AN INVESTIGATION OF

PROFESSIONAL LEARNING BY CLINICAL DIETITIANS

by

JANINE M. SCHWEITZER

A thesis submitted to the Faculty of Education

in conformity with the requirements for

the degree of Master of Education

Queen's University

Kingston, Ontario, Canada

July, 1997

ABSTRACT

This thesis explored professional learning among clinical dietitians in Ontario. Of particular interest were knowledge acquired from practice, and factors within practice settings which can support dietitians to be successful learners. This research was non-experimental and exploratory in nature.

Qualitative data analysis involved reducing data from audiotaped interviews and categorizing them into major themes. Quantitative data analysis of 401 completed questionnaires was facilitated using Systat 6.0 for Windows (Wilkinson, 1996). The questionnaire data were characterized by descriptive statistics. Linear relationships were investigated through the use of Pearson's product moment correlations. Factor analysis was performed to explore relationships between the variables. Regression analysis was performed to determine the relative impact of underlying factors on the dependent variable, perception of oneself as a continuous learner.

A demographic profile of respondents is presented which includes features of their practice settings. Data are presented to describe professional learning that clinical dietitians engage in and perceive to be worthwhile. Included are both planned continuing education activities and learning that occurs in practice settings. Most respondents participated in a range of continuing education activities which they considered to be worthwhile. Most (N = 380) had attended at least one external workshop, conference, or seminar in the past year. Collaboration with colleagues occurred in a variety of ways and resulted in learning that was highly valued.

Almost all respondents reported being continuous learners (N = 385). Most reported having confidence in their abilities and skills, both today (N = 340) and for the future (N = 306). Almost half (N = 174) indicated that they either do not plan their professional development or do not perceive that they plan it effectively. Most did not have a

mechanism for obtaining systematic feedback to help them assess their learning needs. In general, respondents did not express concern about lack of organizational support for learning. They reported having freedom to set goals and priorities ($N = 351$) and having sufficient opportunities to influence policies, procedures, or programs that affect them ($N = 281$). Only 36.8% ($N = 147$) reported having enough time to participate in activities that enhance their practice.

According to the model that was investigated using regression analysis, approximately 30% of the variation in respondents' perceptions of themselves as continuous learners was explained by variation in two underlying factors. The largest factor was comprised of items relating to both professional confidence and planning for professional development. The other factor was comprised of individual learning activities that were undertaken. The regression equation was statistically significant ($F 3, 333) = 48.7$ $p < .001$.

This study concludes with a discussion of some implications of this research including a presentation of strategies that can support clinical dietitians to be continuous learners, thereby contributing to their professional competence.

ACKNOWLEDGEMENTS

I am grateful to my thesis supervisor, Dr. Lyn Shulha. Throughout this research she has shared her wisdom and insights with me, and has offered encouragement and helpful suggestions. She has helped me to clarify my thinking and to improve my work. I appreciate her enthusiasm, her patience, her wonderful sense of humour, and the tremendous amount of time she has given to me. It has been a pleasure to work with her on this thesis.

I would also like to express my appreciation to my committee members, Dr. Bob Wilson and Dr. Howard Smith, for their helpful suggestions throughout the completion of this thesis. They, too, have helped to make my work better.

I would also like to express my appreciation to the College of Dietitians of Ontario for providing financial assistance with postage costs and for providing mailing labels.

Finally, I am grateful to my husband, Ian, for being supportive of me in so many ways.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

Introduction

This thesis explored professional learning among dietitians. Of particular interest were (a) knowledge acquired from practice, and (b) factors within practice settings which can support dietitians to be successful learners, thereby contributing to their professional competence. This chapter provides an overview of the research, including some definitions.

It is widely acknowledged that systematic lifelong learning is necessary for health care professionals to keep abreast of rapidly changing information and to remain competent. However, traditional ways of thinking about continuing education for health care professionals have not necessarily been synonymous with continuing learning and have not automatically assured professional competence (Cervero, 1988; Houle, 1980; Sanford, 1989). In keeping with the traditional view of professional competence as the possession of technical knowledge and skill alone, continuing education for health care professionals has been seen as reinforcing what was taught in professional school. It has been viewed almost exclusively in terms of formal learning activities which focus on the transmission of new knowledge that is formal, abstract, and general.

Traditionally, the professional education establishment within health care professions has devalued knowledge which is specific and based in practice (Cervero, 1992). Although these views have been challenged recently, the most prevalent view of continuing professional education continues to focus on the need to acquire the most recent knowledge in one's field in order to remain competent and avoid professional obsolescence (Queeney & Smutz, 1990).

Although it is essential for professionals to be technically competent and to remain abreast of current literature, professional competence involves more than technical expertise (Benner, Tanner, Chesla, 1996; Cervero, 1988; Houle, 1980; Sanford, 1989;

Schon, 1983). Current views of professional competence recognize concepts such as professional artistry (Schon, 1983), practical knowledge (Benner, 1984), and intuition (Benner, 1984; Benner et al., 1996) as important components of professional competence. A substantial body of literature, which has emerged over the past fifteen years, has concluded that knowledge acquired from practice is essential for competent professional practice; therefore, methods of supporting learning from practice need to be identified (Benner, 1984; Benner, et al., 1996; Cervero, 1988, 1992; Houle, 1980; Marsick, 1987; Schon, 1983). It is not sufficient for professionals to rely upon knowledge acquired through formal continuing education activities as their only sources of professional learning. Many authors (e.g., Cervero, 1988, 1992; Marsick,1987; Houle, 1980; Schon, 1983, and Watkins & Marsick, 1992) have suggested that professionals who are successful learners have developed an ability to reflect critically on their practice in order to learn from past experience. These authors have concluded that it is necessary to help professionals to become reflective practitioners.

Because learning is influenced by the context in which one practices, attempts to understand professional learning by dietitians need to consider the influence of organizations. Traditionally, the role of health care organizations in supporting professionals' efforts to maintain competence has been seen by organizations and professionals alike as providing time and money to allow employees to attend inservice education and formal continuing education events. Because the importance of knowledge acquired from practice has not been widely acknowledged or understood, the role of health care organizations in supporting learning in other ways has not received much attention. For instance, accreditation standards for American hospitals state that organizations will provide staff with information they need to succeed in their positions through orientation, training and continuing education (Krasker, & Balogun, 1995). This focus on providing information represents a narrow view of how organizations can

support learning by individuals. An emerging body of literature has suggested that organizations, too, would benefit from adopting broader views of learning which acknowledge the value of learning and reflection among both individuals and groups within organizations (Gauthier, 1995; Hardy, 1995; Kofman & Senge, 1993; Senge, 1990, Thompson, 1995).

Finally, an exploration of professional learning by dietitians would be incomplete without an attempt to understand other factors, including characteristics of the dietitian and of practice settings, which may influence dietitians' participation in professional learning.

Statement of problem

Literature cited, thus far, has suggested that ways of thinking about continuing education and competence for health care professionals are changing. Emerging views emphasize that (a) knowledge acquired from practice is an essential component of competence, and (b) learning occurs through, and is influenced by, participation in a practice community. It seems reasonable to assume that these emerging views would apply to dietetics practice; however, the literature contains few articles about how dietitians learn from practice. Therefore, this research was undertaken to investigate dietitians' views about professional learning and their experiences as learners within organizations.

Purpose

This study was undertaken to investigate (a) professional learning by dietitians, particularly that which occurs in practice settings, and (b) factors within practice settings which can support clinical dietitians to be continuous learners, thereby contributing to their professional competence. The following specific research questions were posed to investigate professional learning by dietitians:

1. What are dietitians' views about the nature of professional learning, particularly that which occurs in practice settings?

2. What professional learning do dietitians engage in and perceive to be worthwhile?

3. What, if anything, does the concept of reflective practice (Schon, 1983) mean to dietitians and to what extent do they engage in reflective practice?

4. What organizational factors are perceived by dietitians to support their learning from practice, thus enhancing their professional competence?

Based on a review of the literature, as presented in chapter 2, interview questions were developed to address each of these research questions. Then, specific questionnaire items were developed to address each of these research questions. These were based on both interview data and the literature review.

Factors within practice settings which can support clinical dietitians to be continuous learners were investigated using principal component analysis and regression analysis. Specifically, this analysis sought to investigate relationships between continuous learning and the following categories of variables: (a) organizational and peer support for participation in activities which foster learning from practice, (b) the dietitian's stage of professional expertise, based on the levels proposed by Benner et al. (1996), and (c) personal and organizational factors which may influence participation in learning.

Rationale

Although the literature states clearly that health care professionals must be lifelong learners who capitalize on opportunities to learn from practice, it provides little guidance to help individuals do so. The dynamics of learning from practice are unclear (Watkins and Marsick, 1992). Research was needed to increase understanding of how dietitians learn in practice settings and to identify practical strategies for assisting them to become successful learners. It was hoped that this research would stimulate discussion about (a)

strategies to enhance professional learning and competence among dietitians and (b) how organizations can enhance learning in practice settings.

The public's right to quality health care requires a system that assures continuing competence from those who provide that care (Dougherty & Tower, 1989). Hospitals and other health care organizations are required to provide assurance to relevant accreditation bodies that professionals who practice there are competent. The challenge of maintaining competence is enhanced by the rapid growth of information and technology and the changes in healthcare delivery. Recent funding reductions have resulted in many health care employers providing less money for professionals to attend professional association meetings and conferences. Therefore, if only from an economic perspective, it is not practical for professionals to rely upon formal continuing education activities as their only source of learning. Because it would seem appropriate to view the maintenance of professional competence as a shared responsibility between individual professionals and the organizations in which they practice, both professionals and their employers need to understand the importance of knowledge that is acquired from practice and how it can be fostered.

Definitions

The following definitions are provided to clarify intended meanings within the context of this thesis.

Continuing professional education refers to the traditional, often structured and formal activities that professionals have relied upon to acquire new information in their field. Included here would be activities such as attending lectures, conferences, workshops, and teleconferences; reading professional literature, and attending exhibits of new products.

Learning from practice refers to learning that happens in the practice setting. It may be stimulated by practice-based questions, conscious or unconscious, actively sought

or not. Included here would be activities such as reflecting on experience, networking with colleagues, and learning from mistakes.

Although the term learning organization is prevalent within current literature, it has not been defined clearly. For the purpose of this thesis, a learning organization is defined as one which fosters individual and collective learning among those who work there. Learning organizations encourage employees to value learning, to adopt a questioning approach to their own practice and to established practices within the organization, to view mistakes as opportunities for learning, and to strive continually to find improved ways of doing things. For a learning organization to emerge, it is necessary for the culture and structures within an organization to nurture personal and collective learning. This definition is based on concepts presented by Hardy (1995), Kofman and Senge (1993), and Thompson (1995).

Professional learning refers to all ways that professionals can learn from and enhance their practice. It includes both formal continuing education activities, which emphasize the acquisition of new information, and knowledge which is acquired from practice.

Overview of this research

A review of relevant literature is presented in chapter 2 to support the rationale for conducting this research. The first section of the literature review provides a theoretical context for this research, beginning with a discussion of professional learning and competence. Included in this section is a review of selected literature on cognition, a discussion of the writings of Schon (1983) on the reflective practitioner, and a discussion of the development of professional expertise. Research by Benner (1984) and Benner et al. (1996) on the development of expertise in clinical nursing practice is featured. This is followed by a discussion of professional learning among dietitians. The literature review

concludes with a discussion of organizational factors which affect learning, including a review of current literature on learning organizations.

The method is described in chapter 3. Included in this chapter are the research questions and a description of the qualitative and quantitative data collection instruments, procedures, and data analysis. This chapter describes study participants and identifies limitations and assumptions of the research. Results of the qualitative and quantitative components of this research are presented in chapter 4. The quantitative data analysis will be emphasized, beginning with a demographic profile of participants. Data describing participants' reported learning activities, their views on professional learning, and their perceptions about the organizations in which they work are presented next. This chapter concludes with a discussion of relationships that emerged from an analysis of the quantitative data.

A discussion of the implications of this research, including conclusions and recommendations, is presented in chapter 5. Finally, the research concludes with a list of supporting references and the appendices.

CHAPTER 2

Review of the Literature

Changing views of professional competence and learning

Traditional views of professional competence have resulted in many professionals regarding continuing education simply as a way of keeping up to date by listening to lectures. There are widely acknowledged concerns that (a) current continuing education practices do not assure professional competence, and (b) professionals need to view professional education differently (Cervero, 1988, 1992; Houle, 1980; Sanford, 1989). Rather than viewing education as the periodic acquisition of technical skills and knowledge only, professionals need to view learning more broadly. They need to regard learning as a continual process throughout one's career. Dr. Eric McCrone, former Director of Quality Assurance for the Colleges of Nurses of Ontario, described competence as a state-of-mind that regards continuous learning as a necessary part of professionalism. He viewed competence as a process, rather than just a set of skills. He suggested that when competence is defined solely in terms of knowledge and skills, it is assumed to be just a series of isolated tasks, rather than a merging of knowledge, skills, and judgments which are relevant to a particular situation (personal communication, April, 1995).

The realization that professional education needs to be viewed as more than formal learning activities is not new. Almost two decades ago, Houle (1980) suggested that long-accepted ways of keeping up to date and specialized programs of continuing education appeared to be unsatisfactory in establishing and maintaining a desirable level of professional practice. Furthermore, he suggested that too few professionals continue to learn throughout their careers, and observed that in many professions the answers to the following questions have been discouraging: (a) How rigorously and well do professionals continue to use that competence as part of their practice? (b) How readily

and frequently do they continue to build on what they know? and (c) When and by what means will they undertake new learning experiences? The fact that these questions are still being asked today suggests how difficult it is to implement a different vision of continuing professional education. Houle suggested that the term continuing education was problematic because it implied, incorrectly, the idea of instruction in which already-known facts or skills or defined awareness are transmitted from those who possess them to those who don't. In Houle's opinion, a heightened level of professional thought and behaviour does not occur by simply spreading current knowledge around. Benner et al. (1996) and Lave and Wenger (1991) expanded on this notion in their descriptions of learning. The conclusions of these authors will be discussed later in this paper.

Assessing learning needs.

Geissinger et al. (1993) concluded that few well-designed research studies have been published to evaluate continuing education programs for health care professionals or to address the difficulty of facilitating and assessing professional change. Queeney and Smutz (1990) suggested that health care professionals need help to understand the many dimensions of continuing professional education and to be knowledgeable and responsible consumers of continuing professional education. They suggested that health care professionals are often unaware of the range of their learning needs, and may therefore have trouble determining what would be most useful to them in their daily practice. Queeney and Smutz (1990) concluded that (a) decisions about professionals' continuing education needs are often based on surveys asking respondents what topics interest them or on faculty members' perceptions of what should be taught, and (b) although such approaches can be useful, total reliance upon them may result in programs that focus more on perceived wants than on actual needs. Needs may be different than wants. A person may want to participate in an educational activity because the content is appealing or the

speaker is entertaining, yet that activity may be unrelated to an educational need (Queeney & Smutz, 1990; Queeney, 1995).

Research conducted as part of the 1980 - 1985 Continuing Professional Education Project at the Pennsylvania State University illustrated the complexity of determining educational needs (Queeney & Smutz, 1990; Queeney, 1995). This research, which attempted to link continuing professional education to daily practice, was based on these assumptions: (a) learning must be tied to the context in which practitioners perform, (b) professionals' learning needs must be derived from a determination of their strengths and weaknesses, and (c) new knowledge and skills must be integrated into professionals' established practice patterns. In this project, representatives of five professions, including clinical dietetics, were asked to list content areas in which they perceived themselves to be weak or to require further education. They were then assessed by peers during practice simulations in an attempt to objectively assess strengths and weaknesses. The results identified discrepancies between perceived and assessed performance-based needs. In fact, areas of greatest discrepancy identified through assessment often were not included in the participants' lists of perceived needs. Participants most often believed that their learning needs were for new knowledge or for information relating to areas of practice in which they seldom worked. Typically, they identified knowledge they used infrequently but perceived to be necessary for a higher-order position, or knowledge that was new to the profession. Rarely did they identify skills used in daily practice, even when those skills were assessed as being deficient.

Queeney (1995) concluded that generally professionals do not perceive themselves as lacking proficiency in tasks they perform regularly, and speculated that this may be because they self-defensively believe that what they do, they do well. Therefore, even when assessment identifies weaknesses in these areas, it may be hard to motivate professionals to enroll in programs to strengthen these skills. Queeney and Smutz (1990)

and Queeney (1995) concluded that the results illustrate (a) the problem of depending too heavily on individuals' self-reported needs, and (b) the complexity and cost of identifying learning needs based on performance deficiencies and then developing programs to address those needs, and (c) perceived and performance-based needs assessment both have value because they both identify different types of learning needs. This project relied heavily upon the involvement of practicing professionals to ensure that the model adequately accounted for what happened in actual practice situations. Although this research provided insight into how dietitians view their learning needs, it must be interpreted cautiously because it does not consider the organizational context in which learning occurred. For instance, it does not consider the potentially difficult issue of who gets to determine what an individual's needs are and what resources are made available to assist an individual to pursue them. For a variety of reasons, organizations and individual professionals may have very different perspectives of what constitutes the most pressing learning needs of an individual at any one time.

