaviour a separate and independent judgement. Your first impressions, or your immediate "feelings" about the rating for each trait or behaviour will be the best guide for your responses.

Please proceed to Section B of the questionnaire.

 SECTION B: FIELDWORK INSTRUCTOR TRAITS AND BEHAVIOURS

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of importance)

TRAITS OR BEHAVIOURS							
1. Summarize major points at the end of an instructional session	of low importance	1	2	3	4	5	of extreme importance
2. Explain clearly, the basis for own actions	of low importance	1	2	3	4	5	of extreme importance
3. Display flexibility and adaptability	of low importance	1	2	3	4	5	of extreme importance
4. Demonstrate leadership among peers	of low importance	1	2	3	4	5	of extreme importance
5. Relate student's academic knowledge to clinical practice	of low importance	1	2	3	4	5	of extreme importance
6. Admit limitations and mistakes honestly	of low importance	1	2	3	4	5	of extreme importance
7. Make specific suggestions for improvement of performance	of low importance	1	2	3	4	5	of extreme importance
8. Apply basic testing and evaluation principles when evaluating students	of low importance	1	2	3	4	5	of extreme importance
9. Formulate specific, clearly stated fieldwork objectives with assistance from University program or other therapists as necessary	of low importance	1	2	3	4	5	of extreme importance
10. Orient student to clinical setting/facility	of low importance	1	2	3	4	5	of extreme importance
11. Evaluate the effectiveness of the fieldwork program during and at the end of each fieldwork experience	of low importance	1	2	3	4	5	of extreme importance
12. Sequence instruction so that observation of therapist precedes student's supervised practice	of low importance	1	2	3	4	5	of extreme importance
13. Provide feedback to the student in private except when immediate feedback is critical to patient care	of low importance	1	2	3	4	5	of extreme importance

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of importance)

TRAITS OR BEHAVIOURS						
14. Request feedback from the student regarding the fieldwork program	of low importance	1	2	3	4	5 of extreme importance
15. Manage time well	of low importance	1	2	3	4	5 of extreme importance
16. Cite up-to-date references which are important to area of practice	of low importance	1	2	3	4	5 of extreme importance
17. Encourage student to accept responsibility for own learning	of low importance	1	2	3	4	5 of extreme importance
18. Observe student's performance in such a way as not to intimidate the student	of low importance	1	2	3	4	5 of extreme importance
19. Chair staff meetings	of low importance	1	2	3	4	5 of extreme importance
20. Use up-to-date client/patient assessment and intervention procedures	of low importance	1	2	3	4	5 of extreme importance
21. Provide feedback without belittling student	of low importance	1	2	3	4	5 of extreme importance
22. Remain readily accessible to student(s) and/or assign alternate resource person	of low importance	1	2	3	4	5 of extreme importance
23. Arrange time for interaction with each student daily	of low importance	1	2	3	4	5 of extreme importance
24. Present information clearly and succinctly	of low importance	1	2	3	4	5 of extreme importance
25. Demonstrate sensitivity to the needs of others	of low importance	1	2	3	4	5 of extreme importance
26. Provide opportunities for supervised and unsupervised practice appropriate to the student's level of fieldwork experience	of low importance	1	2	3	4	5 of extreme importance
27. Encourage active participation in discussions/client conferences	of low importance	1	2	3	4	5 of extreme importance

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of Importance)

TRAITS OR BEHAVIOURS						
28. Base assessment of student performance on the degree to which the fieldwork objectives have been met	of low Importance	1	2	3	4	5 of extreme Importance
29. Provide frequent feedback on student performance	of low Importance	1	2	3	4	5 of extreme Importance
30. Draw information from related fields e.g. sociology, physiology ... In considering patient/client problems	of low Importance	1	2	3	4	5 of extreme Importance
31. Develop logical strategies for resolving student difficulties	of low Importance	1	2	3	4	5 of extreme Importance
32. Display critical and analytical thinking	of low Importance	1	2	3	4	5 of extreme Importance
33. Present student as a 'professional' to clients/patients, and all staff	of low Importance	1	2	3	4	5 of extreme Importance
34. Gear instruction to student's level of knowledge	of low Importance	1	2	3	4	5 of extreme Importance
35. Frequently observe student's progress toward objectives	of low Importance	1	2	3	4	5 of extreme Importance
36. Show empathy for others	of low Importance	1	2	3	4	5 of extreme Importance
37. Revise fieldwork program based on results of evaluation	of low Importance	1	2	3	4	5 of extreme Importance
38. Formulate fieldwork objectives which focus on the important clinical activities of the fieldwork instructor and match professional entry-level requirements of the profession	of low Importance	1	2	3	4	5 of extreme Importance
39. Answer questions carefully and precisely	of low Importance	1	2	3	4	5 of extreme Importance
40. Provides feedback related to all important areas of performance	of low Importance	1	2	3	4	5 of extreme Importance
41. Maintain an ongoing record of assessments of student performance	of low Importance	1	2	3	4	5 of extreme Importance

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of importance)

TRAITS OR BEHAVIOURS						
42. Take responsibility for own actions	of low importance	1	2	3	4	5 of extreme importance
43. Interact confidently and effectively with colleagues, student(s) and other members of the health team	of low importance	1	2	3	4	5 of extreme importance
44. Demonstrate positive regard for the student(s)	of low importance	1	2	3	4	5 of extreme importance
45. Adopt appropriate professional role (as a therapist) on health team	of low importance	1	2	3	4	5 of extreme importance
46. Describe the usefulness of common audio-visual equipment in patient education programs e.g. overhead projector, slides	of low importance	1	2	3	4	5 of extreme importance
47. Adopt a non-defensive stance in receiving feedback from others	of low importance	1	2	3	4	5 of extreme importance
48. Formulate fieldwork objectives which are consistent with university goals for fieldwork	of low importance	1	2	3	4	5 of extreme importance
49. Demonstrate self-control and patience	of low importance	1	2	3	4	5 of extreme importance
50. Select a variety of suitable clients/patients for student(s) contact	of low importance	1	2	3	4	5 of extreme importance
51. Point out weaknesses in student performance	of low importance	1	2	3	4	5 of extreme importance
52. Supervise student(s) without taking over, unless absolutely necessary	of low importance	1	2	3	4	5 of extreme importance
53. Question student(s) to elicit reasons underlying thoughts or actions	of low importance	1	2	3	4	5 of extreme importance
54. Review evaluation form formally with the student(s) at mid-term, and at the end of the fieldwork experience	of low importance	1	2	3	4	5 of extreme importance
55. Demonstrate confidence as a professional	of low importance	1	2	3	4	5 of extreme importance

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of importance)

TRAITS OR BEHAVIOURS							
56. Demonstrate knowledge, skills and attitudes that are to be developed by the student(s)	of low Importance	1	2	3	4	5	of extreme Importance
57. Present Inservice programs that are well organised	of low Importance	1	2	3	4	5	of extreme Importance
58. Display a sense of humor	of low Importance	1	2	3	4	5	of extreme Importance
59. Negotiate a learning contract with each student, based on the written fieldwork objectives and the student's past experience.	of low Importance	1	2	3	4	5	of extreme Importance
60. Formulate fieldwork objectives which specify the knowledge, skills and attitudes to be acquired during the fieldwork experience	of low Importance	1	2	3	4	5	of extreme Importance
61. Present information in an organised manner	of low Importance	1	2	3	4	5	of extreme Importance
62. Formulate fieldwork objectives which are realistic given the academic level and past experience of the student(s)	of low Importance	1	2	3	4	5	of extreme Importance
63. Assess student(s) knowledge and assign learning tasks accordingly	of low Importance	1	2	3	4	5	of extreme Importance
64. Grade the fieldwork program to build student(s) skills	of low Importance	1	2	3	4	5	of extreme Importance
65. Administer client/patient assessments and interventions competently	of low Importance	1	2	3	4	5	of extreme Importance
66. Facilitate independent learning (for example, direct student to useful references, suggest community resources for review, refer student to policy manuals, ... etc.)	of low Importance	1	2	3	4	5	of extreme Importance
67. Approach teaching with enthusiasm	of low Importance	1	2	3	4	5	of extreme Importance

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of Importance)

TRAITS OR BEHAVIOURS						
68. Co-ordinate client/patient, administrative and student-related activities within clinical setting/facility	of low Importance	1	2	3	4	5 of extreme Importance
69. Record patient/client attendance statistics	of low Importance	1	2	3	4	5 of extreme Importance
70. Demonstrate dynamism and energy in the fieldwork instructor role	of low Importance	1	2	3	4	5 of extreme Importance
71. Encourage student questions, opinions and requests for assistance	of low Importance	1	2	3	4	5 of extreme Importance
72. Stimulate student's interest in, and enthusiasm for the profession	of low Importance	1	2	3	4	5 of extreme Importance
73. Provide constructive feedback	of low Importance	1	2	3	4	5 of extreme Importance
74. Acknowledge student outside work environment	of low Importance	1	2	3	4	5 of extreme Importance
75. Counsel student(s) in difficulty	of low Importance	1	2	3	4	5 of extreme Importance
76. Listen attentively to student(s)	of low Importance	1	2	3	4	5 of extreme Importance
77. Modify instructional plan in response to students' changing needs (as these are perceived by fieldwork instructor and student)	of low Importance	1	2	3	4	5 of extreme Importance
78. Provide lectures on important clinical topics	of low Importance	1	2	3	4	5 of extreme Importance
79. Utilize a supervisory approach which is appropriate to the student(s) learning style	of low Importance	1	2	3	4	5 of extreme Importance
80. Provide feedback which is consistent	of low Importance	1	2	3	4	5 of extreme Importance
81. Allow the student progressive independence	of low Importance	1	2	3	4	5 of extreme Importance

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of importance)