Dougherty and Tower (1989) suggested that professionals have been assumed to be effective lifelong learners who are skilled at identifying their needs, selecting appropriate programs, and integrating new learning into their practices. They concluded that few professionals have adequately developed these skills. This is not surprising, considering that these are very complex skills which are not easily taught. Dougherty and Tower (1989) may have been correct that professionals need to develop these skills; however, without an ability to learn from practice, it is unlikely that these skills alone will be sufficient to assure that professionals are effective lifelong learners. Furthermore, this linear view of continuing education may not be consistent with current thinking about how people learn. Early in the study of self directed learning, learners were thought to plan and carry out learning in a fairly linear pattern: establishing goals and objectives, locating resources, and choosing learning strategies. According to Merriam & Caffarella (1991),

more recent literature has suggested that learning may not proceed this way. Adults who engage in self-directed learning do not necessarily follow a series of steps in a linear format; they follow numerous paths, use a variety of strategies, and they rarely plan their learning in advance. Brookfield, as cited by Merriam & Caffarella (1991), indicated that self-directed learning involves an interaction of reflection, action, individually planned activities, decisions arrived at collaboratively, and decisions imposed from an external source.

Literature cited thus far (e.g., Benner et al., 1996; Cervero, 1988, 1992; Houle, 1980; Schon, 1983) has concluded that learning from practice is an essential component of the development of competent professional practice. This theme will be developed next, beginning with a discussion of the importance of reflective practice and continuing with a more general discussion of the development of professional expertise.

The reflective practitioner.

Schon (1983) proposed a model of professional practice which placed technical problem solving within a broader context of reflective inquiry. He concluded that there is a fundamental structure of professional inquiry across the professions and that reflection-in-action is central to the art of practice. According to Schon (1983), professional behaviour is complex. Professionals are faced with problems and desired ends which are often unclear and they are often required to perform tasks for which they have not been educated. Therefore, he concluded that competent professional practice requires more than the application of skills and techniques. It requires that professionals construct an understanding of situations, reframe those which are perceived to be problematic, and clarify both the ends to be achieved and the means of achieving them. Schon (1983) concluded that professionals need to reflect-in-action to make problems solvable. He defined this as thinking about something while one is doing it, during the time in which the action can still make a difference. Reflection-in-action results from the element of

surprise, when performance yields other than the expected results. It requires that practitioners allow themselves to experience surprise, puzzlement, or confusion, and to reflect on situations and on their previous understandings of them. According to Schon (1983), competent professionals know more than they can describe. They reflect on their intuitive knowing in order to make sense of complexity and uncertainty. They recognize familiar aspects of a situation, but regard each situation as having unique features. They build a repertoire of examples, understandings, and actions which they use to make sense of new situations. In this way, they bring past experiences to bear on new situations without reducing them to standard rules and categories. Each new reflection-in-action enriches their repertoire. Thus, reflection enables professionals to build upon previous experience and enlarge the scope of their abilities.

A number of authors (e.g., Benner et al. 1996; Cervero, 1988, 1992; Houle, 1980; Marsick, 1987) have agreed that a capacity to reflect on one's actions is a central aspect of learning from practice and an essential component of professional competence. Reflection requires that professionals think on two different levels simultaneously: on one hand, to be engaged in the task; on the other, to be somewhat detached, constantly monitoring their own work, making judgments about successes or failures and subsequently altering behaviour (Cervero, 1988; Houle, 1980). Houle (1980) suggested that professionals need to regard even routine situations with a fresh and discerning eye; otherwise, the repetitiveness of practice may lead to staleness, boredom, acceptance of shortcuts, and routinization of thought. This, in turn, becomes the precondition of failure to learn about new ideas and treatments. Marsick (1987) distinguished between simple reflection and critical reflection: all learning calls for some level of reflection, however, critical reflection is required in situations which call for a deeper level of analysis. It involves digging beneath the surface to examine taken-for-granted assumptions, norms, and values. She described critically reflective learners as those who are continually sensitive to why things

are being done in a certain way, to discrepancies between what is being said and done, and to the way in which forces and values below the surface in an organization shape actions and outcomes. They do not automatically follow an expert's advice on solving a problem that has been defined for them, but first of all need to determine if they see the problem the same way. Benner et al (1996) suggested that reflection involves an ongoing internal dialogue about self-improvement related to specific caregiving situations, particularly in situations where expectations were not met.

Schon (1983) acknowledged that although reflective inquiry is difficult to define and teach, it is a required part of competent practice which needs to be legitimized and further developed. An obvious question, within the context of this thesis, would be to ask how organizations can foster reflective practice among individuals. There is widespread concern that people who work in organizations are generally not encouraged to question norms and authority; therefore, they may not know how to be reflective practitioners (Benveniste, 1987; Kofman & Senge, 1992; Hardy, 1995; Marsick, 1987; Skruber, 1987). This theme will be discussed later.

The next section reviews some literature on cognition. This material provides an important context for understanding the conclusions of those who advocate for expanded views of learning by professionals (e.g., Benner, 1984, Benner et al., 1996) and by organizations (e.g., Hardy, 1995; Kofman & Senge, 1992; Marsick, 1987; Watkins & Marsick, 1992) and for understanding the notions that (a) knowledge is socially constructed within a community of practice, and (b) practice context is an important consideration in learning.

Links to cognitive psychology

Resnick (1989) stated that current cognitive theory emphasizes three interrelated aspects of learning: (a) learning is a process of knowledge construction, (b) learning is knowledge-dependent, with people using current knowledge to construct new knowledge,

and (c) learning is tied to the situation in which it occurs. According to Resnick (1989, p. 2), "effective learning depends on the intentions, self-monitoring, elaborations, and representational constructions of the individual learner." She concluded that differences in how effectively people reason and learn may be partly dependent on prior knowledge and partly on habits of engaging with intellectual questions. She cited evidence which suggested that successful learners (a) tend to use strategies to devise their own explanations and to extend information they receive, (b) monitor their own understanding as they work, and (c) view themselves as being in charge of their learning.

Professional behaviour is complex. Professionals are constantly making judgments about the appropriate course of action in a particular situation. These judgments have as much to do with determining what problems need to be solved as about how to solve them (Cervero, 1992; Marsick, 1987). According to Marsick (1987), participation in setting the problem is as important in the learning process as solving the problem. She viewed problem-setting as a creative, non-linear process that can be aborted by premature calls for closure, before participants have defined the nature of the problem to be solved. Cervero (1988) proposed that an effective cycle of learning exists when professionals continually try to understand and think about what is new in terms of what they already know. By doing so, they construct an understanding of current situations of practice using a repertoire of practical knowledge acquired primarily through real-life experiences in prior situations. This leads to new knowledge being created out of everyday experience. He suggested that most professionals aren't fully aware of the knowledge in their repertoires; therefore, they require help to make this knowledge explicit. This is important because their understanding and interpretation of information depends on the availability of appropriate schemata. Learners must be able to test, evaluate, and modify their existing schemata so they can deal with the new information in light of their own knowledge structures. Cervero (1988) stressed that learning occurs through collaborative social

interaction and the social construction of knowledge within a community of practitioners and a context of practice.

Lave and Wenger (1991) also emphasized that learning occurs within a practice community. Their focus was not on the cognitive processes and conceptual structures involved in learning, but on the kind of social engagements that provide the proper context for learning to occur. They shifted the analytic focus away from the individual learner to the individual's participation in a social world. They proposed a concept called legitimate peripheral participation, which recognized that practical knowledge is socially embedded and dialogical. Legitimate peripheral participation involves learners acquiring skill by actually participating in a practice community with an expert, initially to a limited degree and with limited responsibility for the product as a whole. Learning occurs as learners have increased opportunities for participation and gain increased access to a wide range of information, activities, and expert performances. Skillful learning involves many things: having a grasp of complex situations, being able to anticipate and to time actions relative to changing circumstances, and having a sense of what can feasibly occur within specified contexts, even if it doesn't occur in a particular situation. The naive questions of newcomers also play an important role by inviting reflection on ongoing activity by more experienced practitioners. Lave and Wenger (1991) stressed the importance of newcomers gaining full access to participation in a practice community. This is important for reasons other than the acquisition of technical knowledge and skill. It provides opportunities for learning about the social structure of practice and about power relations, and for learning how to talk (and be silent) in the manner of full participants. It also provides a connection with the values and heritage of that practice, and provides interpretive support necessary for making sense of things. They suggested that conversations and stories play a key role in supporting apprenticeship learning, particularly stories about problematic and especially difficult cases. Stories allow for diagnosis and

reinterpretation, they support communal forms of memory and reflection, and they signal identity in a practice community.

Benner et al. (1996) expressed similar views about the value of narrative and the importance of integrating new nurses into the nursing community in order to facilitate their knowledge development and social integration. They suggested that if inexperienced nurses are not able to participate in the types of informal exchanges that occur in locker rooms and over lunch breaks, their learning and development will be stunted.

The development of professional expertise

Benner et al. (1996) concluded that theory and practice intertwine in a mutually supportive process, and that expertise can result only if both are cultivated and appreciated. Based on research, Benner et al. (1996) described the development of expertise in nursing practice as a progression from principle-based practice, guided by science, technology, and ethics, to response-based practice, which requires experiential learning and engaged reasoning. They concluded that (a) skilled know-how is a form of knowledge in its own right, and not just application of knowledge, and (b) experienced clinicians have mastered a kind of knowledge which is not available from the classroom. Expertise is not simply technical skill or the application of general principles. Although it evolves with experience, not all people achieve expertise, even with significant experience. There are some people who learn from practice better than others, and this ability distinguishes experts in a particular profession (Cervero, 1992). As professionals develop more expertise in their specific domains, the structure of their knowledge base becomes increasingly organized and interrelated; this facilitates their ability to integrate related new knowledge into their current knowledge base (Willis & Tosti-Vasey, 1990). Thus, Benner et al. (1996) pointed out that one person may display a mixture of competent, proficient, and expert performance in different aspects of their practice since skilled performance depends on prior clinical learning and is always related to a particular situation.

Benner et al. (1996) postulated that the progression from novice to expert is recognizable and relevant to all professions. The work of Benner et al. (1996) has influenced this research because it described how one group of health care professionals learns from practice, it identified clearly that this type of learning is essential for competent practice, and it identified that learning is affected by the level of expertise of the practitioner. It also suggested strategies for informal learning that may apply to clinical dietetics practice. This researcher has assumed that many research findings and conclusions reached by Benner (1984) and Benner et al. (1996) would be relevant to clinical dietetics practice. According to Cervero (1988) and Houle (1980), issues surrounding continuing professional education are similar across the professions; therefore, this is probably a reasonable assumption.

Progression from novice to expert practice.

A description of the five stages in the development of expertise, as proposed by Benner et al. (1996), follows. The novice stage is characterized by tasks which have been broken down by instructors into context-free features which the novice can recognize without the benefit of experience. Novices are given rules for drawing conclusions and determining actions based on context-free features.

Next is the advanced beginner stage, which is a time of significant transition in terms of knowledge, situatedness in the practice setting, and self-understanding as a nurse. Because advanced beginners have more experience coping with real-life situations and have an expanded concept of what is relevant, they begin to recognize meaningful elements in situations and to incorporate these elements into their rules for behaviour. However, they depend heavily on external guidance (e.g., standards of care, procedures, physicians' and nurses' orders, and the expertise of others) and place a great deal of trust in their co-workers' knowledge. Clinical situations are seen as opportunities for learning and as tests of their personal knowledge and abilities; therefore, advanced beginners may

be more concerned about their needs than patients' needs. They have to work hard to recognize concrete examples of clinical entities they have studied only theoretically; therefore, they have less attention available for understanding how clinical states vary in their presentation or change over time. As a result, they focus on the things that need to be done, all of which appear equally relevant, and they cannot attend to a patient's changing status or individual needs. In contrast, more experienced nurses are concerned with providing care to meet patients' changing conditions and needs.

Advanced beginners benefit from having more experienced nurses help them fit the seemingly disjointed components of patient care into a meaningful whole, thus allowing them to begin to see patterns and glimpses of the whole patient's condition. They may recognize new conditions, but not how to manage them. Therefore, they need coaching about what interventions are required. They also need opportunities to review situations that were ambiguous or did not go well with the health care team in an effort to gain perspective on their accomplishments. Discussions about chosen actions or other options might guide them to act differently in the future and to reflect differently on the care that was provided. Benner et al. (1996) suggested that this can be facilitated by clear identification of (a) persons to whom beginners should turn when they require assistance, and (b) the various skills of resource people who are available to beginners. They also suggested that experienced practitioners be provided with specific training on learning needs of beginners in order to reduce conflict and confusion about what are reasonable expectations.

The competent stage is next. It is distinguished from previous ones by improved clinical understanding, technical skill, organizational ability, and an ability to anticipate events. Benner et al. (1996) suggested that most nurses perform at this stage after two years of practice. The competent nurse recognizes even more potentially relevant features in a situation but still lacks a sense of what is important in any one situation. Because the

amount of information can seem overwhelming, the competent nurse tries to devise rules for prioritizing information. This involves choosing a perspective or goal. Making this choice requires the nurse to become personally involved and to feel responsible for and emotionally involved in the results of the choice. This is a significant change from the detached, rule-following behaviour of earlier stages. Nurses at this stage also recognize the limits of formal knowledge. For instance, they are aware that identification of a clinical problem is not sufficient to obtain appropriate medical action; they must also be able to make a case for their clinical judgment. A better understanding of the nature of the work allows the competent nurse more reflective time and energy to more effectively seek help.

The next stage is the proficient performer. Proficient nurses begin to focus on patient responses and to develop a beginning understanding of particular patients within a general population. They recognize changing relevance and have increased capacity to respond to it. Because proficient nurses can recognize situated cues, this is an appropriate time to re-introduce response-based maxims that were taught in nursing education. Proficient nurses can see the goal and the important features of a situation, but still must think about what to do. To do so, they fall back on detached, rule-based determination of actions.

Expert practice, the final stage, is characterized by response-based practice, an ability to recognize familiar and individual patterns of response, an ability to relate past, present, and future, and an expanded peripheral vision about what is happening in a situation. Experts know what needs to be achieved, based on mature and practical situational discrimination, and how to achieve the goal. They have a more subtle and refined discrimination ability than proficient nurses. When things are proceeding normally, experts don't solve problems and they don't make decisions; they simply do what experience has shown normally works. Even the best of experts, when time permits, think

before they act. However, they don't think about rules for choosing goals or their reasons for choosing them. Instead, they reflect on the goal that seems evident to them, and upon the action that seems appropriate to achieve that goal. Experts try to protect against "tunnel vision" by trying to see a situation in alternate ways, by introspection, by consulting others, and by being sympathetic to different viewpoints. When experts feel that a situation is so novel as to preclude an intuitive response, they consult someone for whom the situation is not novel.

Benner et al (1996) suggested that developing expert practice is dependent upon having experts demonstrate their response-based practice in concrete situations. Identifying more experienced nurses to whom beginners can turn is a good way to encourage clinical inquiry and experiential learning. Experienced nurses can coach new nurses about qualitative distinctions in practice, patterns of patient response, and perspectives on patient situations. Similarly, proficient and expert nurses can be helpful to competent nurses by showing them how to read situations and to develop the skill of seeing changing relevance in patient care situations. Proficient nurses can be encouraged to develop and present narratives around changing their understanding of a clinical situation as it evolves. Identifying clinical experts and gaining multiple perspectives about a situation are powerful strategies for maximizing the clinical knowledge of a group.

The next section of this literature review provides a brief discussion of other factors which may influence professional learning by dietitians. The intent is not to provide a comprehensive review of the subject of motivation, but to highlight issues that may be relevant to this research.

Factors which may influence participation in professional learning

What factors influence professionals to participate in learning or to take advantage of learning opportunities that are available to them? Although these are important questions, the answers remain elusive for a number of reasons. Motivation is a complex

construct that has been approached from various theoretical frameworks. Because researchers have tended not to examine interactions between cognition and motivational, emotional, and social aspects of a person's life, there is a poor understanding of these interactions (Resnick, 1989).

Motivation to learn appears to be influenced by many things working together: type of learning task, learning environment, and individual differences related to such things as needs, emotions, impulses, attitudes, values, and expectancies (Wlodkowski, 1993). This suggests that a dietitian's participation in learning might be influenced by many things, including the following: (a) stage of life or career, (b) competing elements in life which may influence personal priorities, (c) demands of the job, with less routinized activities posing more problems which require learning, (d) the dietitian's orientation toward long-term or short-term goals , and (e) characteristics of the work setting.

Few research studies appear to exist which investigate motivation of adults to learn in informal learning situations (Merriam & Caffarella, 1991). At an even more fundamental level, Wlodkowski (1993) stated that there has not been a major research study that thoroughly examines the exact relationship between adult motivation and learning. Most research on the relationship between motivation and learning has been done with youth. Wlodkowski (1993, p. 6) suggested that the motivational theories that are most suited to adult learning are psychological theories that regard competence as a central assumption and support the notion that "human beings strive for understanding and mastery, and tend to be motivated when they are effectively learning something they value." One of these theories, the achievement motivation theory, may be relevant to this thesis and is reviewed next.

Dweck (1986) discussed motivational processes that determine how effectively children acquire and use new skills. She indicated that goals relating to competence appear to fall into two types: performance goals and learning goals. People who are

focused on performance goals seek to gain positive judgments or to avoid negative judgments of their ability by others. People who are focused on learning goals seek to increase their competence, to understand something, or to master something (Dweck, 1986). Using achievement motivation theory, she illustrated how people's preferential choice of goals in learning situations (a) shapes reactions to success and failure, and (b) influences cognitive performance by determining whether they develop adaptive or maladaptive motivational patterns. The adaptive (mastery-oriented) pattern promotes the establishment, maintenance, and attainment of personally challenging and valued achievement goals. The maladaptive (helpless) pattern is associated with failure to set appropriate and valued goals, failure to strive toward goals, and failure to attain goals that are within reach (Dweck, 1986, p. 1040). With performance goals, children's concern about their ability levels results in a tendency to withdraw from challenge, out of fear of having their abilities perceived negatively. With learning goals, children tend to seek and be energized by challenging learning tasks as they focus on gaining mastery through effort. Satisfaction with outcome also appears to be dependent upon choice of goal. Those motivated by performance goals are satisfied when they believe they have displayed a high level of ability. Those motivated by learning goals base their satisfaction on the effort they have expended in pursuit of the goal.