TRAITS OR BEHAVIOURS						
82. Provide positive feedback on performance	of low importance	1	2	3	4	5 of extreme importance
83. Suggest ways in which student can monitor own progress	of low importance	1	2	3	4	5 of extreme importance
84. Document evaluation accurately	of low importance	1	2	3	4	5 of extreme importance
85. Communicate with student(s) in a non-threatening manner	of low importance	1	2	3	4	5 of extreme importance
86. Provide instruction related to fieldwork objectives	of low importance	1	2	3	4	5 of extreme importance
87. Ask questions designed to foster development of problem-solving skills	of low importance	1	2	3	4	5 of extreme importance
88. Select methods for assessing the degree to which the fieldwork objectives have been reached	of low importance	1	2	3	4	5 of extreme importance
89. Operate audio-visual equipment correctly	of low importance	1	2	3	4	5 of extreme importance
90. Formulate fieldwork objectives which can be accomplished realistically in the time available	of low importance	1	2	3	4	5 of extreme importance
91. Utilize a supervisory approach which is appropriate to the student's level of fieldwork experience	of low importance	1	2	3	4	5 of extreme importance
92. Assist the student in preparing to address new or difficult practice problems	of low importance	1	2	3	4	5 of extreme importance
83. Provide support and encouragement for student to reach optimal level of performance	of low importance	1	2	3	4	5 of extreme importance
94. Provide time for discussion and questions on a regular basis	of low importance	1	2	3	4	5 of extreme importance

To what **degree** is this fieldwork instructor trait or behaviour **important** in contributing to the **effectiveness** of a student's fieldwork experience? (Circle the number which best represents your perception of the degree of importance)

TRAITS OR BEHAVIOURS							
95. Arrange learning activities which challenge student(s) while maximizing their chances for success	of low importance	1	2	3	4	5	of extreme importance
96. Provide feedback immediately following student performance, where possible	of low importance	1	2	3	4	5	of extreme importance
97. Develop an instructional plan to meet objectives for the fieldwork experience	of low importance	1	2	3	4	5	of extreme importance
98. Relate the fieldwork objectives clearly to the University evaluation form	of low importance	1	2	3	4	5	of extreme importance
99. Apply current theories to practice	of low importance	1	2	3	4	5	of extreme importance
100. Prepare material to guide the student during the experience (for example, facility map, schedules of meetings, rounds, location of reference material, etc.)	of low importance	1	2	3	4	5	of extreme importance
101. Follow fieldwork procedures/policies established by the student's university program	of low importance	1	2	3	4	5	of extreme importance
102. Develop a plan for orienting the student(s) to the clinical setting/facility	of low importance	1	2	3	4	5	of extreme importance
103. Ensure that the student(s) has ample opportunity to practice activities which are to be evaluated	of low importance	1	2	3	4	5	of extreme importance
104. Establish an environment in which the student feels comfortable	of low importance	1	2	3	4	5	of extreme importance
105. Discuss issues with the student openly	of low importance	1	2	3	4	5	of extreme importance

THANK YOU FOR YOUR CO-OPERATION IN COMPLETING THIS QUESTIONNAIRE.

APPENDIX B

Competencies Listed by Category

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APPENDIX B

COMPETENCIES LISTED BY CATEGORYProfessional Competence

Demonstrate leadership among peers

Manage time well

Cite up-to-date references which are important to area of practice

Chair staff meetings

Use up-to-date client/patient assessment and intervention procedures

Draw information from related fields e.g. sociology, physiology.... in considering patient/client problems

Display critical and analytical thinking

Interact confidently and effectively with colleagues, student(s) and other members of the health team

Adopt appropriate professional role (as a therapist) on health team

Demonstrate knowledge, skills and attitudes that are to be developed by the student(s)

Administer client/patient assessments and interventions competently

Co-ordinate client/patient, administrative and student-related activities within clinical setting/facility

Record patient/client attendance statistics

Apply current theories to practice

Teaching Behaviours

Summarize major points at the end of an instructional session

Relate student's academic knowledge to clinical practice

Formulate specific, clearly stated fieldwork objectives with assistance from University program or other therapists as necessary

Orient student to clinical setting/facility

Sequence instruction so that observation of therapist precedes student's supervised practice

Encourage student to accept responsibility for own learning

Arrange time for interaction with each student daily

Present information clearly and succinctly

Provide opportunities for supervised and unsupervised practice appropriate to the student's level of fieldwork experience

Encourage active participation in discussions/client conferences

Gear instruction to student's level of knowledge

Revise fieldwork program based on results of evaluation

Formulate fieldwork objectives which focus on the important clinical activities of the fieldwork instructor and match professional entry-level requirements of the profession

Describe the usefulness of common audio-visual equipment in patient education programs e.g. overhead projector, slides

Select a variety of suitable clients/patients for student(s) contact

Assist the student in preparing to address new or difficult practice problems

Formulate fieldwork objectives which are consistent with university goals for fieldwork

Facilitate independent learning (for example, direct student to useful references, suggest community resources for review, refer student to policy manuals, ... etc.)

Negotiate a learning contract with each student, based on the written fieldwork objectives and the student's past experience

Formulate fieldwork objectives which specify the knowledge, skills and attitudes to be acquired during the fieldwork experience

Present inservice programs that are well organised

Present information in an organised manner

Formulate fieldwork objectives which are realistic given the academic level and past experience of the student(s)

Assess student(s) knowledge and assign learning tasks accordingly

Grade the fieldwork program to build student(s) skills

Modify instructional plan in response to students' changing needs (as these are perceived by fieldwork instructor and student)

Provide lectures on important clinical topics

Suggest ways in which student can monitor own progress

Provide time for discussion and questions on a regular basis

Provide instruction related to fieldwork objectives

Operate audio-visual equipment correctly

Formulate fieldwork objectives which can be accomplished realistically in the time available

Arrange learning activities which challenge student(s) while maximizing their chances for success

Relate the fieldwork objectives clearly to the University evaluation form

Prepare material to guide the student during the experience (for example, facility map, schedules of meetings, rounds, location of reference material, etc.)

Follow fieldwork procedures/policies established by the student's university program

Develop a plan for orienting the student(s) to the clinical setting/facility

Ensure that the student(s) has ample opportunity to practice activities which are to be evaluated

Develop an instructional plan to meet objectives for the fieldwork experience

Supervisory Behaviours

Provide feedback to the student in private except when immediate feedback is critical to patient care

Make specific suggestions for improvement of performance

Observe student's performance in such a way as not to intimidate the student

Remain readily accessible to student(s) and/or assign alternate resource person

Develop logical strategies for resolving student difficulties

Frequently observe student's progress toward objectives

Provide feedback related to all important areas of performance

Provide frequent feedback on student performance

Provide feedback immediately following student performance, where possible

Point out weaknesses in student performance

Supervise student(s) without taking over, unless absolutely necessary

Utilize a supervisory approach which is appropriate to the student(s) learning style

Provide feedback which is consistent

Allow the student progressive independence

Counsel student(s) in difficulty

Provide constructive feedback

Utilize a supervisory approach which is appropriate to the student's level of fieldwork experience

Provide positive feedback on performance

Communication Behaviours

Explain clearly, the basis for own actions

Provide feedback without belittling student

Discuss issues with the student openly

Answer questions carefully and precisely

Question student(s) to elicit reasons underlying thoughts or actions

Listen attentively to student(s)

Communicate with student(s) in a non-threatening manner

Ask questions designed to foster development of problem-solving skills

Encourage student questions, opinions and requests for assistance

Evaluation Behaviours

Apply basic testing and evaluation principles when evaluating students

Evaluate the effectiveness of the fieldwork program during and at the end of each fieldwork experience

Request feedback from the student regarding the fieldwork program

Maintain an ongoing record of assessments of student performance

Select methods for assessing the degree to which the fieldwork objectives have been reached

Base assessment of student performance on the degree to which the fieldwork objectives have been met

Document evaluation accurately

Review evaluation form formally with the student(s) at mid-term, and at the end of the fieldwork experience

Personal characteristics/traits

Admit limitations and mistakes honestly

Display flexibility and adaptability

Demonstrate sensitivity to the needs of others

Show empathy for others

Present student as a 'professional' to clients/patients, and all staff

Approach teaching with enthusiasm

Demonstrate confidence as a professional

Adopt a non-defensive stance in receiving feedback from others

Demonstrate self-control and patience

Demonstrate positive regard for the student(s)

Take responsibility for own actions

Display a sense of humor

Provide support and encouragement for student to reach optimal level of performance

Establish an environment in which the student feels comfortable

Demonstrate dynamism and energy in the fieldwork instructor role

Acknowledge student outside work environment

Stimulate student's interest in, and enthusiasm for the profession

APPENDIX C

MEAN RATINGS OF IMPORTANCE FOR EACH OF THE 105 COMPETENCIES, BY GROUP(S)

<u>Section</u>	<u>Page</u>
1. OTF, PTF, OTS and PTS Groups	174
2. All instructors, All Students, All O.T.'s and All P.T.'s	177
3. All Subjects Combined	180