Although Dweck (1986) discussed the achievement motivation theory based on research in children, this theory may be relevant to this research. Wlodkowski (1993), citing Cross, indicated that adults seek to enhance their self-esteem through learning activities in which their competence is enhanced. Thus, it seems reasonable to postulate that adults who are motivated by performance goals would try to preserve their self-esteem by not asking questions, even in the face of uncertainty. Thus, they would not participate in discussion groups, and would not share the types of practice-based stories that are advocated by Benner et al. (1996) as valuable sources of learning. This avoidance

behaviour is likely to severely curtail opportunities to benefit from practice-based learning. When considering organizational factors that support learning, it may be particularly important to try to foster a climate in which professionals who are motivated by performance goals feel safe asking questions. Wlodkowski's discussion of motivation as a mediator and a consequence of learning also appears to be relevant to achievement motivation theory. He said:

> Learners who complete a learning experience and leave the situation feeling motivated about what they have learned seem more likely to have a future interest in what they have learned and are more likely to use what they have learned. It is also logical to assume that the more that people have had motivating learning experiences, the more probable it is that they will become lifelong learners. (1993, p. 4)

This suggests that professionals who are motivated by learning goals may be more apt to establish an effective cycle of practice-based learning.

The next section of this literature review turns to a discussion of learning by dietitians.

Professional learning among dietitians

Continuing education within the dietetics profession appears to have been viewed as a predominantly linear process. This viewpoint appears to have influenced much of the research on continuing education in dietetics (e.g., Dougherty & Tower, 1989; Flournory, 1984). Unfortunately, this viewpoint may not be consistent with current thinking about how people learn. In 1969 the American Dietetic Association (ADA) established a program of professional registration designed to encourage lifelong learning for professional competence. The ADA program has had a large influence on how professional learning has been viewed in Canada as well as in the United States. This program requires that dietitians acquire continuing education (CE) points through participation in approved CE activities. It was expected that dietitians would engage in continuous self-assessment to identify strengths and weaknesses, establish short- and long-

term goals for professional development, and select appropriate CE activities to meet those goals (Dougherty & Tower, 1989). The ADA program has assumed that dietitians effectively assess their professional strengths and weaknesses when identifying their professional development goals. However, Queeney and Smutz (1990) and Queeney (1995) concluded this may not be the case. The Quality Assurance Program of the College of Dietitians of Ontario (College of Dietitians of Ontario, 1997) is one very recent indicator that professional learning within the dietetics profession is starting to be viewed more broadly.

Consistent with traditional views of professional competence which were described earlier in this paper, the focus of continuing education in the dietetics profession has been almost exclusively on formal education activities. More than a decade ago the Report of the 1984 Study Commission on Dietetics expressed concern about the continuing education system and noted that there was little or no evidence documenting professional growth of dietitians as a result of continuing education. More recently, a number of authors have concluded that dietitians need to be effective lifelong learners if they are to remain competent (Balogun et al., 1995: Derelian et al., 1995; Parks, Fitz, O'Sullivan Maillet, Babjak, & Mitchell, 1995). Implicit in these conclusions was the suggestion that dietitians' continuing education practices are not sufficient to promote lifelong learning. Balogun et al. (1995) concluded that dietetics professionals need to be effective lifelong learners who are skilled at identifying their needs, selecting appropriate programs, and integrating new learning into their practice. Parks et al (1994) concluded that (a) dietitians must incorporate new and creative approaches to learning into their personal and professional lives if they are to remain competent in the face of numerous career changes and emerging competencies during their professional lives, and (b) a model of lifetime learning needs to replace the current teaching paradigm. The public expects professions to establish credentialing programs to provide assurance that professionals maintain and

improve their skills after entering practice. Providing this assurance requires professionals to be committed to lifetime learning, professional assessment, and development (Derelian et al., 1995).

The 1994 Future Search Conference, Challenging the Future of Dietetics Education and Credentialing: Dialogue, Discovery, and Directions, cosponsored by ADA and the Commission on Dietetic Registration examined a number of education and credentialing issues to provide the direction needed to reposition dietetics professionals in a changing marketplace. Conference participants concluded that (a) an expanded concept of continuing education is required for dietetics, and (b) both formal education and ongoing continuing professional education should emphasize personal discovery, self-analysis, and self-responsibility for learning (Parks et al., 1995). Unfortunately, the available dietetics literature does not appear to assist dietitians to determine if they are successful learners or to help them enhance the aforementioned skills.

There is little available data on the pursuit of learning by dietitians. Research which has been done has tended to examine participation in formal continuing education activities only. Flournoy (1984) discussed research in which she examined whether dietitians planned their own continuing education. She found that although the dietitians as a group recognized continuing education as valuable, only twenty percent of the sample population indicated a desire to assess their learning needs and to plan their own continuing education programs. The other eighty percent indicated they had no such desire. Rather, they were depending on the ADA to offer programs to satisfy registration requirements, not to meet their individual professional requirements. Reaching similar conclusions to those of Dougherty and Tower (1989), Flournory (1984) speculated that dietitians do not know how to plan effectively for their own professional growth. Based on her stated assumption that the major role of continuing education is to produce a change in performance on the job, she concluded that effective participation in continuing

education requires self-assessment of needs, formulation of goals, setting of priorities for learning, and assessment of achievements. She presented a tool to assist dietitians through this process by guiding them to reflect on their current knowledge and skills and then to reflect on opportunities for knowledge and skill expansion. She suggested that this can be accomplished by asking such questions as "What do I want to learn that I don't know now?" and "What do I want to do that I can't do now?".

Flynn, Bryk, and Neal (1991) investigated perceived continuing education needs of dietitians. The purpose of the study was to assist the American Dietetic Association (ADA) and other program providers to develop relevant programming. In this study, surveys were sent to 4000 dietitians and responses were received from 2408. Not surprisingly, respondents reported using a variety of mechanisms for obtaining continuing education (CE) credit, pursuing a large number of topics, and choosing topics close to their own practice area. Dietitians most preferred lectures and workshops with attendee participation. More than half reported that they sometimes use self-study. Relatively high percentages indicated they would not use study groups or journal clubs (44%), audiocassettes (42.7%), or computer-assisted instruction (47.4%) to obtain CE credit. The authors concluded that this may have reflected a lack of familiarity with these options, and that self-study materials need to be further explored to determine specific target markets and needs. It is important to note three things about this study: (a) it was conducted from the perspective of the provider of continuing education, not from the perspective of the learners, (b) respondents were asked to identify their current and preferred continuing education activities from among a list of 20 approved ADA continuing education activities; therefore, other preferred learning activities would not have been captured, and (c) dietitians may prefer lectures and workshops because they are most familiar with this way of receiving information. They are typically easy to attend, are not threatening, and are social gatherings which provide opportunities for peer

networking. A preference for lectures and workshops is apparently widespread amongst the professions. Geissinger, Humphrey, Hanft, and Keyes (1993) pointed out that workshops are one of the most popular continuing education activities offered to health professionals, although single workshops and lectures are generally considered to be ineffective because they cannot promote professional development that extends beyond knowledge acquisition to changes in attitude and behaviour.

In one study which does include informal practice-based learning, Reddout (1991) conducted a survey to determine dietitians' perceptions of the effects of continuing education on dietetic practice. This study distinguished between continuing education which was approved for CE credit and continuing education which was not approved. Approved continuing education included activities such as attending lectures, conferences, and workshops. Non-approved continuing education included activities such as on-the-job training, consulting with colleagues, attendance at grand rounds and patient care conferences, reading professional journals, participation on committees, and self-directed learning activities. Results showed a significantly greater perceived improvement in practice from non-approved continuing education than from approved continuing education. Reddout (1991) concluded that these activities are preferred because they allow immediate use of knowledge and skill and are usually relevant to the practice setting.

Literature cited thus far has discussed the importance of reflection and practice-based learning for health care professionals. This emerging awareness is occurring amidst a broader realization that fundamental changes are required within organizations to support individual and collective learning among those who work there. Having focused on the professional thus far, the next section of the literature review will discuss organizational factors that are believed to influence learning.

Organizational factors that support learning

Workplace learning is influenced by the organization in which one works (Merriam & Caffarella, 1991; Watkins & Marsick, 1992). The notion of organizational support for learning is quite complex because it must consider characteristics of organizations, characteristics of individual professionals who work there, and the relationship between the two. Willis and Dubin (1990) suggested that there is a reciprocal relationship between the personal characteristics of the learner and the features of the work environment, both of which continue to develop throughout a work life. Benveniste (1987) posed a question which is central to this thesis: how can managers design adaptive organizations that fully utilize the talents of the professionals who work in them, encouraging them to be problem-solvers and risk-takers, rather than paper pushers?

A number of authors (e.g., Benveniste, 1987; Gauthier, 1995: Hardy, 1995; Kofman & Senge, 1993; Marsick, 1987; Pierce, 1987; Queeney, 1995, Senge, 1990; Thompson, 1995) have suggested that many characteristics of contemporary organizations are not compatible with supportive learning environments. In fact, Thompson (1995) suggested that corporate systems, processes, and culture often discourage those behaviours most related to individual and collective learning. People who work in bureaucratic organizations are generally not encouraged to question norms and authority and are encouraged to follow established rules. Many authors (Gauthier, 1995: Hardy, 1995; Kofman & Senge, 1993; Marsick, 1987; Senge, 1990; Thompson, 1995) have concluded that supportive learning environments can only be developed if there is a fundamental shift in how organizations and their leaders view learning.

Almost a decade ago, Marsick (1987) concluded that organizations needed to view learning differently. She suggested that the dominant view of workplace learning was as follows: (a) individuals were responsible for learning to function effectively in jobs that were defined by organizations, (b) there was a focus on performance that could be

quantified and criterion-referenced, and an emphasis on training of job-related knowledge and skills through classroom-based, formal group activity, (c) learning design was based on a deficit model that began with an analysis of necessary behaviours, included measurements of individuals against standards, and provided training and other reward systems to ensure that individuals functioned with minimal deviation from the standard, (d) problem-solving was viewed as finding the best objective solutions through linear, step-wise processes, and (e) personal development was considered separate from work-related development. It appears that this paradigm was similar to that which shaped traditional thinking about learning by professionals. At that time, Marsick (1987) postulated that a new paradigm of workplace learning was emerging which would involve (a) mutual participation in fundamental decisions about organizational directions, collaboration in setting and achieving goals, and mutual negotiation of roles and responsibilities, (b) learning through daily interaction and experience, rather than training or education, with a focus on reflection by individuals and working groups upon their experience, and (c) decision making that is intuitive as well as logical.

In the intervening decade, a number of authors (e.g., Kofman & Senge, 1993; Senge, 1990; Watkins & Marsick, 1992) have further developed the themes described by Marsick (1987). Most notably, there has been a considerable amount written recently about the concept of learning organizations (Gauthier, 1995: Hardy, 1995; Kofman & Senge, 1993; Senge, 1990; Thompson, 1995). Although this concept is still not well-defined, learning organizations are those which foster individual and collective learning among those who work there. Marsick and Watkins (1992) suggested that the notion of continuous learning for continuous improvement is a fundamental aspect of learning organizations.

Kofman and Senge (1993) stressed that there are dysfunctions present in contemporary organizations which are deeply rooted in dysfunctions of the larger culture;

therefore, the required shifts in views about learning extend beyond individual corporate cultures. They suggested that basic problems with current paradigms include (a) the fragmentation of problems into pieces, and (b) the habit of changing only in response to outside forces, when real learning springs from aspiration, imagination and experimentation. Gauthier (1995) extended this discussion to health care organizations. He suggested that the following reasons contribute to the challenge of building learning healthcare organizations which are healthier places to work, with fewer behaviours such as blaming, workaholism, excessive stress, and burnout: (a) hospitals are highly fragmented organizations due, in part, to a high degree of specialization among professionals which leads them to identify strongly with their own professions, (b) polarizations exist between a variety of groups (e.g., between physicians and administrators, physicians and nurses, specialists and primary care providers) which aggravate a lack of alignment and communication, and result in minimal understanding of each other's issues, (c) healthcare organizations have a history of reacting to external forces, which has resulted in too much emphasis on efficiency, quick fixes, and financial performance and insufficient emphasis on long-term results, and (d) the fear which exists among physicians, managers, and employees of healthcare organizations, in response to the changes and uncertainties that are occurring within healthcare, is an obstacle to learning. He suggested that economic survival becomes the main motivator for many providers, preventing them from learning through experimentation and making mistakes.

The literature on learning organizations is relevant to this thesis because it (a) discusses the fundamental importance of reflection, not only for individuals, but for organizations, and (b) reinforces the notion that a broader view of learning is required. One could speculate, based on a review of this literature and knowledge about contemporary healthcare organizations, that (a) the type of informal learning which is being investigated in this thesis would not be widely acknowledged or supported by many

health care organizations, and (b) many dietitians would not perceive their work environments as being supportive of learning. The literature review now turns from a discussion of learning organizations to a discussion of organizational practices which are believed to influence the growth and learning of individuals who work there.

Structural factors affecting learning.

Current work environments are largely a product of the bureaucratic model (Benveniste, 1987; Kofman & Senge, 1993). The bureaucratic nature of organizations and the growth of routinization within them, may be significant factors which lead to suppression of thinking and creativity on the part of professionals (Benveniste, 1987; Hardy, 1995; Skruber, 1987). Routinization is increasingly a factor in health care organizations that strive to promote consistent and cost-effective care and to minimize variation through the use of standardized approaches to providing care. Bureaucratic organizations tend to overemphasize rules as a substitute for trust (Benveniste, 1987) and to exercise authority in a way that undermines people's desire to learn (Kofman & Senge, 1993). Bureaucratic organizations have been designed for conformity rather than innovation, and have difficulty adapting to a changing environment (Skruber, 1987). Typically, control is tight and rests with only a few people. Structures which were created to organize the flow of information and promote efficiency can be barriers to exploration and creativity. This is a complex problem. Although routines may be necessary, they may result in professionals feeling that they have insufficient discretion to act, that they are not encouraged to think and solve problems, or that they aren't rewarded when they do (Benveniste, 1987). It appears that a balance is required between exercising management control and establishing standards to promote consistent and safe practice, on one hand, and allowing professionals sufficient discretion to design and carry out their responsibilities without stifling thinking, on the other hand. The work by Benner et al. (1996) and the conclusions of Benveniste (1987) suggest that standardized approaches

may be more appropriate for some stages of expertise than others. In fact, an overemphasis on rules may cause professionals to be maintained at novice stages of practice.

People flourish in organizations with high degrees of participation, teamwork, shared power, collaboration, and an open sharing of information (Hardy, 1995; Pierce, 1987). Hardy (1995) suggested that giving away power must be accompanied by defining the boundaries of the job, including a clear definition of roles and responsibilities and the limits of discretion. Within these boundaries, he suggests, lie room for initiative and personal responsibility. Skruber (1987) discussed the need for organizations to be clarifying learning environments where every person is clear about his role and about what is going on in the organization in general. He suggested that most organizations don't admit to having contradictory layers of information, beliefs, or values, nor do they have a systematic way to help employees learn what is really going on. This results in employees being unable to make sense of the many complex events occurring in the workplace. This, in turn, leads to apathy, rigid thinking, and dependency.

Organizational culture.

The culture of an organization can affect learning (Benner et al. 1996; Benveniste, 1987). A learning culture is enhanced by a sense of trust and enthusiasm (Benner et al. 1996; Benveniste, 1987; Hardy, 1995; Pierce, 1987). Because it is difficult to trust someone that you don't know or have never seen in action, Hardy (1995) stressed that it is important to have opportunities for togetherness. Environments which are threatening, which punish early mistakes in judgment, or set up barriers to asking questions discourage learning (Benner et al. 1996; Benveniste, 1987; Hardy, 1995; Ryan, 1995). Psychological and social risks may exist in environments which foster competition rather than cooperation, status rather than competence, fear rather than help, criticism rather than feedback, conformity rather than innovation, and dependence rather than autonomy

(Skruber, 1987). An organizational culture may value teaching, support, and collaboration, or it may emphasize individual achievements and treat knowledge as the private possession of one individual. Benner et al. (1996) suggested that a positive learning culture views experiential learning as a common good to be shared, rather than an individual possession or a source of advantage or power. Hardy (1995) suggested that learning organizations are built upon an assumption of competence, where individuals are expected to perform to the limits of their competence with a minimum of supervision. Too often, he claimed, organizations have operated on an assumption of incompetence. Characteristics of this type of organization are controls and directives, rules and procedures, layers of management, and pyramids of power. In contrast, learning organizations tend to be flatter, they emphasize early training and acculturation to the ways and values of the organization, and they focus on ensuring competence before the person is allowed to operate. Kofman and Senge (1993) suggested that an overemphasis on competition makes looking good more important than being good. The fear of not looking good is one of the greatest enemies of learning. To learn, people need to acknowledge that there are things that they don't know, and perform activities that they are not good at. They emphasized that value must be placed on learning, not just knowing.