APPENDIX C

Section 1: OTF, PTF, OTS AND PTS GROUPS

	GROUP OTF		GROUP PTF		GROUP OTS		GROUP PTS	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN
Q1	49	4.3673	55	4.1636	33	4.0606	33	3.6970
Q2	49	4.5102	55	4.7091	33	4.6364	33	4.7273
Q3	50	4.5600	55	4.4909	33	4.4848	32	4.4063
Q4	49	3.1837	55	3.1455	33	3.2424	32	3.0625
Q5	50	4.3400	55	4.5818	33	4.3030	33	4.5455
Q6	50	4.5800	55	4.5455	33	4.5758	33	4.2121
Q7	50	4.7800	55	4.7636	33	4.7576	33	4.6061
Q8	48	3.7708	54	4.0556	33	3.5152	32	3.7188
Q9	50	4.3800	54	4.1481	33	4.4848	33	3.7576
Q10	50	4.4200	55	4.3091	33	3.8485	33	3.8788
Q11	49	4.4490	55	4.4182	33	4.5152	33	4.1212
Q12	49	4.2041	55	4.0909	33	4.4242	33	4.3333
Q13	49	4.4694	55	4.5455	33	4.3939	32	4.2500
Q14	50	4.5600	55	4.4727	33	4.2424	33	3.8485
Q15	50	4.2200	55	4.1636	33	3.9394	32	3.7188
Q16	50	3.4800	54	3.6481	33	3.0909	33	3.6667
Q17	50	4.4200	55	4.4727	33	4.2424	33	4.0606
Q18	50	4.5000	55	4.6545	33	4.7879	33	4.5758
Q19	49	1.9388	55	1.6182	33	1.7879	33	1.3939
Q20	50	4.2400	55	4.2182	33	4.4242	33	4.1515
Q21	50	4.9400	55	4.8000	33	4.9091	33	4.5152
Q22	50	4.5800	55	4.7091	33	4.7273	33	4.1818
Q23	50	4.2600	55	4.1636	33	4.0000	33	3.5455
Q24	50	4.5000	55	4.4364	33	4.2727	33	4.0606
Q25	50	4.5200	55	4.4364	33	4.2727	33	4.3030
Q26	50	4.6600	55	4.6909	33	4.8788	33	4.8485
Q27	50	4.3400	55	4.1818	33	4.3030	33	4.1212
Q28	49	4.0408	55	4.1091	33	3.5758	33	3.7879
Q29	50	4.6600	55	4.5273	33	4.6970	33	4.4242
Q30	50	3.7200	55	3.7455	33	3.6970	33	3.7273
Q31	50	4.2000	55	4.2545	33	4.0909	33	4.0303
Q32	50	3.7800	55	4.0727	33	4.0000	33	4.2424
Q33	50	4.4600	55	4.3091	33	4.3030	33	4.1818
Q34	50	4.6200	55	4.5273	33	4.5152	33	4.2727
Q35	49	4.3469	55	4.4000	33	4.1818	33	3.9091
Q36	50	4.3800	55	4.2727	33	4.4242	33	4.1212
Q37	50	4.1000	54	4.2222	33	4.3939	32	4.1250
Q38	47	3.9787	53	3.7925	33	4.0000	32	3.9688
Q39	50	4.2400	55	4.4182	33	3.9697	33	4.0909
Q40	50	4.6000	55	4.4909	33	4.6667	33	4.1818

Q41	50	3.9200	55	4.0000	33	3.5758	33	3.3636
Q42	50	4.8200	54	4.7037	33	4.3333	32	4.1250
Q43	50	4.7000	55	4.4000	33	4.5758	33	4.2424
Q44	50	4.8400	55	4.7273	33	4.7273	33	4.4545
Q45	49	4.7551	54	4.5741	33	4.6061	33	4.4242
Q46	50	2.7000	55	2.7818	33	2.3939	33	2.2727
Q47	49	4.5510	55	4.3455	33	4.4848	33	4.0303
Q48	50	4.2200	55	4.2182	33	4.3030	33	3.5758
Q49	50	4.2200	55	4.3455	33	4.2727	33	3.9091
Q50	50	4.4400	55	4.5273	33	4.6364	33	4.4242
Q51	50	3.9000	55	4.4000	33	4.6061	33	4.6061
Q52	50	4.5000	55	4.4909	33	4.6364	33	4.7273
Q53	50	4.3200	55	4.4727	33	4.0000	33	4.5152
Q54	50	4.7400	55	4.5455	33	4.6970	33	4.3939
Q55	50	4.7000	55	4.5455	33	4.5758	33	4.4545
Q56	50	4.3600	54	4.4444	33	4.6061	32	4.4375
Q57	50	3.1800	55	3.3818	33	2.6970	33	2.9697
Q58	50	4.2600	55	3.8182	33	3.9697	33	3.6970
Q59	50	3.4800	55	3.3273	33	4.0303	32	3.4063
Q60	50	4.4000	55	4.2909	33	4.4848	32	3.7500
Q61	50	4.2000	55	4.3091	33	4.2727	33	4.0303
Q62	50	4.6000	55	4.4545	33	4.9091	33	4.5152
Q63	50	4.2200	55	4.3273	33	4.4242	33	4.1212
Q64	50	4.4400	55	4.2909	33	4.5758	32	4.2813
Q65	50	4.6400	55	4.4545	33	4.4545	33	4.2727
Q66	50	4.3200	55	4.4727	33	3.9394	33	4.0606
Q67	50	4.8200	55	4.5455	33	4.5758	33	4.4545
Q68	48	3.8958	54	3.8333	33	3.6061	33	3.3333
Q69	50	3.0000	55	3.6182	33	2.6667	33	2.2121
Q70	50	4.2400	54	4.2037	33	4.0606	33	3.8788
Q71	50	4.8000	55	4.7455	33	4.6667	33	4.4242
Q72	50	4.6800	55	4.3636	33	4.4545	33	4.1818
Q73	50	4.9400	55	4.8364	33	4.8182	33	4.7879
Q74	50	3.6600	55	3.7091	33	3.5758	33	3.5455
Q75	50	4.0000	55	4.3273	33	3.9697	33	3.9091
Q76	50	4.7000	55	4.6545	33	4.6970	33	4.3636
Q77	50	4.6800	55	4.5273	33	4.6970	33	4.2121
Q78	50	2.7600	55	2.9273	33	2.3030	33	2.3636
Q79	50	4.0800	55	4.0909	33	4.0000	33	4.0303
Q80	50	4.6200	54	4.6111	33	4.6667	33	4.4242
Q81	50	4.7000	55	4.7455	33	4.8182	33	4.7879
Q82	50	4.7000	55	4.6909	33	4.6970	33	4.4545
Q83	50	3.8400	55	3.9091	33	3.9394	33	3.7273
Q84	50	4.3800	55	4.4545	33	4.5758	33	3.9091
Q85	50	4.7400	55	4.6909	33	4.6970	33	4.5152
Q86	50	4.3200	55	4.3273	33	4.0606	33	3.9091
Q87	50	4.5400	55	4.5091	33	4.5455	32	4.4688
Q88	50	4.0400	55	3.8909	32	3.7188	31	3.3548
Q89	50	2.1400	55	2.2182	33	1.6061	33	1.3636
Q90	50	4.6400	54	4.2407	33	4.6061	33	4.0000