The nature of evaluation can affect learning (Benner et al. 1996; Benveniste, 1987). Evaluation can be a learning experience and a way to find out what others think of one's work; however, learning is affected when evaluation is tied to reward and punishment. When people feel they must cover up mistakes and inadequacies and hide gaps in knowledge, opportunities for learning are reduced (Benner et al. 1996; Benveniste, 1987). Unless there is a sincere tolerance of mistakes, in the spirit of an opportunity for learning, professionals will want to look good and will try to look as though they know what they are doing, even if they have no idea how to proceed

(Benveniste, 1987). When professionals imply that competence means knowing everything, they create a demand for perfection which can create fear, secrecy, arrogance, and possible incompetence (Sanford, 1989). Benner et al. (1996) agreed. They suggested that beginners must work in environments where they feel safe asking questions. Furthermore, beginners' clinical inexperience must not be judged as personal inadequacy, but recognized as an expected phase in the development of clinical judgment. Examination of errors and narratives of learning can occur in the spirit of doing better next time, in the spirit of troubleshooting and shared responsibility, or in the spirit of blame and defense. Although sources of error need to be identified to prevent future problems, a climate of shame and blame disrupts leaning. Beginners should certainly be held accountable for their actions, but their assignments should be geared to their level of expertise.

Professionals need a non-threatening way to discover what they don't know. Most are conscientious and may be honestly unaware of their own weaknesses. Professional work is difficult to evaluate using traditional means. Trying to define objective evaluation criteria is fraught with problems; therefore, evaluation criteria are not always available or agreed upon. McCrone (personal communication, April, 1995) stressed the need for ongoing performance feedback from other people, including peers or clients. If done in a supportive manner, this is invaluable in helping professionals discover what they do not know or cannot do (Sanford, 1989). Benveniste (1987) stated that professionals prefer peer-review and self regulation. He suggested that constant, formal performance appraisals do not fit well with concepts of discretion and autonomy, and they discourage risk-taking and learning behaviour. He suggested that informal rewards may be more meaningful. For instance, visibility within the organization may be a valued informal reward. In this example, managers can provide opportunities for professionals to have

more visibility and, in so doing, increase their commitment to the organization (Benveniste, 1987).

Brown (1995) discussed the role of performance appraisals in managing organizational culture. He pointed out that the intended purpose of a performance appraisal system should determine whether it is oriented toward the future or the past, what methods are used, and who will appraise. For instance, organizations that wish to develop a culture that is oriented to the future and those which value the personal development of their staff will use a performance appraisal system that is highly oriented towards the future. Also, the choices of who should appraise should be made with reference to the desired culture. For instance, appraisal by an immediate manager may reinforce the organizational hierarchy; self-appraisal may produce a culture of self-critical, individualized employees; peer appraisal may contribute to a culture of openness, trust, and mutual respect; and customer appraisal may help to promote responsiveness to the environment.

The learning culture may also be affected by the organization's view of its role vis a vis the professionals who work there. For instance, an organization may see itself as a place in which professionals engage in learning as a necessary component of their professional practice, or it may view itself simply as a practice setting where professionals work. An organization may view learning for organizational productivity as quite separate from learning for personal growth and development. Marsick (1987) claimed that this distinction is inappropriate because people's identity and growth are integral to learning. Individuals are most productive when they participate fully in negotiating their contribution to shared organizational goals and when the work is personally meaningful.

Bova (1987) suggested that organizations need to recognize the value of mentoring and to foster mentoring relationships which can foster personal and professional growth for both the mentor and the protege. Supportive bosses may be mentors (Bova,

1987); however, Knight Wilcox (1987) suggested that it is difficult to have a mentoring relationship with senior colleagues who are seen as evaluators rather than coaches. The identification of more expert colleagues to whom other professionals can turn, as proposed by Benner et al (1996), promotes the development of mentoring relationships.

Research by Benner et al (1996) illustrated the value of narrative as a way of pooling and creating knowledge and of learning from others' experience. It suggested that storytelling, especially mistake stories and horror stories, extends experiential knowledge in a way that is much more memorable than lists of warnings or rules that must be memorized out of context. These authors concluded that telling and listening to narratives that capture the best of practice helps to identify and extend innovations in practice. This can improve the communication of clinical understanding, facilitate the development of clinical knowledge, and extend clinical excellence. They also suggested that narrative be used as a valuable source of organizational learning. They suggested that it is crucial to articulate expert practice in order to design organizations and develop policies that facilitate it. Narratives of problems, conflict, and ethical dilemmas can be used to correct barriers to good practice. Benner et al. (1996) concluded that expert nurses often must overcome significant organizational impediments to their practice, and that, too often, organizational structures and policies are geared to minimal expectations. A focus on minimal expectations covers over the examples of excellence that should be highlighted and extended in practice and places the focus of organizational leaders on improving deficiencies rather than designing organizations for expert practice.

Aligning professionals and organizations.

The literature suggested that there must be an alignment of personal and organizational goals for professionals to flourish and learn (Benveniste, 1987; Pierce, 1987). Benveniste (1987) suggested that there is potential for professionals to have dual allegiances that managers of professionals need to be aware of: professionals identify both

with the organization they work for and with their profession. Professionals' commitment to organizational goals may be affected by a strong sense of professional calling. This may lead them to internalize the values of the profession more strongly than those of the organization, thereby having an orientation to problems that transcends organizational boundaries. This can create a source of conflict, with professionals having a greater commitment to the public, in contrast with managers' greater commitment to the organization. Managers also must be sensitive to the nature of professionals' personal goals and career objectives. Benveniste (1987) suggested that when there is discontinuity between personal or professional goals and organizational goals, professional self-interest may cause individuals to be more committed to their personal or professional goals than to those of the organization. He also suggested that the distinction between professional authority and management authority can also be a source of conflict, which has to do with differing perspectives of managers and professionals, even when managers have practiced as professionals. Managers are encouraged to see the big picture in order to obtain an overall view of a situation. Professionals, on the other hand, often define problems more narrowly. Queeney (1995) suggested that these multiple perspectives may cause employers and employees to regard continuing education very differently. For instance, an employer who is interested in ensuring that an employee meets current job requirements may take a short-term view of an educational need, whereas an employee who is primarily interested in career growth may view his or her educational need from a longer-term perspective. According to Skruber (1987), the real test of a supportive learning environment is the degree to which there is support for time spent on learning for both immediate results and longer-term outcomes.

Benveniste (1987) discussed the complex relationship between professionals and the organizations in which they work. He contended that managing professionals is messy for a number of reasons. In part, this is due to a variety of factors that can affect a

professional's commitment. Benveniste (1987) stated that managers must recognize that professionals need to be committed to and enthusiastic about their work for them to perform well. If professionals are to remain committed, they need to have a sense of success. Because professionals are motivated to perform tasks that they believe in, they must believe that their efforts are not in vain. Their commitment can be eroded if they are asked to perform tasks they can't accomplish, or if they are evaluated negatively when they fail to achieve what cannot be achieved (Benveniste, 1987). Benner et al (1996) discussed this dilemma as it relates to nursing practice. When nurses are faced with unreasonable demands, limited resources, and inadequate staffing to meet caregiving requirements they may feel a sense of disillusionment and personal failure. In such situations perceived failure should not be attributed to lack of skill or experience, but to systems that have failed. Because learning to recognize when working conditions are unsafe is also experientially learned, inexperienced nurses may need help to make these distinctions.

It seems logical to assume that committed and enthusiastic professionals would be eager to learn and would actively seek to enhance their professional effectiveness; similarly, a lack of commitment and enthusiasm would deter practice-based learning. Benveniste (1987) indicated that the link between commitment and motivation is particularly important when work conditions are difficult, career opportunities are limited, and economic rewards unattractive. The significance of these relationships in the current economic climate within Canadian health care institutions is enormous. Personal observation by this author suggests that many dietitians are working in difficult conditions with limited career opportunities, altered expectations of their roles, uncertainty about the future of their jobs and possibly the future of the organizations in which they practice. Staffing reductions are prevalent and there seems to be an ongoing need to do more with less. Therefore, it is likely that dietitians and other health care professionals are finding it particularly difficult to feel successful in this environment of change and uncertainty.

Summary

This literature review provided the context for an exploration of informal professional learning among dietitians. It began with a discussion of the need for expanded views of professional competence and continuing education among health care professionals. The literature reviewed concluded that (a) professionals cannot rely upon knowledge acquired through traditional, formal continuing education activities as their only sources of professional learning, (b) knowledge acquired from practice is essential for competent professional practice, and (c) methods of supporting learning from practice need to be identified (Benner, 1984, Benner, et al., 1996: Cervero, 1988, 1992; Houle, 1980; Marsick, 1987; Schon, 1983). This section was followed by a brief discussion of personal factors that might influence dietitians' participation in professional learning and by a review of literature which discussed professional learning by dietitians. The literature review concluded with a discussion of organizational factors within practice settings which might affect learning. Literature on learning organizations was featured.

CHAPTER 3

Method

Research Questions

This research sought to answer the following specific questions:

1. What are dietitians' views about the nature of professional learning, particularly that which occurs in practice settings?

2. What professional learning do dietitians engage in and perceive to be worthwhile?

3. What, if anything, does the concept of reflective practice (Schon, 1983; 1987) mean to dietitians and to what extent do they engage in reflective practice?

4. What organizational factors are perceived by dietitians to support their learning from practice, thus enhancing their professional competence?

Finally, this research sought to investigate relationships between continuous professional learning and the following categories of variables: (a) organizational and peer support for participation in activities which foster learning from practice, (b) the dietitian's stage of professional expertise, based on the levels proposed by Benner et al. (1996), and (c) personal and organizational factors which may influence participation in learning.

Preliminary Steps

An extensive literature review lead to development of a theoretical framework for this research. A copy of the research proposal was submitted to the Faculty of Education for review and ethical approval.

Data Collection

This research was non-experimental and exploratory in nature and involved both qualitative and quantitative data collection. The qualitative component was both a prerequisite to and a companion to the quantitative component.

Qualitative instrumentation and procedures.

The first phase of this research involved conducting audiotaped interviews to explore clinical dietitians' views on professional learning and to gain insight into dietitians' vocabulary about professional learning. This was necessary to ensure that questionnaire items contained language that was relevant to clinical dietitians. Questions for the interviews were based on a review of the literature and were chosen to address the research questions. (See Appendix A.) Internal reliability of the interviews was ensured since the researcher was the only individual to conduct the interviews and to handle the data.

The collection of qualitative data deviated somewhat from the plan; therefore, both will be described. The researcher had planned to conduct two focus groups, each consisting of six to eight dietitians who were not known by the researcher. Prior to these sessions, the focus group questions and methodology were to be pre-tested to determine if the proposed questions were clear and meaningful to participants, thus allowing the researcher to have confidence that the focus groups would yield sufficient data.

Prior to conducting the pre-test interviews, the principal researcher wrote to each potential participant to explain the purpose of the research and to extend a personal invitation to participate in a group interview. (See Appendix B.) Consent forms were signed by all who agreed to participate. (See Appendix C.) A confirmation letter was sent to thank each volunteer, to provide details about the time and location of the session, and to provide participants with a statement to think about prior to the session. (See Appendix D.)

Krueger (1994) suggested that it may be necessary to offer an incentive to participate in a focus group, and that non-monetary incentives may include (a) a positive, upbeat invitation, (b) the opportunity to share opinions, (c) refreshments, (d) a convenient meeting location, and (e) an invitation which builds on some existing relationship. The researcher anticipated that dietitians would perceive the opportunity to contribute to the

knowledge base of the profession and to participate in a new experience as incentives to participate. In addition, participants were provided with lunch and invited to select the most convenient time for them. In two cases, none of the suggested times were convenient for participants so the researcher arranged alternative times at participants' worksites.

The pre-test interviews were held as planned. Fourteen dietitians were invited to participate and ten agreed to do so. Four interviews were held: one individual interview and three group interviews with four, three, and two participants respectively. The researcher acted as moderator for these sessions. As much as possible, the researcher attempted to adhere to a focus group format as suggested by Krueger (1994) and Morgan (1988). The introduction and proposed questions were read aloud and the participants were asked to comment on (a) the clarity of each question, (b) whether each question meant anything to them, and (c) whether they thought the question would elicit the desired information. Because participants were known to the principal researcher, they were not required to answer questions if they did not wish to. Instead, they were invited to comment on how they thought dietitians, in general, might answer the questions. However, most participants chose to answer the questions. Each interview was audiotaped. The researcher made some notes to record impressions during the sessions. Within 24 hours, tapes were transcribed onto twenty-three pages of single-spaced data. The researcher reviewed the notes and added written notes of impressions and observations.

After analysis of the interviews, the researcher determined that additional qualitative data was not needed. Therefore, no focus group interviews were held. The interviews had provided valuable information about clinical dietitians' vocabulary about professional learning and insight into some issues that appeared to be relevant to clinical dietitians about professional learning. Interview data is presented in chapter 4.

Quantitative instrumentation and procedures.

The second phase of this research involved developing and mailing a questionnaire to investigate professional learning by clinical dietitians in order to answer the previously identified research questions. Questionnaire items were developed based on the literature review, as presented in chapter 2, and an analysis of the interview data. More than one indicator was developed for each construct of interest (e.g., reflective practice, learning that occurs in practice settings) in an attempt to capture more completely the totality of the concept in question (Bryman & Cramer, 1994). The questionnaire was reviewed by three educators and two clinical dietitian volunteers. They were asked to comment on clarity and conciseness of items and instructions and to indicate items that appeared to be biased. Following this review, modifications were made to the questionnaire to improve clarity of instructions and to reduce length. The questionnaire was then pre-tested by the same two dietitian volunteers. They provided additional feedback on legibility, clarity of items and instructions, ease of completion, and time taken to complete the survey. In addition, they were asked to identify any items that they perceived to be offensive. A form was developed to elicit their feedback. (See Appendix E.) Following this review, additional minor modifications were made to improve clarity of the questionnaire.

The questionnaire consists of four parts. (See Appendix F.) Part A addresses the research question, "What professional learning do dietitians engage in and perceive to be worthwhile?" Respondents were asked to identify professional learning activities they engaged in during the past 12 months and to estimate frequency of participation. A list of activities was included and additional space was provided for participants to identify other activities. Using a Likert-type scale, respondents were asked to indicate the value of each activity as a source of professional learning for them.

Part B of the questionnaire addresses dietitians' views about learning and their experiences as learners within practice settings. Respondents were asked to use a Likert-type scale to indicate the extent to which they agreed or disagreed with a series of

statements. Some items address professional learning that dietitians engage in and perceive to be worthwhile; however, the focus of Part B is on learning within the practice setting. Supported by the literature and the interview data, the researcher postulated that the following categories of activities would foster learning within the practice setting: (a) interaction with colleagues (e.g., participating on patient care teams and committees, discussing professional successes and/or mistakes with colleagues), (b) actively reflecting on past experience for the purpose of building upon experience, and (c) valuing and seeking feedback from others. Items were developed to address each of these categories of activities. The following survey items were included to address dietitians' perceptions about the value of interaction with colleagues: 18, 29, 30, 33, 34, 37, 38, and 41. Items 23, 26, and 32 were included to identify a variety of types of professional learning that dietitians engage in and perceive to be worthwhile. Items 19, 21, 24, and 28 address the research question, "What, if anything, does the concept of reflective practice mean to dietitians and to what extent do they engage in reflective practice?" Finally, other items were included to identify personal factors which may influence participation in learning, as suggested by the literature review. Items 35 and 39 address orientation toward current or future goals; items 42 and 43 address personal priorities; and items 17, 22, 25, 27, 31, 36, 40, and 44 address confidence in one's abilities.

Part C is designed to obtain information to answer the research question, "What organizational factors are perceived by dietitians to support their learning from practice?" Respondents were asked to use a Likert-type scale to indicate the extent to which they agreed or disagreed with a series of statements about their practice setting. Based on the review of literature, the principal researcher postulated that following characteristics of organizations would influence the degree of organizational support for learning: (a) the extent to which an organization views mistakes as opportunities for learning, (b) the extent to which individuals are encouraged to seek improved ways of doing things and to question established practices, (c) the extent to which individuals feel that their

contributions are valued, and (d) the extent to which individuals feel they have control over their immediate work situation.

The final section of the questionnaire, Part D, is designed to obtain demographic information about respondents and information about their practice settings which may influence participation in learning. Demographic variables were selected on the basis of the literature review and the researcher's judgment of those which may be relevant. The rationale for including each demographic variable is presented briefly. Number of years in practice may influence the following: ways of thinking about professional learning, experience with professional learning, stage of professional expertise, motivation with respect to career aspirations, commitment to organizational goals, perceived organizational support, and professional confidence.

The number of clinical dietitians in an organization may affect opportunities for learning from and collaboration with peers. Number of dietitians is an indirect indicator of the size of an organization. Size, in turn, may affect organizational structures and culture. The organizational structure (e.g., traditional departmental structure, program management, self-managed teams) may affect many things: the extent to which a dietitian's manager understands and supports professional learning needs; the frequency, quality, and type of feedback and/or performance appraisal provided; and opportunities for interaction with other clinical dietitians and other health care professionals. Employment status (e.g., full-time, part-time, temporary) may influence the extent of organizational support for professional learning, the degree of personal involvement in professional learning, the extent to which other elements in the person's life compete for and influence personal and professional priorities, and the orientation toward long-term or short-term goals. Finally, level of academic achievement may influence views about and involvement in professional learning.

Participants

Focus group participants were clinical dietitian volunteers who were employed in two acute-care hospitals and one long-term care facility in a city in Southeastern Ontario. Participants were experienced clinical dietitians who had practiced for at least five and up to thirty-five years. Fourteen dietitians were invited to participate and ten agreed to do so. All participants were employed by teaching hospitals affiliated with an academic health sciences centre at a Canadian University. All participants provided clinical teaching experiences for dietetic interns.

Survey participants were clinical dietitians who were current members of the College of Dietitians of Ontario (CDO) and employed in Ontario. Exclusion criteria are described later in this section. A letter requesting permission to use the CDO mailing list can be found in Appendix G. The College of Dietitians of Ontario was approached for a variety of reasons. Most importantly, all dietitians who practice in Ontario must belong to CDO. Membership in professional associations, such as Dietitians of Canada, is voluntary. Because there may be a relationship between voluntary membership and motivational or financial factors associated with professional learning, use of the CDO membership list was anticipated to minimize potential bias. Secondly, CDO was able to provide a mailing list that was categorized by area of dietetic practice (e.g., clinical, administrative, or community dietetics). This made it possible to survey clinical dietitians only, thereby reducing variability associated with different areas of dietetic practice. Finally, it was anticipated that CDO would be sufficiently interested in the results of this research to provide financial assistance for a large mailing. The principal researcher sought and obtained financial assistance from CDO. (See Appendix H).

The mailing list contained names of 686 people who had identified themselves as clinical dietitians. Home addresses were listed for some people and business addresses and titles for others. Based on available information, it was evident that some people on the list were not working as clinical dietitians in health care institutions. The researcher

excluded 91 names from the list in order to survey a more homogeneous group that was representative of clinical dietitians. Dietitians whose title included the word director, assistant director, manager, coordinator, supervisor, or administrative dietitian were excluded because the researcher assumed that these dietitians were in managerial positions. This may have influenced views about organizations, ability to participate in decision-making, and learning opportunities encountered. The following were also excluded because they were not perceived to represent typical jobs and/or places of employment for clinical dietitians: dietitians whose title included research associate, researcher, dietary assistant, technician, or consultant; dietitians who worked in a Board of Education, business or industry, university, health units, Home Care programs, medical clinics, or in private practice. Dietetic interns, student members, those working in other professions, and those working outside of the Province of Ontario were also excluded. This left 585 clinical dietitians who worked in Ontario.

The letter of invitation to participate in the survey research can be found in Appendix I. The reminder letter which was sent to all non-respondents three weeks after the initial mailing can be found in Appendix J.

It would have been helpful to have had business titles and addresses for everyone. Without access to this information, nine surveys were sent to dietitians who were employed in Home Care and a few to dietitians who were employed in clinics and other less typical work settings. The Home Care responses were not analyzed because most of the Home Care dietitians had been previously excluded. However, the remaining surveys were included. In part, this was because terminology describing place of employment was sometimes unclear and the researcher did not want to exclude responses that should have been included. Due to the small number of responses in this category, it was felt that this data would not bias the results.

Data Analysis

Qualitative.

The audiotapes of the interviews and the interview notes were transcribed within 24 hours of each interview. Analysis involved reducing the interview data and categorizing it into major themes in order to provide insight into the research questions. Key words and phrases were used to describe (a) participants' views about professional learning, particularly within the practice settings, (b) professional learning that participants engage in, (c) participants' views on the meaning of reflective practice, and (d) participants' perceptions about the influence of organizational factors on their learning. This provided a basis for selecting vocabulary and questions for inclusion on the survey questionnaire. Quotes were selected to illustrate the themes.

Quantitative.

Data analysis was facilitated using Systat 6.0 for Windows (Wilkinson, 1996). The questionnaire data were characterized by descriptive statistics, including frequency distributions and means. Linear relationships across the data were investigated through the use of Pearson's product moment correlations. Factor analysis, specifically principal component analysis, was performed to explore the relationships between the variables and to determine the degree to which the large number of variables could be reduced to a smaller number of underlying dimensions. Variables included in the factor analysis were those that indicated respondents' experiences and views about professional learning and their perceptions of the organizations in which they practice. These variables are located in parts B and C of the questionnaire. Factor scores were determined for respondents. A more detailed presentation of the correlations and the factor analysis is presented in chapter 4. Finally, regression analysis was performed to explore the nature of the relationships between the factors and one's perception of being a continuous learner.

Limitations and Assumptions

Qualitative.

The fact that interview participants were known to the principal investigator and to each other may have limited their openness to a certain extent; however, participation was voluntary, participants were not required to answer the questions, and they appeared to speak candidly. The richness of the data and the emergence of common themes suggest that it is appropriate to have confidence in the qualitative component of this research.

Quantitative.

There are limitations associated with the nature of the research questions and with the use of quantitative methodology to address some of these research questions:

1. Research on practical intelligence is an emerging area of study which has been approached from a variety of theoretical and methodological perspectives. Research is preliminary, somewhat limited, and scattered throughout the literature (Wagner & Sternberg, 1986). The process of learning from practice, or acquiring practical intelligence, is not well understood. Thus, the theoretical underpinnings of this thesis were based on an evolving body of literature from a variety of sources.

2. Concepts such as reflective practice, intuition, and expertise are complex, and not easily operationalized using a questionnaire.

3. For a variety of reasons, respondents may have difficulty identifying and describing learning that occurs within their practice. Traditional connections between learning and formalized Continuing Education activities may limit respondents' frame of reference. They may think only in terms of planned learning activities which they undertake to acquire new information, and may not recognize learning that is embedded in their practice. Because learning is a personal experience which is contextual in nature, it may be difficult for respondents to identify specific learning situations retrospectively when they are no longer (a) engaged in the learning, and (b) located in the setting where

the learning occurred. Furthermore, they may not acknowledge learning unless they perceive it to be truly significant.

CHAPTER 4

Results

The results of the qualitative component will be presented first, with an emphasis on key themes that emerged from the data to address the research questions. Respondents' views on recent professional learning experiences will be featured to illustrate the themes. This will be followed by a presentation of quantitative data, beginning with a demographic profile of the respondents. Quantitative data describe (a) professional learning that respondents engage in and judge to be worthwhile, (b) participants' views of themselves as learners, and (c) participants' views about organizational factors which may influence learning. This chapter concludes with an examination of relationships that emerged from the quantitative data.

Qualitative data leading to instrument development

Three outcomes of the interviews were particularly important. First, common themes emerged from the four interviews about professional learning that is valued by participants. To a large extent, these themes verified the key elements of professional learning that were featured in the literature review. These themes are presented in the next section of this chapter and are discussed further in chapter 5. Second, the interviews provided useful clues about how to word specific questionnaire items in a way that would be meaningful and non-offensive to respondents. For instance, the principal researcher asked interview participants to discuss learning that had enhanced their competence. The word competence was perceived by participants in the December 10 interview to represent entry-level practice, which was not the meaning the principal researcher intended to convey. Therefore, alternate wording was chosen for the questionnaire. Third, the interviews also confirmed the difficulty of capturing data on reflective practice and on stages of professional expertise using a questionnaire. This is discussed later in this chapter.

Views on recent professional learning experiences.

Each interview began with participants being asked to describe the experience that came to mind when they were asked to "think about a recent experience where you learned something that enhanced your competence as a dietitian or helped you to understand your work differently". Responses to this request were varied. At least three of the ten participants had difficulty identifying a specific learning experience. Excerpts from the interviews are presented to illustrate this difficulty. In one group interview (December 10, 1996), there was a long silence before Participant E responded:

> I guess I found it just very difficult to come up with something specific. Maybe if there had been a little bit more background as to some of the types of information you were looking for. I just found it sort of vague and difficult to come up with something very specific. Was it just my thinking?

In response to her question, Participant B said, "No. I agree with you."

In another group interview (December 13, 1996), Participant G was frustrated by her inability to identify a specific example that she considered worthy of mentioning to the group. She was concerned that she had no "good story" to tell about a significant learning experience. It is difficult to know if her frustration was enhanced because she had just listened to Participant H share a very practical example of a learning experience. The following are excerpts from the monologue of Participant G: "I learn by experience all the time, and they are usually just silly little things ... I just find that my learning is daily. I'm always learning something new, and it's always just sort of little...."

However, the other seven respondents were able to identify recent learning experiences that they considered valuable. Participant A (December 5, 1996) identified a recent workshop she attended and found to be beneficial. Participant F (December 13, 1996) identified a literature review she had conducted to investigate a question that had arisen within her practice; however, she went on to say that she had to think quite awhile before she was able to identify a specific example of learning.

Learning from practice.

Participant H (December 13, 1996) and Participant I (January 2, 1997) identified learning that occurred within their practice. In both instances, learning stemmed from an immediate need to learn in order to provide care in specific patient care situations. The first quote is an example of knowledge that can be acquired only from practice:

> I was posed with a problem that I had to convert from a continuous to a cyclic feeding in TPN [total parenteral nutrition]. I hadn't done that before. I was talking to people and it wasn't clicking, and I finally sat down, got my pad and pencil and worked out a timetable and then, all of a sudden, it clicked and I felt like I could teach it to someone else right away....at first, it was sort of like a hill that I couldn't climb or a mountain that I couldn't climb and I thought, how am I going to do this? Participant D had given me an article, so I did it through reading an article and then sitting down and working it out on paper and actually trying to see it, drawing it, and seeing the times and the TPN solutions (Participant H, December 13, 1996).

The next quote illustrates a number of things: (a) how theory and practice intertwine to result in valuable learning within a practice setting, (b) the value of networking with more experienced dietitians to address questions that arise from practice, and (c) how learning generates confidence in one's ability.

> This is going back to a patient of mine that I saw, and I work in an NICU [neonatal intensive care unit] setting, which is a relatively new role for me, and there was one particular baby with short bowel syndrome, and I didn't really have a lot of experience, and I found that I was given a lot of responsibility. Basically, I was given the responsibility of ensuring that the baby wasn't malnourished, and making decisions, ... , about nutritional intervention. And I found that really enhanced my competence as a dietitian because what I ended up doing was ... researching the topic thoroughly. That included literature searches, looking at my textbooks from university, other textbooks, really networking with other dietitians that had a little bit more experience, and I found that certainly helped me understand the disease and the actual condition of the baby a lot more, and it gave me a lot more confidence, and I learned a lot (Participant I, January 2, 1997).

Learning from colleagues.

Learning through meaningful collaboration with colleagues, both dietitians and other professionals, emerged as a prominent theme from the interviews and verified information that had been featured in the literature review. Interview participants

identified that collaboration with professionals in other disciplines led them to have expanded perspectives of situations. This, in turn, fostered an appreciation of how other professionals approach situations from different points of view. There will be further discussion of this theme in chapter 5.

Two participants, Participant D (December 10, 1996) and Participant J (January 2, 1997), cited examples of learning that resulted from observing other professionals or from discussing common practice issues with other professionals. Although some learning involved other dietitians, valuable learning also occurred as a result of interaction with professionals in other disciplines. Participant J indicated that a close working relationship with a psychologist had enhanced her competence as a dietitian. Understanding the perspective of the psychologist had enabled her to achieve a more complete understanding of patients' situations or problems. She reported that this had helped her to establish more manageable or meaningful goals with people when she knew the underlying problem contributing to the disorder. The following quote, from Participant D, illustrates the value of learning through meaningful interaction with colleagues:

> A couple of times recently, I've sat in with someone from another profession ... with a patient together, and, ..., from how they would approach a patient, and picking up some skills that they would use, or getting the feedback from them about how I was interacting with the patient. So, I found that useful in trying to, kind of, incorporate some of the skills that they had, or hearing their feedback in terms of what I was doing (December 10, 1996).

Participant D also spoke about a valuable learning experience that resulted from a recent visit to another hospital. She and two other members of an interdisciplinary patient care team, a physician and nurse, visited a similar team in another hospital. Through discussion with the other team, the participant and her colleagues identified changes they could make to their individual and team roles. She said, "We got some really good ideas".

Reflective practice.

Most participants were unfamiliar with the terminology, reflective practice, although some described activities in their practice that indicated they engaged in reflection. In the December 10 interview, participants laughed at the question, "What, if anything, does the concept of 'reflective practice' mean to you, and to what extent do you engage in reflective practice?". The same question in the December 13 interview prompted Participant H to say, "...you're using jargon that I'm not used to". Participants considered the term self evaluation to be more meaningful to them. Three participants, Participants A, I, and J, indicated that reflective practice meant looking at what they had done in the past. Each of these three respondents cited instances when they had reflected on situations, in an effort to improve their practice in the future. Analysis of the discussion on reflection suggests that there may be differences in the extent to which participants engage in reflection. Furthermore, this discussion suggests the difficulty of trying to use a questionnaire to identify the degree to which dietitians engage in reflective practice. Analysis of the quantitative data confirmed this difficulty.

How participants view themselves as learners.

An association between learning and confidence emerged as a theme from the interviews. Participants reported an increase in confidence as a result of (a) learning that led to successful performance, and (b) knowing that their contributions were valued by other health care team members. Excerpts from the interviews are presented as illustrations. The following quote from Participant A (December 5, 1996) describes an increase in confidence resulting from successful participation in a recent workshop. In response to the question, "Why did you take advantage of this learning situation?", she said:

> I went there with an open mind. The facilitator got us to participate, made us think, and I felt good when I came up with some of the responses in that workshop, and it just sort of motivated me to go on, and I found it very easy to think of ideas. That made me think. Maybe that's it. I got involved thinking.

Participant I (January 2, 1997) said that she became more confident as a result of having to figure out how to provide care in a complicated and unfamiliar situation within her practice. She went on to say that she was motivated by the knowledge that the medical staff were depending on her advice. Participant H (December 13 1996) described a feeling of pride that resulted from successfully figuring out a problem within her practice. In response to the question, "Why did you identify this as a significant learning experience?", she responded, "Because it's an accomplishment, something to feel proud of, and share with your colleagues and say, 'this is what I figured out'. And also to have your colleagues verify it. Like a little kid learning to walk, I guess." In response to the same question, Participant F (December 13 1996) said, "...this experience ... gave me confidence that the information I presented to my colleagues was right, regardless of whether they agreed with me or not". Also in response to this question, Participant J (January 2, 1997) said that she felt more competent as a result of positive feedback she had received from other health care professionals that she was doing a good job, and that she felt more confident as a result of knowing that she was being effective and doing a good job. The apparent relationship between learning and confidence will be discussed further in chapter 5.

Organizational factors that are perceived to influence professional learning.

All interview participants practiced in teaching hospitals which are affiliated with an academic health science centre. Participants considered working in a teaching hospital to be associated with enhanced opportunities for professional learning. In addition, they identified the following other features of work settings as being supportive of professional learning: participating on interdisciplinary committees and patient care teams, working with professionals in other disciplines who are supportive of the role of clinical dietitians, having access to the expertise of other dietitians, having a supportive boss, having research opportunities, providing clinical teaching experiences to dietetic interns, giving presentations to professional colleagues, attending grand rounds and teaching rounds,

attending conferences, workshops, and teleconferences, reading journals and practice group newsletters, and having access to a health sciences library.

Conversely, participants identified these workplace characteristics as potential barriers to professional learning: lack of financial support for continuing education or professional resources, being the only clinical dietitian in a practice setting, having a heavy workload, not having enough time, and not having flexibility in how one's time is spent. However, most participants appeared to view a lack of organizational support for learning exclusively in terms of a lack of financial support for continuing education. Participant D (December 10, 1996) indicated that she had never thought about the notion of organizational support for learning. Participant H (December 13, 1996) also indicated that this notion of organizational support for learning meant nothing to her. This apparent lack of concern about organizational support for learning, other than financial support, will be discussed in chapter 5.

Stage of professional expertise.

Prior to the interviews, the principal researcher had begun to doubt the feasibility of using a written questionnaire to distinguish stages of professional expertise, as described by Benner (1984) and Benner et al. (1996). Neither the number of years in practice nor the length of time in one's current position would be sufficient to permit this distinction to be made. The researcher postulated that it might be possible to distinguish stages of expertise by determining that respondents at different stages used standardized practice guidelines, such tools as standards of care, nutrition care procedures, or documentation guidelines, in different ways or to different degrees. In order to determine the feasibility of using this data to make this distinction, interview participants were asked to discuss their use of these standardized tools. Participants, who were all experienced dietitians, reported using these tools in different ways and depending on them to varying degrees. Analysis of this data led the principal researcher to conclude that it would not be feasible to use a questionnaire to (a) obtain meaningful data about respondents' use of

standardized practice guidelines, or (b) link stages of expertise by to respondents' use of standardized practice guidelines. Therefore, it was determined that a questionnaire would not be sensitive enough to determine stages of professional expertise.

Quantitative data

Of 585 questionnaires that were sent, 430 (73.5 %) were returned. Three were marked "incorrect address", nine were marked "not applicable" by respondents who had not worked as clinical dietitians within the past 12 months, one was returned blank by a dietitian who did not want to participate, and seven were returned too late to be analyzed. Also, nine questionnaires were completed by dietitians working in Home Care. Because employment in Home Care was an exclusion criteria from the original mailing, these responses were not analyzed. Thus, 401 questionnaires were analyzed.