Q91	50	4.3600	55	4.4909	33	4.5758	33	4.2121
Q92	50	4.5200	55	4.5273	33	4.3636	33	4.1818
Q93	50	4.7000	54	4.5741	33	4.6667	33	4.5455
Q94	49	4.6939	55	4.7091	33	4.5758	33	4.4545
Q95	50	4.2800	55	3.9818	33	4.3939	33	4.2121
Q96	50	4.3600	55	4.3455	33	4.6061	33	4.1818
Q97	50	3.9600	55	3.9455	33	3.7879	33	3.3939
Q98	50	3.7400	55	3.9818	33	3.5152	33	3.0000
Q99	50	4.1200	55	4.3818	33	4.0303	33	4.2424
Q100	50	4.0800	55	3.8364	33	3.8788	33	3.5152
Q101	50	4.0000	55	4.0182	33	3.7879	33	3.3333
Q102	50	4.2000	55	4.1455	33	3.5152	33	3.2121
Q103	50	4.5400	55	4.5818	33	4.6667	33	4.4848
Q104	50	4.7000	55	4.5455	33	4.5455	33	4.3636
Q105	50	4.7800	55	4.7818	33	4.6970	33	4.6364

OTF: O.T. Fieldwork instructors

PTF: P.T. Fieldwork instructors

OTS: O.T. Students

PTS: P.T. Students

SECTION 2: ALL INSTRUCTORS, ALL STUDENTS, ALL O.T.'s AND
ALL P.T.'s

	ALL INSTRUC.		ALL STUDENTS		ALL OT'S		ALL PT'S	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN
Q1	104	4.2596	66	3.8788	82	4.2439	88	3.9886
Q2	104	4.6154	66	4.6818	82	4.5610	88	4.7159
Q3	105	4.5238	65	4.4462	83	4.5301	87	4.4598
Q4	104	3.1635	65	3.1538	82	3.2073	87	3.1149
Q5	105	4.4667	66	4.4242	83	4.3253	88	4.5682
Q6	105	4.5619	66	4.3939	83	4.5783	88	4.4205
Q7	105	4.7714	66	4.6818	83	4.7711	88	4.7045
Q8	102	3.9216	65	3.6154	81	3.6667	86	3.9302
Q9	104	4.2596	66	4.1212	83	4.4217	87	4.0000
Q10	105	4.3619	66	3.8636	83	4.1928	88	4.1477
Q11	104	4.4327	66	4.3182	82	4.4756	88	4.3068
Q12	104	4.1442	66	4.3788	82	4.2927	88	4.1818
Q13	104	4.5096	65	4.3231	82	4.4390	87	4.4368
Q14	105	4.5143	66	4.0455	83	4.4337	88	4.2386
Q15	105	4.1905	65	3.8308	83	4.1084	87	4.0000
Q16	104	3.5673	66	3.3788	83	3.3253	87	3.6552
Q17	105	4.4476	66	4.1515	83	4.3494	88	4.3182
Q18	105	4.5810	66	4.6818	83	4.6145	88	4.6250
Q19	104	1.7692	66	1.5909	82	1.8780	88	1.5341
Q20	105	4.2286	66	4.2879	83	4.3133	88	4.1932
Q21	105	4.8667	66	4.7121	83	4.9277	88	4.6932
Q22	105	4.6476	66	4.4545	83	4.6386	88	4.5114
Q23	105	4.2095	66	3.7727	83	4.1566	88	3.9318
Q24	105	4.4667	66	4.1667	83	4.4096	88	4.2955
Q25	105	4.4762	66	4.2879	83	4.4217	88	4.3864
Q26	105	4.6762	66	4.8636	83	4.7470	88	4.7500
Q27	105	4.2571	66	4.2121	83	4.3253	88	4.1591
Q28	104	4.0769	66	3.6818	82	3.8537	88	3.9886
Q29	105	4.5905	66	4.5606	83	4.6747	88	4.4886
Q30	105	3.7333	66	3.7121	83	3.7108	88	3.7386
Q31	105	4.2286	66	4.0606	83	4.1566	88	4.1705
Q32	105	3.9333	66	4.1212	83	3.8675	88	4.1364
Q33	105	4.3810	66	4.2424	83	4.3976	88	4.2614
Q34	105	4.5714	66	4.3939	83	4.5783	88	4.4318
Q35	104	4.3750	66	4.0455	82	4.2805	88	4.2159
Q36	105	4.3238	66	4.2727	83	4.3976	88	4.2159
Q37	104	4.1635	65	4.2615	83	4.2169	86	4.1860
Q38	100	3.8800	65	3.9846	80	3.9875	85	3.8588
Q39	105	4.3333	66	4.0303	83	4.1325	88	4.2955
Q40	105	4.5429	66	4.4242	83	4.6265	88	4.3750
Q41	105	3.9619	66	3.4697	83	3.7831	88	3.7614
Q42	104	4.7596	65	4.2308	83	4.6265	86	4.4884