Before presenting the results, the treatment of incomplete or ambiguous data will be described. Some respondents assigned values to professional learning activities that were listed in the first section of the questionnaire, but did not circle the item or indicate frequency of participation. When this occurred, the meaning of the assigned value was unclear and the respondent was considered not to have participated in that activity within the past twelve months. Similarly, responses were not counted when respondents commented that they had engaged in an activity previously, but not during the past twelve months. When respondents circled two values or gave a range of numbers to indicate frequency of participation, the mid-point was used. When respondents indicated they participated in an activity "frequently", which occurred occasionally when respondents identified reading journals or searching the internet as activities, a number was entered to identify them as participants; however, it is not possible to describe frequency of participation accurately for these activities.

The items dealing with feedback (items 18, 20, and 29), yielded ambiguous data which were not analyzed. These were double-barreled items which required respondents to indicate if they valued feedback and if they sought it out. Some respondents indicated

they valued feedback but did not seek it out. Although most respondents assigned values to these items, it is unclear whether they were responding to the entire statement or to a part of it.

In an attempt to determine if items were valid measures of the constructs (e.g., networking with colleagues, reflecting on past experience), variables were examined for collinearity. Items that were expected to measure something similar were examined for positive collinearity. Items that were expected to measure opposing constructs were examined for negative collinearity (Schumacher & McMillan, 1993). The following guideline, suggested by Cohen and Holliday as cited by Bryman and Cramer (1994, p.170), was used to judge the strength of correlations: below 0.19 is very low; 0.20 to 0.39 is low; 0.40 to 0.69 is modest; 0.70 to 0.89 is high; and 0.90 to 1.0 is very high. Although correlations were in expected directions, there was low or modest correlation among some items that the researcher had expected to be correlated. This is not surprising, considering the complex nature of the constructs of interest and the exploratory nature of this research. Specific correlations are presented throughout this chapter.

A Demographic profile of respondents.

This section provides a profile of respondents and a description of selected characteristics of the organizations in which they practice. A detailed breakdown of respondents' place of employment can be found in Table 1. Over 87% of respondents (N = 347) worked in hospitals. Almost half (42.4%) of respondents (N = 168) worked in teaching hospitals. Although qualitative data suggested that a relationship might have existed between practicing in a teaching hospital and participation in professional

Table 1

Respondents' place of employment

(N = 396)

Place of employment	Number of respondents
Teaching Hospital	168 (42.4%)
Non-teaching Hospital	179 (45.2%)
Long-term care/Chronic care/ Rehabilitation Facility	12 (3.0%)
Nursing Home/Home for the Aged	11 (2.8%)
Worked for 2 or more employers	6 (1.5%)
Other (e.g., Regional Cancer Treatment Facility, Ambulatory Clinic, V.O.N)	20 (5.0%)

Note. Dietitians who were employed by Home Care programs (Community Care Access Centres) were not included in this analysis.

learning, there was no apparent correlation between practice setting and other variables; therefore, no relationship could be determined from the broader survey data. The number of respondents who worked in two places may have been underrepresented because this questionnaire item did not anticipate respondents who practiced in more than one setting.

Data reflecting organizational structure can be found in Table 2. Data on reporting relationships can be found in Table 3. Nineteen respondents wrote about recent or pending changes in organizational structure, often involving a change from traditional departmental management to program management. Fewer than half the respondents (N = 172) reported to a dietitian. About the same number (N = 149) reported to a health care professional from another discipline, often a nurse. Respondents also reported to physicians, physiotherapists, occupational therapists, social workers, administrators, accountants, and other managers who may not have a background in dietetics or health care. A small number of respondents (N = 3) indicated being part of a self-managed team, with or without a boss. Some implications of these data are discussed in chapter 5.

Respondents ranged from being the only clinical dietitian in an organization (N = 37) to being one of many in a large organization with multiple sites. The reported number of clinical dietitians employed in respondents' organizations ranged from 1 to 43 (M = 7.3; SD = 6.3); however, some responses to this item are of questionable validity for the following reasons: (a) due to organizational mergers or downsizing, some respondents were unsure of an exact number of dietitians in their organizations, (b) the instructions did not specify whether respondents who work in multi-site organizations should include all dietitians in the organization or only those at one site, and (c) some respondents reported the number of full-time-equivalents rather than the number of people.

Length of time in clinical nutrition practice, excluding time spent away from active practice to raise a family or for other reasons, ranged from a few months to 35 years (M = 11.0; SD = 7.1). Length of time in current position ranged from 1 day to 29 years (M = 7.0; SD = 5.6). Approximately 63% of respondents (N = 252) were in full-time positions

Table 2

Organizational structure in which respondents are employed

(N = 398)

Type of structure	Number of respondents
Department of Nutrition Services	158 (39.7%)
Department of Clinical Nutrition	56 (14.1%)
Program management (includes Diabetes Education Centres)	148 (37.4%)
Dual organizational structure (e.g., department and program)	15 (3.8%)
Other	21 (5.3%)

Table 3

Reporting relationships of respondents

(N = 400)

Person to whom dietitian reports	Number of respondents
Dietitian	172 (43.0%)
Nurse*	89 (22.3%)
Physician	15 (3.8%)
Health care professional other than dietitian	45 (11.3%)
Administrator	22 (5.4%)
Reports to 2 people	35 (8.8%)
Other	22 (5.5%)

Note. There are likely additional nurses included in the category Health care professional other than dietitian. Some respondents chose this response or indicated "program manager" without specifying the discipline. It is common for program managers to be nurses.

and 31% (N = 126) in regular part-time positions. The remaining 23 respondents were in casual or term positions.

Ninety-two percent (N = 369) of respondents were prepared at the Baccalaureate level, sometimes with additional certification or a post-baccalaureate diploma. Eight percent (N = 30) of respondents had Masters degrees. Twenty-one respondents were currently pursuing an academic degree, the most common being Master of Education (N = 9), Master of Science (N = 4), and MBA (N = 2). One person was pursuing Doctoral studies, and one a Bachelor of Commerce Degree. The two most common certification designations cited were Certified Nutrition Support Dietitian (CNSD) and Certified Diabetes Educator (CDE). The researcher postulated that there may be a relationship between formal education and (a) one's confidence in one's ability, or (b) one's participation in learning from practice, but no such relationships could be determined from the broader survey data.

Professional learning activities.

Table 4 presents (a) the number of respondents' who participated in selected professional learning activities during the past 12 months, and (b) their perception of the value of these learning activities. These data suggest that respondents participate in a variety of learning activities which they consider to be worthwhile. Frequency of participation is summarized in Table 5.

Ninety-six percent of respondents attended at least one external workshop, conference, or seminar in the past 12 months, even though lack of financial support for continuing education was identified as an issue by interview participants and questionnaire respondents. With the exception of teleconferences, respondents considered most continuing education activities to have been worthwhile. Fewer than half of respondents who attended at least one teleconference in the past year considered these to have been "generally" or "very" worthwhile.

Table 4

Number of respondents who engaged in selected learning activities in the past 12 months; perceived value of these activities as a source of professional learning

(N = 401)

Activity	Number of respondents	Value	
		M	SD
Attend workshop(s), conference(s), or seminar(s) away from work	380 (94.8%)	4.4	2.1
Present talk(s) to dietetic interns, health professionals, or students	306 (76.3%)	4.1	0.8
Participate on interdisciplinary committees in my work place	292 (73.0%)	4.2	0.9
Attend teleconference(s)	273 (68.1%)	2.1	2.7
Use newsletter(s) or other material from practice group(s)	266 (66.5%)	4.1	0.8
Attend grand rounds	244 (60.8%)	4.9	0.8
Attend practice group meeting(s) with dietitians in my area of practice	219 (54.6%)	4.3	0.7
Provide clinical rotation(s) for dietetic intern(s)	217 (54.3%)	4.0	0.8
Participate in formal or informal research in my practice	170 (42.6%)	4.4	0.7

(Table continues)

Table 4 (continued)

Number of respondents who engaged in selected learning activities in the past 12 months; perceived value of these activities as a source of professional learning

(N = 401)

Activity	Number of Respondents	Value M	SD
Search the internet for information related to my practice	168 (41.9%)	4.0	0.8
Participate in teaching rounds as a member of a interdisciplinary team	164 (41.1%)	4.2	0.7
Participate in journal club(s)	151 (38.7%)	4.0	0.8
Use self-study program(s)	122 (30.5%)	4.4	0.6
Write article(s) for the public	94 (23.4%)	4.0	0.8
Write article(s) for dietitians or other health professionals	84 (20.9%)	4.2	0.8

Rating scale:

1 = this is definitely not at all worthwhile for me

2 = this is generally not at all worthwhile for me

3 = I am undecided

4 = this is generally worthwhile for of me

5 = this is very worthwhile for me

Table 5

Frequency of participation in learning activities during the past 12 months

(N = 401)

	Number participating this often		
Activity	1 - 2X	3 - 4X	5 or more
Attend workshop(s), conference(s), or seminar(s) away from work	181	143	56
Present talk(s) to dietetic interns, health professionals, or students	159	85	62
Attend teleconference(s)	145	79	49
Attend practice group meeting(s) with dietitians in my area of practice	126	54	39
Provide clinical rotation(s) for dietetic intern(s)	107	63	47
Use newsletter(s) or other material from practice group(s)	104	89	73
Use self-study program(s)	93	11	18
Search the internet for information related to my practice	79	33	56
Attend grand rounds	72	59	113
Participate in teaching rounds as a member of a interdisciplinary team	68	30	66
Write article(s) for dietitians or other health professionals	67	14	3
Write article(s) for the public	66	19	9
Participate in journal club(s)	50	38	63

Attendance at these activities was highly valued. Reading professional literature was also highly valued as a learning activity by many respondents. This was first identified by interview participants, and was verified by responses to a number of questionnaire items: Reading was the most frequently cited "other" learning activity (N=43) in Part A of the questionnaire; reading to obtain information about a question that arose from practice was identified by 26 respondents as a valuable informal research activity; and 85% of respondents (N = 341) indicated that reading professional literature plays a significant role in their professional learning.

Learning from colleagues.

Table 6 address respondents' perceptions about the value of peer support and collaboration with colleagues. It contains a visual representation of (a) the number of respondents who indicate that statements describing the value of peer support and collaboration are true for them, and (b) mean ratings and standard deviations for these statements. Correlations between these variables are presented in Table 7. These data suggest that interaction with colleagues occurs in a variety of ways and results in learning that is highly valued by most respondents. Both quantitative and qualitative data were consistent in this regard, and verified key themes that were featured in the literature review. The high ratings assigned to participation in more formalized collaborative activities such as journal clubs, practice groups, and interdisciplinary committees also verified the value of learning through collaboration. (See Table 4). In addition, both quantitative and qualitative data indicated that respondents perceive that they learn valuable things from watching or listening to their colleagues. Respondents' written comments regarding items 18, 20, and 29 suggested that they value feedback from others, although they may not seek it out; however, these items were not analyzed due to the ambiguity of the responses.

Data suggested that respondents participated extensively in interdisciplinary committees in the workplace and valued this participation as a source of learning. Many

Table 6

Summary of responses indicating perceived value of peer support

(N = 401)

Questionnaire Item	Value		
	N	M	SD
33. When I am uncertain about how to proceed in a clinical situation, I frequently consult with colleagues	365	4.4	0.7
37. I have learned worthwhile things from listening to other dietitians talk about successes or difficult experiences in their practices	340	4.2	0.9
30. Collaboration and/or consultation with other dietitians contributes significantly to my learning	333	4.1	0.8
38. Observing other health care professionals in clinical situations, whether planned or unplanned, has resulted in valuable learning for me	328	4.0	0.9
34. Observing other dietitians in clinical situations, whether planned or unplanned, has resulted in valuable learning for me	296	3.9	1.1
41. I consider my colleagues assessments of my strengths and learning needs when I think about my professional development needs	209	3.4	1.0

Note. N represents the number of respondents who indicate that each statement is generally true or very true of them

(Table continues)

Table 6 (continued)

Summary of responses indicating perceived value of peer support

Rating scale:

1 = this is definitely not true of me

2 = this is generally not true of me

3 = I am not sure

4 = this is generally true of me

5 = this is very true of me

Table 7

Correlations between variables indicating perceived value of peer support

	1	2	3	4	5	6
1	1.0					
2	0.473**	1.0				
3	0.511**	0.342**	1.0			
4	0.466**	0.338**	0.540**	1.0		
5	0.327**	0.237*	0.469**	0.409**	1.0	
6	0.265*	0.183	0.344**	0.350**	0.302*	1.0

1 = Collaboration and/or consultation with other dietitians contributes significantly to my professional learning.

2 = When I am uncertain about how to proceed in a clinical situation, I frequently consult with my colleagues.

3 = Observing other dietitians in clinical situations, whether planned or unplanned, has resulted in valuable learning for me

4 = I have learned worthwhile things from listening to other dietitians talk about successes or difficult experiences in their practices

5 = Observing other health care professionals in clinical situations, whether planned or unplanned, has resulted in valuable learning for me

6 = I consider my colleagues assessments of my strengths and learning needs when I think about my professional development needs

* Significant at .01

** Significant at .001

respondents reported being involved in more than one committee, sometimes as many as five or six. The type of committee varied considerably. The terms committee, team, program, and task force appear to have been used to describe similar types of involvement. The following involvement was cited frequently: interdisciplinary patient care teams, committees related to the development and implementation of clinical pathways or care maps, accreditation committees, Continuous Quality Improvement (or Quality Assurance or Total Quality Management) teams, committees to address work process re-design or re-engineering, and committees related to program management.

Although unsolicited, a number of respondents (N=8) described benefits of interdisciplinary team participation. Each of these respondents identified specific outcomes of learning. These included (a) learning about other disciplines' skills and knowledge and exchanging knowledge among professionals, (b) expanding one's perspective and vision beyond dietetics through increased political awareness and insight into the organization and program, (c) developing team-building skills, and (d) being more competitive in the marketplace because of expanded knowledge and skills and a more developed role. Other respondents (N = 4), however, wrote that they had no time to participate on committees (N = 2) or that perceived benefits of committee participation were not worth the significant time commitment involved.

Approximately forty-three percent (N = 170) of respondents reported participating in formal or informal research during the past 12 months. The questionnaire did not define research; therefore, all examples cited were considered to be acceptable. Many activities were described. The following examples were provided most often: practice-based research on a specific patient/client population (N = 40), practice-based research involving outcome measures (N = 29), informal reading to obtain information about a specific question that had arisen in practice (N = 26), and practice-based research involving nutrition support (N = 20). A small number of dietitians (N = 5) participated in formal research as part of multi-site studies. Some unsolicited comments accompanied these

responses. One respondent wrote that participation in informal research increased her knowledge of a subject and increased her confidence in her practice. Another wrote that involvement in research provided opportunities to expand the scope of her practice and to improve patient care. Frustration was evident in other comments. One respondent wrote that there was not enough support for research by clinicians other than physicians. Another indicated that she had developed a research proposal more than a year ago, before cutbacks had altered the direction of clinical dietitians' practice.

How respondents view themselves as learners.

Table 8 summarizes data addressing respondents' views of themselves as learners. It contains a visual representation of (a) the number of respondents who indicate that statements about themselves as learners are true of them, and (b) mean ratings and standard deviations for these statements. Data in these tables are categorized into four topics: (a) views of oneself as a learner, (b) confidence in oneself, (c) planning for professional growth and development, and (d) personal learning behaviours. Almost all respondents ($N = 385$) regarded themselves as continuous learners. However, there was low correlation between regarding oneself as a continuous learner and all individual behaviours that had been postulated to enhance learning from practice. (See Table 9). Likewise, most respondents reported having confidence in their knowledge and skills, both today ($N = 340$) and in the future ($N = 306$). However, the four questionnaire items that address confidence were correlated only moderately (See Table 9).

The questionnaire contains four items that address planning for professional growth and development (Questions 23, 25, 35, 39). Respondents were asked to indicate (a) if they plan effectively, (b) if they plan based on current learning needs, (c) if they plan based on future goals, and (d) if they consider colleagues' assessments of their strengths and learning needs in their planning. Almost half the respondents ($N = 174$) indicated that they do not plan their professional development or that they do not plan effectively. Not surprisingly, then, more respondents reported that they consider current needs ($N = 306$)

Table 8

Summary of respondents' views of themselves as learners

Questionnaire Item	Value		
	N	M	SD
Self as learner			
17. I am a continuous learner in my professional life	385	4.4	0.6
36. I am usually excited by the challenge of learning new things in my practice	379	4.4	0.6
59. Within my practice, I am frequently presented with situations which are unfamiliar to me and require me to learn new things	149	3.1	1.0
22. I often find it stressful to have to learn new things in my practice	62	2.2	1.0
Confidence in oneself			
40. I think that I perform effectively in my practice	382	4.3	0.5
31. I am confident in my knowledge and skills today	360	4.0	0.6
27. I do a good job of maintaining my knowledge and skills and keeping abreast of current developments which are relevant to my practice	325	4.0	0.7
44. I am confident that I will have the knowledge and skills that I will need to do my job in the future	306	4.0	0.8
Planning for learning			
35. I plan my professional development based on my assessment of my strengths and learning needs relative to my current practice	306	3.9	0.9

(Table continues)

Table 8 (continued)

Summary of responses on respondents' views of themselves as learners

Questionnaire Item	N	Mean	SD
Planning for learning (continued)			
23. Participating in planned professional development activities plays a significant role in my professional learning	281	3.8	1.0
39. I plan my professional development based on my future career goals	234	3.6	1.0
25. I effectively plan for my professional growth and development	224	3.6	0.9
41. I consider my colleagues' assessments of my strengths and learning needs when I think about my professional development needs	209	3.4	1.0
Personal learning behaviours			
26. Reading professional literature plays a significant role in my professional learning	341	3.7	0.9
32. Spontaneous or unexpected activities within my practice play a significant role in my professional learning	273	3.7	0.9
42. I spend my own money on courses, seminars, or professional resources	239	3.5	1.2
43. I rarely find time to read professional literature or participate in professional education on my own time	86	2.3	1.1

(Table continues)

Table 8 (continued)

Summary of responses on respondents' views of themselves as learners

Note. N represents the number of respondents who indicate that each statement is generally true or very true of them

Rating scale:

1 = this is definitely not true of me

2 = this is generally not true of me

3 = I am not sure

4 = this is generally true of me

5 = this is very true of me

than future goals (N = 234) in any planning they do. Approximately half of respondents (N = 209) reported that they consider peer feedback when thinking about their professional development needs. These data raise questions about the extent and nature of planning for professional development that can occur within a rapidly changing environment. This will be discussed further in chapter 5.

Reflective practice.

Responses to items that were considered indicative of reflective practice are summarized in Table 10. Although respondents agreed that each of the first three statements was "generally" or "very" true of them, items were only moderately correlated with each other. (See Table 11.) Items may not have been sensitive enough to distinguish reflective practitioners from other dietitians. Perhaps all respondents engaged in reflection at some level, and items could not identify those who engaged in critical reflection. Further discussion about reflective practice occurs in chapter 5.

Perceptions about organizational factors which may influence learning.

Based on the literature review, questionnaire items were developed to identify features of organizations that are compatible with supportive learning environments. These data are presented in Tables 12 and are categorized into five topics: (a) bureaucratic nature of the organization, (b) nature of communication within the organization, (c) perceived value of the dietitian by others, (d) respondent's perceived control over the immediate practice environment, and (e) how the organization views learning. There was low correlation between all but two of these items. Very few respondents perceived that they practiced in bureaucratic organizations where rules and standardized approaches are overemphasized (N = 64) or where they are discouraged from questioning established practices (N = 54). In general, data suggest that most respondents were satisfied with the nature of communication within their organizations; however, there are some apparent inconsistencies in the data. Most respondents reported that information and ideas are shared openly between themselves and their

Table 9
Correlations between variables which address respondents views of themselves as learners

Topic: Self as learner

	1	2	3	4
1	1.0			
2	0.488 **	1.0		
3	0.114	0.043	1.0	
4	- 0.144	- 0.209	0.209	1.0

1 = I am a continuous learner in my professional life

2 = I am usually excited by the challenge of learning new things in my practice

3 = Within my practice, I am frequently presented with situations which are unfamiliar to me and require me to learn new things

4 = I often find it stressful to have to learn new things in my practice

** Significant at .001

(Table continues)

Table 9 (continued)
Correlations between variables which address respondents views of themselves as learners

Topic: Confidence in oneself

	5	6	7	8
5	1.0			
6	0.535 **	1.0		
7	0.357 **	0.412 **	1.0	
8	0.368 **	0.429 **	0.369 **	1.0

5 = I think that I perform effectively in my practice

6 = I am confident in my knowledge and skills today

7 = I do a good job of maintaining my knowledge and skills and keeping abreast of current developments which are relevant to my practice

8 = I am confident that I will have the knowledge and skills that I will need to do my job in the future

** Significant at .001

(Table continues)

Table 9 (continued)
Correlations between variables which address respondents views of themselves as learners

Topic: Planning for learning

	9	10	11	12	13
9	1.0				
10	0.242 *	1.0			
11	0.453 **	0.149	1.0		
12	0.530 **	0.271	0.497 **	1.0	
13	0.313 *	0.148	0.310 *	0.291 *	

Key:

9 = I plan my professional development based on my assessment of my strengths and learning needs relative to my current practice

10 = Participating in planned professional development activities plays a significant role in my professional learning

11= I plan my professional development based on my future career goals

12 = I effectively plan for my professional growth and development

13 = I consider my colleagues' assessments of my strengths and learning needs when I think about my professional development needs

* Significant at .01

** Significant at .001

(Table continues)

Table 9 (continued)
Correlations between variables which address respondents views of themselves as learners

Topic: Personal learning behaviours

	14	15	16	17
14	1.0			
15	0.043	1.0		
16	0.113	0.114	1.0	
17	- 0.334 **	0.028	- 0.214	1.0

14 = Reading professional literature plays a significant role in my professional learning

15 Spontaneous or unexpected activities within my practice play a significant role in my professional learning

16 I spend my own money on courses, seminars, or professional resources

17 I rarely find time to read professional literature or participate in professional education on my own time

** Significant at .001

Table 10

Summary of responses indicating reflective practice

(N = 401)

Questionnaire item	N	Value Mean	SD
24. After a situation when I did not feel effective in my practice, I usually think about how I might be more effective	379	4.4	0.6
19. When I am faced with challenging patient care situations, I often think back to similar experiences I have had	361	4.3	0.7
21. In my practice as a clinical dietitian often ask myself, "what do I need to learn that I don't know now?"	353	4.2	0.8
28. I rarely engage in self-evaluation in my practice	56	2.3	1.0

Note. N represents the number of respondents who indicate that each statement is generally true or very true of them

Rating scale:

1 = this is definitely not true of me

2 = this is generally not true of me

3 = I am not sure

4 = this is generally true of me

5 = this is very true of me

Table 11

Correlation between variables indicating reflective practice

	1	2	3	4
1	1.0			
2	0.289 *	1.0		
3	0.276 *	0.280 *	1.0	
4	- 0.189	- 0.158	- 0.184	1.0

1 = When I am faced with challenging patient care situations, I often think back to similar experiences I have had.

2 = .In my practice as a clinical dietitian, I often ask myself, "what do I need to learn that I don't know now?"

3 = After a situation when I did not feel effective in my practice, I usually think about how I might be more effective.

4 = I rarely engage in self-evaluation in my practice.

* Significant at .01

Table 12

Summary of responses indicating views about their organizations

Question	N	Value Mean	SD
Bureaucratic nature of organization			
45. In the organization where I work, I am generally discouraged from questioning established practices	64	2.2	1.1
52. Rules and standardized approaches to providing care are overemphasized in the organization where I work	54	2.4	1.0
Nature of communication within organization			
60. In the organization where I work, my colleagues and I share information and ideas fairly openly	324	4.2	0.9
47. I collaborate with others to set goals and priorities within my practice	260	3.6	1.0
56. In my workplace, there is an atmosphere of competition rather than cooperation with colleagues	75	2.3	1.2
Perceived value of the dietitian by others			
54. My achievements and contributions to patient care are valued by other members of the health care team	355	4.2	0.7
49. My achievements and contributions are valued by my boss	279	3.8	1.0

(Table continues)

Table 12 (continued)

Summary of responses indicating views about their organizations

Question	N	Value Mean	SD
Perceived control over immediate practice environment			
53. Within my practice, I have freedom to set goals and priorities for myself	351	4.2	0.8
50. Within my practice, I have sufficient opportunities to influence the development of policies, procedures, or programs that affect me	281	3.7	1.0
57. I do not have sufficient flexibility in how I spend my time at work to allow me to pursue areas that are of interest to me	152	2.9	1.3
51. Within my practice, I have sufficient time to participate n activities that enhance my practice as a clinical dietitian	147	2.8	1.2
How the organization views learning			
55. In the organization where I work, learning is viewed as an essential part of my job	305	4.0	1.0
58. I have sufficient access to relevant current literature and resources	291	3.8	1.2
48. ... where I work, mistakes or gaps in knowledge in knowledge are viewed as learning opportunities	255	3.9	0.9
46. Performance appraisals generally help me to learn about myself	178	3.2	1.1

(Table continues)

Table 12 (continued)

Summary of responses indicating views about their organizations

Question	N	Value Mean	SD
How the organization views learning (continued)			
59. Within my practice, I am frequently presented with situations which are unfamiliar to me and require me to learn new things	149	3.1	1.0

Note. N represents the number of respondents who agree somewhat or agree strongly with a statement.

Rating scale:

1 = disagree strongly

2 = disagree somewhat

3 = neither agree nor disagree

4 = agree somewhat

5 = agree strongly

colleagues (N = 325). In contrast, only 63% (N = 250) reported that there was an atmosphere of cooperation with colleagues in their organization. Approximately 18% (N = 74) reported that there was an atmosphere of competition, and a further 18% (N = 73) were ambivalent.

Performance appraisals were not valued as tools to promote learning about oneself. Fewer than half of respondents (N = 178) reported that performance appraisals helped them to learn about themselves. Approximately one-quarter of respondents (N = 100) were ambivalent, while one-quarter (N = 101) did not think that performance appraisals had helped them to learn about themselves. It is not possible to tell from the data if performance appraisals had not been completed, or if they had been completed but were not helpful. Twenty-seven respondents (7.2%) wrote that they had never had a performance appraisal, or at least not recently enough to be relevant. In spite of an apparent lack of performance appraisal data, most respondents perceived that their achievements and contributions were valued by their boss (N = 279) and by other members of the health care team (N = 355).

Data suggested that respondents were less satisfied with their degree of control over some aspects of their immediate practice environment than with other features of their practice settings. The biggest problem reported was lack of time. This was consistent with qualitative data and was supported by written comments from 46 (11.5%) respondents. Only 36.8% (n = 147) reported having enough time to participate in activities that enhanced their practice as a clinical dietitian. Lack of flexibility in how time was spent was reported to be a problem by 38.2% of respondents (N = 152). There was a modest negative correlation (r = - .497; p = .001) between these two items (items 51 and 57). Respondents reported having more control in other aspects of practice. Most agreed that they had freedom to set goals and priorities within their practice (N = 351) and that they had sufficient opportunities to influence the development of policies, procedures, or programs that affected them (N = 281).

Three-quarters of respondents (N = 305) indicated that their organization viewed learning as an essential part of their job. Approximately the same number of respondents reported having sufficient access to literature and resources. However, fewer than half of them reported that they were frequently presented with situations that required them to learn new things. These apparent inconsistencies, and some implications of dietitians' perceptions about their organizations as supportive environments, will be discussed further in chapter 5.

Relationships among the data.

A correlation matrix was computed for items that indicated experiences and views about professional learning and perceptions about organizations. Four items were excluded: items 18, 20, and 29 were not included because they yielded ambiguous data which were not analyzed, and item 17, "I am a continuous learner", was not included because it was used as the dependent variable in the multiple regression analysis. Next, principal component analysis was conducted to determine the number of underlying dimensions within these variables. Using factors with an eigenvalue greater than one, this analysis yielded twelve factors which explained 59.4% of the variance shared by the items. A graphical scree test was used to determine that three factors would be retained (Bryman & Cramer, 1994, p.262). A second principal component analysis was conducted, specifying three factors. The first factor extracted accounted for the maximum amount of variance shared by the items. The second factor accounted for the next largest amount of variance that was unrelated to the first, and the third factor accounted for the next largest amount of unrelated variance shared by the items. However, as explained by Bryman and Cramer (1994), it is not easy to interpret the meaning of these factors because most items will load on the first factor. In order to increase the interpretability of the factors, varimax rotation was used to maximize the loadings of the items.

See Table 13 for a visual representation of the factors. These three factors together explained 30.1% of the variance shared by the items. Factor 1, 2 and 3

Table 13

The three factors that emerged from the principal component analysis

Factor 1: Learning from practice

Item	Correlation
Items which deal with interaction with colleagues.	
34. Observing other dietitian(s) in clinical situation(s), whether planned or unplanned, has resulted in valuable learning for me	0.7
37. I have learned worthwhile things from listening to other dietitians talk about successes or difficult experiences in their practices	0.7
30. Collaboration and/or consultation with other dietitians contributes significantly to my professional learning	0.7
38. Observing other health professionals(s) in clinical situation(s), planned or unplanned, has resulted in valuable learning for me	0.6
33. When I am uncertain about how to proceed in a clinical situation, I frequently consult with my colleagues	0.6
41. I consider colleagues' assessments of my strengths and learning needs when I think about my professional development needs	0.5
47. I collaborate with others to set goals and priorities within my practice	0.5
Items which deal with reflective practice.	
19. When I am faced with challenging patient care situations, I often think back to similar experiences I have had	0.5

(Table continues)

Table 13 (continued)

The three factors that emerged from the principal component analysis

Factor 1: Learning from practice (continued)

Item	Correlation
Items which deal with reflective practice. (continued)	
21. In my practice as a clinical dietitian, I often ask myself, "what do I need to learn that I don't know now"	0.4
24. After a situation when I did not feel effective in my practice, I usually think about how I might be more effective	0.4
Other items.	
32. Spontaneous or unexpected activities within my practice play a significant role in my professional learning	0.4
46. Performance appraisals generally help me to learn about myself	0.4
23. Participating in planned professional development activities plays a significant role in my professional learning	0.3
Factor 2: Organizational support	
49. My achievements and contributions are valued by my boss	0.6
45. In the organization where I work, I am generally discouraged from questioning established practices	- 0.6
53. Within my practice, I have freedom to set goals and priorities for myself	0.6
55. In the organization where I work, learning is viewed as an essential part of my job	0.6

(Table continues)

Table 13 (continued)

The three factors that emerged from the principal component analysis

Factor 2: Organizational support (continued)

Item	Correlation
50. Within my practice, I have sufficient opportunity to influence the development of policies, procedures, programs that affect me	0.5
51. Within my practice, I have sufficient time to participate in activities that enhance my practice as a clinical dietitian	0.5
54. My achievements and contributions to patient care are valued by other members of the health care team	0.5
57. I do not have sufficient flexibility in how I spend my time at work to allow me to pursue areas that are of interest to me	- 0.5
56. In my workplace, there is an atmosphere of competition rather than cooperation with colleagues	- 0.5
48. In the organization where I work, mistakes or gaps in knowledge are viewed as learning opportunities	0.5
52. Rules and standardized approaches to providing care are overemphasized in the organization where I work	- 0.4
60. In the organization where I work, my colleagues and I share information and ideas fairly openly	0.3

(Table continues)

Table 13 (continued)

The three factors that emerged from the principal component analysis

Factor 3: Professional confidence

Item	Correlation
Confidence in one's abilities.	
27. I do a good job of maintaining my knowledge and skills and keeping abreast of current developments which are relevant to my practice	0.7
44. I am confident that I will have the knowledge and skills that I will need to do my job in the future	0.5
31. I am confident in my professional knowledge and skills today	0.5
40. I think that I perform effectively in my practice	0.5
36. I am usually excited by the challenge of learning new things in my practice	0.5
22. I often find it stressful to have to learn new things in my practice	- 0.3
Planning for one's professional development.	
25. I effectively plan for my professional growth and development	0.6
28. I rarely engage in self-evaluation in my practice	- 0.5
35. I plan my professional development based on my assessment of my strengths and learning needs relative to my current practice	0.5
39. I plan my professional development based on future career goals	0.5
Personal learning behaviours.	
26. Reading professional literature plays a significant role in my professional learning	0.6

(Table continues)

Table 13 (continued)

The three factors that emerged from the principal component analysis

Factor 3: Professional confidence (continued)

Item	Correlation
Personal learning behaviours. (continued)	
43. I rarely find time to read professional literature or participate in professional education on my own time	- 0.5
42. I spend my own money on courses, seminars, or professional resources	0.3

Note. All correlations are significant at .001

accounted for 11.2%, 8.6%, and 10.3% respectively of the variance shared by the items. Bryman and Cramer (1994, p. 265) indicated that factor composition is conventionally done by excluding items which correlate less than 0.3 with a factor. This approach was followed in this study. Item 58 correlated with both factor 2 and factor 3 at .3, so was excluded from both factors. No other item loaded on more than one factor. Factor 1 was comprised of thirteen items (19, 21, 23, 24, 30, 32, 33, 34, 37, 38, 41, 46, and 47). Each of these items were concerned with an aspect of learning from practice; therefore, factor 1 was labeled Learning from practice. Seven of the thirteen items (30, 33, 34, 37, 38, 41, 47) involved deliberate interaction with colleagues that would lead to learning. Three items (19, 21, 24) dealt with reflective practice. Factor 2, labeled Organizational support, was comprised of twelve items, (45, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57,and 60), each indicating a characteristic of an organization. The third factor, labeled Professional confidence, was comprised of thirteen items (22, 25, 26, 27, 28, 31, 35, 36, 39, 40, 41, 42, and 44). Five of these items (27, 31, 36, 40, and 44) related to confidence in one's abilities; five other items (25, 28, 35, 39, and 28) related to planning for one's professional development, and the other three dealt with personal learning behaviours.

Regression analysis was performed to investigate the relative contributions of the three factors to the perception of being a continuous learner. The factor scores were used as independent variables. Item 17, "I am a continuous learner", was used as the dependent variable. In the resulting regression equation, the residual = 86.1 and the squared multiple R = .305. The equation was statistically significant (F 3, 333) = 48.70 $p < .001$. This indicates that, according to this model, the three factors combined to account for 30% of variation in the dependent variable. Factor 2 (Organizational support) had a standard coefficients of .039; thus, it did not account for any of the variation in the dependent variable. The standard coefficient for Factor 3 (professional confidence) was .512, and the standard coefficient for Factor 1 (learning from practice) was .203. This indicates that variation in a respondent's perception of being a continuous learner was influenced

approximately 20% by the Professional Confidence Factor and 10% by individual learning activities that were undertaken, as defined by the Learning From Practice Factor in this study.

Relationships between continuous professional learning and other variables.