Q43	105	4.5429	66	4.4091	83	4.6506	88	4.3409
Q44	105	4.7810	66	4.5909	83	4.7952	88	4.6250
Q45	103	4.6602	66	4.5152	82	4.6951	87	4.5172
Q46	105	2.7429	66	2.3333	83	2.5783	88	2.5909
Q47	104	4.4423	66	4.2576	82	4.5244	88	4.2273
Q48	105	4.2190	66	3.9394	83	4.2530	88	3.9773
Q49	105	4.2857	66	4.0909	83	4.2410	88	4.1818
Q50	105	4.4857	66	4.5303	83	4.5181	88	4.4886
Q51	105	4.1619	66	4.6061	83	4.1807	88	4.4773
Q52	105	4.4952	66	4.6818	83	4.5542	88	4.5795
Q53	105	4.4000	66	4.2576	83	4.1928	88	4.4886
Q54	105	4.6381	66	4.5455	83	4.7229	88	4.4886
Q55	105	4.6190	66	4.5152	83	4.6506	88	4.5114
Q56	104	4.4038	65	4.5231	83	4.4578	86	4.4419
Q57	105	3.2857	66	2.8333	83	2.9880	88	3.2273
Q58	105	4.0286	66	3.8333	83	4.1446	88	3.7727
Q59	105	3.4000	65	3.7231	83	3.6988	87	3.3563
Q60	105	4.3429	65	4.1231	83	4.4337	87	4.0920
Q61	105	4.2571	66	4.1515	83	4.2289	88	4.2045
Q62	105	4.5238	66	4.7121	83	4.7229	88	4.4773
Q63	105	4.2762	66	4.2727	83	4.3012	88	4.2500
Q64	105	4.3619	65	4.4308	83	4.4940	87	4.2874
Q65	105	4.5429	66	4.3636	83	4.5663	88	4.3864
Q66	105	4.4000	66	4.0000	83	4.1687	88	4.3182
Q67	105	4.6762	66	4.5152	83	4.7229	88	4.5114
Q68	102	3.8627	66	3.4697	81	3.7778	87	3.6437
Q69	105	3.3238	66	2.4394	83	2.8675	88	3.0909
Q70	104	4.2212	66	3.9697	83	4.1687	87	4.0805
Q71	105	4.7714	66	4.5455	83	4.7470	88	4.6250
Q72	105	4.5143	66	4.3182	83	4.5904	88	4.2955
Q73	105	4.8857	66	4.8030	83	4.8916	88	4.8182
Q74	105	3.6857	66	3.5606	83	3.6265	88	3.6477
Q75	105	4.1714	66	3.9394	83	3.9880	88	4.1705
Q76	105	4.6762	66	4.5303	83	4.6988	88	4.5455
Q77	105	4.6000	66	4.4545	83	4.6867	88	4.4091
Q78	105	2.8476	66	2.3333	83	2.5783	88	2.7159
Q79	105	4.0857	66	4.0152	83	4.0482	88	4.0682
Q80	104	4.6154	66	4.5455	83	4.6386	87	4.5402
Q81	105	4.7238	66	4.8030	83	4.7470	88	4.7614
Q82	105	4.6952	66	4.5758	83	4.6988	88	4.6023
Q83	105	3.8762	66	3.8333	83	3.8795	88	3.8409
Q84	105	4.4190	66	4.2424	83	4.4578	88	4.2500
Q85	105	4.7143	66	4.6061	83	4.7229	88	4.6250
Q86	105	4.3238	66	3.9848	83	4.2169	88	4.1705
Q87	105	4.5238	65	4.5077	83	4.5422	87	4.4943
Q88	105	3.9619	63	3.5397	82	3.9146	86	3.6977
Q89	105	2.1810	66	1.4848	83	1.9277	88	1.8977
Q90	104	4.4327	66	4.3030	83	4.6265	87	4.1494
Q91	105	4.4286	66	4.3939	83	4.4458	88	4.3864

Q92	105	4.5238	66	4.2727	83	4.4578	88	4.3977
Q93	104	4.6346	66	4.6061	83	4.6867	87	4.5632
Q94	104	4.7019	66	4.5152	82	4.6463	88	4.6136
Q95	105	4.1238	66	4.3030	83	4.3253	88	4.0682
Q96	105	4.3524	66	4.3939	83	4.4578	88	4.2841
Q97	105	3.9524	66	3.5909	83	3.8916	88	3.7386
Q98	105	3.8667	66	3.2576	83	3.6506	88	3.6136
Q99	105	4.2571	66	4.1364	83	4.0843	88	4.3295
Q100	105	3.9524	66	3.6970	83	4.0000	88	3.7159
Q101	105	4.0095	66	3.5606	83	3.9157	88	3.7614
Q102	105	4.1714	66	3.3636	83	3.9277	88	3.7955
Q103	105	4.5619	66	4.5758	83	4.5904	88	4.5455
Q104	105	4.6190	66	4.4545	83	4.6386	88	4.4773
Q105	105	4.7810	66	4.6667	83	4.7470	88	4.7273

All Instructors: OTF and PTF

All Students : OTS and PTS

All O.T.'s : OTF and OTS

All P.T.'s : PTF and PTS

SECTION 3: ALL SUBJECTS COMBINED

	ALL SUBJECTS	
	N	MEAN
Q1	170	4.1118
Q2	170	4.6412
Q3	170	4.4941
Q4	169	3.1598
Q5	171	4.4503
Q6	171	4.4971
Q7	171	4.7368
Q8	167	3.8024
Q9	170	4.2059
Q10	171	4.1696
Q11	170	4.3882
Q12	170	4.2353
Q13	169	4.4379
Q14	171	4.3333
Q15	170	4.0529
Q16	170	3.4941
Q17	171	4.3333
Q18	171	4.6199
Q19	170	1.7000
Q20	171	4.2515
Q21	171	4.8070
Q22	171	4.5731
Q23	171	4.0409
Q24	171	4.3509
Q25	171	4.4035
Q26	171	4.7485
Q27	171	4.2398
Q28	170	3.9235
Q29	171	4.5789
Q30	171	3.7251
Q31	171	4.1637
Q32	171	4.0058
Q33	171	4.3275
Q34	171	4.5029
Q35	170	4.2471
Q36	171	4.3041
Q37	169	4.2012
Q38	165	3.9212
Q39	171	4.2164
Q40	171	4.4971
Q41	171	3.7719
Q42	169	4.5562
Q43	171	4.4912

Q44	171	4.7076
Q45	169	4.6036
Q46	171	2.5848
Q47	170	4.3706
Q48	171	4.1111
Q49	171	4.2105
Q50	171	4.5029
Q51	171	4.3333
Q52	171	4.5673
Q53	171	4.3450
Q54	171	4.6023
Q55	171	4.5789
Q56	169	4.4497
Q57	171	3.1111
Q58	171	3.9532
Q59	170	3.5235
Q60	170	4.2588
Q61	171	4.2164
Q62	171	4.5965
Q63	171	4.2749
Q64	170	4.3882
Q65	171	4.4737
Q66	171	4.2456
Q67	171	4.6140
Q68	168	3.7083
Q69	171	2.9825
Q70	170	4.1235
Q71	171	4.6842
Q72	171	4.4386
Q73	171	4.8538
Q74	171	3.6374
Q75	171	4.0819
Q76	171	4.6199
Q77	171	4.5439
Q78	171	2.6491
Q79	171	4.0585
Q80	170	4.5882
Q81	171	4.7544
Q82	171	4.6491
Q83	171	3.8596
Q84	171	4.3509
Q85	171	4.6725
Q86	171	4.1930
Q87	170	4.5176
Q88	168	3.8036
Q89	171	1.9123
Q90	170	4.3824
Q91	171	4.4152
Q92	171	4.4269
Q93	170	4.6235

Q94	170	4.6294
Q95	171	4.1930
Q96	171	4.3684
Q97	171	3.8129
Q98	171	3.6316
Q99	171	4.2105
Q100	171	3.8538
Q101	171	3.8363
Q102	171	3.8596
Q103	171	4.5673
Q104	171	4.5556
Q105	171	4.7368

All subjects: OTF, PTF, OTS, and PTS combined.