The results of the principal component analysis and regression analysis suggest that there is a relationship between respondents' perceptions of themselves as continuous professional learners and the degree to which they engage in activities that promote learning from practice. These activities are included in the Learning From Practice Factor. An even stronger relationship appears to exist between respondents' perceptions of themselves as continuous professional learners and personal factors that comprise the Professional Confidence Factor. Generally, these personal factors deal with professional confidence and planing for professional learning. A relationship does not appear to exist between clinical dietitians' perceptions of organizational support and their perceptions of themselves as continuous learners.

CHAPTER 5

Discussion

This research was undertaken to investigate dietitians' views about professional learning and their experiences as learners within organizations. Of particular interest were (a) knowledge acquired from practice, and (b) factors within practice settings which can support dietitians to be successful learners, thereby contributing to their professional competence. Four specific questions were addressed throughout this research. This concluding chapter begins with a discussion of the degree to which it is appropriate to have confidence in the data generated by this research. Next, the discussion addresses each of the research questions and the relationships that emerged from the quantitative data. Finally, this study concludes with a discussion of strategies that may support clinical dietitians to be successful learners.

Degree of confidence in the data

There are a number of reasons to have confidence in the data generated by this exploratory research. The richness of the qualitative data and the emergence of common themes from four separate interviews suggest that it is appropriate to have confidence in the qualitative component of this research. Consistent themes emerged from the qualitative and quantitative components of this research to illustrate that clinical dietitians (a) do learn from practice, (b) value the learning that occurs within their practice, and (c) have numerous opportunities for learning as a result of their participation within a practice community. These data are supported by key themes in the literature review and are consistent with findings from the somewhat limited previous research on professional learning by clinical dietitians. Qualitative and quantitative data were also consistent in suggesting that clinical dietitians in Ontario do not appear concerned about unsupportive learning organizations.

Furthermore, the large number of questionnaire respondents and the high response rate allow the results of this research to be viewed with confidence. This is true in spite of

the fact that non-respondents may differ from respondents, possibly in terms of time commitments, their interest in this topic, or their perceptions of themselves as learners. According to Schumacher and McMillan (1993, p. 282), non-respondents will probably not affect the results in an appreciable way if the return rate is at least seventy percent for mail surveys with a large sample (e.g., 200 or more). However, the numerous and complex factors that appear to influence both participation in professional learning and perception of oneself as a learner, combined with the exploratory nature of this research, suggest that additional research on professional learning by dietitians is required.

Question 1: What are dietitians' views about the nature of professional learning, particularly that which occurs in practice settings?

These data portray a very positive picture of how clinical dietitians in Ontario view both professional learning and themselves as learners. They perceive themselves to be continuous learners who take advantage of a variety of learning opportunities, both planned and spontaneous. They report having numerous opportunities to collaborate with others and they appear to recognize that collaboration is a valuable source of professional learning. Clinical dietitians in Ontario perceive themselves to be both competent and confident. These data suggest a more positive picture of dietitians as learners than the one presented by the dietetics literature reviewed in chapter 2. Implicit in the conclusions presented in the literature review is the suggestion that dietitians' continuing education practices do not promote lifelong learning. The apparent discrepancy between the literature and this study may be explained by the fact that the literature provided little empirical evidence to support the conclusions, and the current study deals with dietitians' perceptions of themselves. It does not attempt to measure learning or competence.

Correlation research presented in chapter 4 indicates that regarding oneself as a continuous learner is not highly correlated with any one individual behaviour that had been postulated to enhance learning from practice (e.g., learning by observing others or by listening to other dietitians). However, regression analysis indicates that participation in a

collection of activities that promote learning from practice does influence a dietitian's perception of being a continuous learner. An even stronger relationship appears to exist between a dietitian's perception of being a continuous learner and some personal factors that relate to professional confidence and planing for professional learning. Professional confidence and planning for professional learning are discussed later in this chapter.

Question 2: What professional learning do dietitians engage in and perceive to be worthwhile?

Learning through formalized continuing education activities.

Although time and workplace financial constraints were identified as issues for many respondents, it appears that most clinical dietitians have opportunities to participate in a range of continuing education activities that they consider to be worthwhile sources of professional learning. These include seminars, workshops, conferences, and grand rounds. It is interesting that, with the exception of teleconferences, all activities are valued highly. The lack of continuing education funds identified by respondents may cause dietitians to be very selective about what they attend and to avoid activities that have not met their expectations on previous occasions. It is also possible that dietitians may consider some of these activities to be worthwhile for reasons, such as socialization or enjoyment, which may not be directly related to learning. The low level of satisfaction with teleconferences may be of concern to dietitians with limited access to other forms of continuing education. Those who subscribe to teleconferences may wish to assess the value of teleconferences as compared to their cost. Teleconference planners may wish to survey their clients about desired topics and depth of coverage for future programs.

Learning from practice.

Learning through meaningful collaboration with colleagues, both dietitians and other professionals, emerged as a prominent theme in this study. Data are supported by key themes in the literature review, and confirm that this literature applies to clinical dietitians, as well as to other health care professionals. These data confirm that learning

from practice is an important component of professional learning for dietitians and that knowledge acquired from practice is essential for competent clinical nutrition practice. Dietitians can not, nor do they, rely upon knowledge acquired through formal continuing education activities as their only source of professional learning. It is important for dietitians and their employers to acknowledge that professional collaboration is a valuable form of learning that can facilitate the development of clinical knowledge. It is also important to acknowledge that dietitians see themselves as benefiting from seeking opportunities to learn from other professionals with whom they have similar professional interests. Data indicate that collaboration occurs through planned or formalized activities within practice settings: participation on interdisciplinary committees and on health care teams, involvement in research, participation in journal clubs, provision of clinical teaching experience to dietetic interns, and presentation of lectures to other professionals. Additional collaboration, which is also valued, occurs through planned activities outside of the immediate practice setting such as belonging to practice groups and visiting other centres. Dietitians also recognize and value learning that occurs through regular interaction with others as part of everyday practice. This interaction includes the following types of activities: consulting with colleagues when uncertain about how to proceed in a clinical situation, collaborating with others to provide care or to solve problems, observing others in their practice, and listening to others talk about their approaches to patient care and about successes or difficult experiences in their practice.

Learning through collaboration was highly valued by dietitians, even though 20% of respondents practice as the only clinical dietitian or with one other clinical dietitian in an organization. This latter group of dietitians is likely to have limited opportunities for learning through interaction with other clinical dietitians. Dietitians who work alone may need to create opportunities for collaboration such as spending time with experienced dietitians in other sites, attending practice group meetings, and calling dietitians in similar areas of practice to discuss practice issues and challenging cases. Because of the

perceived value of learning from others, it is particularly unfortunate when novice dietitians lack access to more experienced colleagues in their practice. As reported by Benner et al. (1996), beginners' clinical inexperience must be recognized as an expected phase in the development of clinical judgment. Less experienced nurses depend heavily on external guidance, and they benefit from coaching and from opportunities to review situations that did not go well with other members of the health care team. It is reasonable to assume that these observations would also be true of dietitians.

The value of obtaining feedback from others.

The value of systematic feedback as a component of professional learning is a key concept in this study. Data from this study verify a key theme presented in the literature review by Queeney & Smutz (1990) and Queeney (1995), who identified discrepancies between perceived and assessed performance-based needs of health care professionals, including clinical dietitians. Areas of greatest discrepancy identified through assessment often were not included in the participants' lists of perceived needs. Rarely did participants identify skills used in daily practice, even when those skills were assessed as being deficient. Queeney (1995) concluded that generally professionals do not perceive themselves as lacking proficiency in tasks they perform regularly, and speculated that this may be because they self-defensively believe that what they do, they do well. This conclusion may explain why fewer than half the respondents in this study report that they are frequently presented with situations which require them to learn new things, although they indicate that they practice in organizations that value learning. Queeney & Smutz (1990) and Queeney (1995) concluded that health care professionals are often unaware of the range of their learning needs; therefore, it is problematic for them to depend too heavily on their self-reported needs. This suggests a need for clinical dietitians to receive ongoing performance feedback from other people, including peers and clients, to provide additional information with which to assess their learning needs and to plan for their professional learning.

This research indicates that although clinical dietitians value feedback, they may not seek it out. Nor do they appear to incorporate feedback from colleagues into their planning for professional development. Furthermore, although performance appraisals have been identified in the literature as a source of potentially valuable external feedback, these data suggest that clinical dietitians do not regard performance appraisals as tools that help them to learn about themselves. Increasingly, clinical dietitians do not have a reporting relationship with other dietitians who are familiar with professional practice issues. Clinical dietitians may report to someone who does not understand the role of the dietitian. In these instances, the people providing performance appraisals would not be helpful with respect to clinical nutrition skills. Data from this study suggest that clinical dietitians may not welcome traditional performance appraisals at all, even when these are provided by dietitian managers. Managers and dietitians may regard learning needs very differently. Furthermore, data suggest that clinical dietitians perceive themselves to be autonomous practitioners who have freedom to set their own goals. Performance appraisals, even when done collaboratively, may require a dietitian to incorporate a manager's perspectives about professional goals, learning needs and learning goals. This may not fit with the dietitian's sense of autonomy. This theme is consistent with the discussion of performance appraisals by Benveniste (1987) and Brown (1995).

If dietitians are not seeking feedback from colleagues or patients, and are not finding traditional performance appraisals to be helpful, then they need to find ways to get systematic external feedback that they will view as helpful and non-threatening. Clinical dietitians may find it more meaningful to receive feedback from other clinical dietitians or from other health care professionals with whom they have close working relationships. However, as a first step, clinical dietitians need to understand and acknowledge the meaning and value of obtaining systematic feedback. Systematic feedback implies that it happens regularly and addresses important aspects of a dietitian's practice. It would be appropriate for clinical dietitians to participate in discussions about what would constitute

meaningful feedback, who might provide it, and how they might incorporate it into their practice. All dietitians need feedback, regardless of the stage of their career or their practice location; however, it may be particularly challenging for dietitians who practice in geographic isolation or for those who do not practice with other dietitians in their area of specialty to obtain meaningful feedback.

Planning for learning.

Data from this study suggest that many clinical dietitians do not plan their professional learning, either at all or as effectively as they might like to. These data, and the previous discussion indicating a need to develop ways of obtaining systematic feedback, have implications for dietitians in Ontario. The Registered Health Professions Act in Ontario requires individual health care professionals to provide assurance that they are competent. In response to this, the College of Dietitians of Ontario requires each dietitian to be "responsible for life-long learning to ensure competence in her/his area of practice". To apply this standard, each dietitian "uses an organized and focused approach in: assessing her/his level of competence, determining her/his strengths and competence gaps/learning needs, and developing a plan to meet those needs" (College of Dietitians of Ontario, 1997).

Data from this study suggest that clinical dietitians may require assistance to develop effective learning plans. This theme appears consistent with conclusions by Flournory (1984) that dietitians do not know how to plan effectively for their own growth, and by Merriam and Caffarella (1991) that adults who engage in self-directed learning rarely plan their learning in advance. A worthwhile focus of future research would be to investigate the extent and type of planning by dietitians who report that they plan their professional learning effectively. This may provide helpful information about the specific process that these dietitians follow and the types of indicators that they use to judge that they are planning effectively.

The issue of planning is complex. There may be many reasons for the reported lack of effective professional planning. It may be difficult for clinical dietitians to plan successfully amidst the current climate of change and job insecurity in Ontario. Jobs may change or disappear as a result of downsizing or reorganization; therefore, dietitians may not know where they will be working, or even what area of clinical nutrition they will be practicing in, in a year or two. Amidst the current climate of change, organizations cannot answer the question of where an employee will be in a year or two. Clearly then, it is difficult for dietitians to assess learning needs with certainty and to develop learning plans that are based on needs assessments. However, to cite uncertainty as a reason not to do any planning suggests that one's professional life and professional learning are haphazard and are totally directed by the practice environment.

Planning may occur at different levels. There may be a difference between long-range planning that attempts to map out a professional path for oneself and planning that attempts to predict the match between an individual's competencies and an organization's needs. The extent to which a dietitian plans for learning may be related to how that dietitian views personal learning needs relative to those of the organization. In other words, a dietitian may or may not view oneself as having learning needs that are distinct from the needs of the organization. One may plan learning for personal professional growth, which is distinct from and not driven by the immediate needs of the practice environment, or one may plan learning to meet specific needs of the organization. An example of the former might be a plan to attend graduate school to learn more about principles of adult education, knowing that it will be a good strategy for numerous future positions. An example of the latter might be a plan to learn more about nutritional management of diabetes because of a change in job responsibilities. The current study does not permit speculation about clinical dietitians' views of their planning needs. This would be an interesting subject for future research.

Question 3: To what extent do clinical dietitians engage in reflective practice?

It is not possible from these data to conclude with certainty that clinical dietitians in Ontario are reflective practitioners. Indirectly, however, data suggest that dietitians engage in reflection to varying degrees. Both qualitative and quantitative data suggest that providing clinical teaching experiences for dietetic interns promotes reflection. Although the phrase, reflective practice, is unfamiliar to most respondents, this does not mean that clinical dietitians do not engage in reflection. Individual professions develop their own vocabulary, and talk of reflection is not part of dietitians' vocabulary. Perhaps not surprisingly, the researcher found that the boundaries between reflection and learning through collaboration with others became blurred as the study progressed. Data which suggest that dietitians do not have time to pursue areas of interest within their practice may not bode well for reflective inquiry within their practice, given that reflection requires time. On the other hand, collective inquiry may be supported to the extent that dietitians feel able to question established practices, to collaborate with other professionals, and to communicate openly on interdisciplinary teams. Participation on patient care teams may encourage reflection through interdisciplinary discussion of challenging cases.

Question 4: What organizational factors are perceived by dietitians to support learning?

This study was conducted amidst wide-spread reorganization, downsizing, and re-engineering of health care organizations in Ontario. In an attempt to reduce operating costs and improve effectiveness, many health care organizations are questioning their traditional ways of operating and are establishing new processes and organizational structures. Many have discarded departmental management structures in favour of program management. Data from this study confirm that many clinical dietitians practice in organizations that are in the midst of change. Until recently, most clinical dietitians would have reported to a dietitian within a Department of Nutrition Services; however, these data confirm that this is no longer the case. Some dietitians report to managers who may not understand the role of the dietitian, others report to two people, and others

indicate that they do not have a boss. Written comments verify that re-engineering is occuring within many organizations and that dietitians are participating in these change processes. Featured literature suggests that large-scale change can cause stress and uncertainty, which may impact negatively on learning. Based on the featured literature and on observations that many dietitians work in difficult conditions with limited career opportunities, altered expectations of their roles, and uncertainty about the future of their jobs, the researcher postulated that dietitians would not feel successful in this environment of change and uncertainty. However, data from this study suggest that this is not true.

Contrary to suggestions in the literature that many characteristics of contemporary organizations are incompatible with supportive learning environments (Hardy, 1995; Kofman & Senge; 1993; Thompson, 1995) and that characteristics of contemporary organizations often discourage those behaviours most related to individual and collective learning (Thompson, 1995), both qualitative and quantitative data suggest that clinical dietitians in Ontario do not appear concerned about unsupportive learning organizations. Time pressures are problematic for many, and a lack of financial support and insufficient access to current resources are also problematic for some. Despite this, data suggest that clinical dietitians perceive their practice settings to be supportive in the sense that they report having autonomy, freedom to set goals and priorities within their practice, and opportunities to influence the development of policies, procedures, or programs that affect them. Most report that their achievements and contributions are valued by their boss and by other members of the health care team. This reported satisfaction may be consistent with literature that reports that people flourish in organizations with high degrees of participation, teamwork, shared power, collaboration, and an open sharing of information (Hardy, 1995; Pierce, 1987). This satisfaction may also be consistent with intrinsic theories of motivation which suggest that employees are motivated when their work is meaningful and enjoyable, their aims are consistent with those of the organization, and they feel valued (Brown, 1995).

It may be that many clinical dietitians work in organizations that are neutral to learning rather than actively supportive of leaning. Clinical dietitians may perceive organizational support differently than the way it is portrayed in the featured literature. It is conceivable that dietitians may view organizational support in terms of other indicators, such as flexible work schedules. It is also likely that the apparent absence of an immediate authority figure for many clinical dietitians enhances their sense of autonomy and reduces potential conflict that might be associated with the exercising of management authority. A discussion by Brown (1995, p. 26) on the difference between espoused culture and actual culture may also be relevant to this discussion. He says that organizations may espouse commitment to certain values, such as supporting learning by employees, but act according to different values. Brown (1995) goes on to say that many people seem able to tolerate high degrees of inconsistency between the espoused and actual cultures in the organizations in which they work. Sometimes, this will be because people have mentally conflated the espoused and the actual, thus failing to distinguish between the two. Others may recognize the difference, but accept that organizations may portray themselves as they would like to be, rather than as they are.

Fewer than half of the dietitians in this study report having sufficient time to participate in activities that enhance their practice. Despite reported time pressures, however, participation on interdisciplinary committees and program management teams is highly valued by dietitians. This participation may provide dietitians with opportunities to influence the direction of programs they are involved in, and may place them at the table with the traditional decision makers - doctors and managers. As a result of widespread reorganization, dietitians may feel encouraged to participate in the change process. Although highly valued, extensive committee participation does have a price, in terms of time. Unrelenting time pressure impacts on time for reflective inquiry, and may result in professionals feeling frustrated. This, in turn, may result in an erosion of their sense of commitment and in a sense of personal failure (Benner et al., 1996; Benveniste, 1989).

Clinical dietitians may need to exercise their freedom and autonomy by evaluating the extent of their non-patient care commitments and the relative value of these commitments, and then making decisions about how their time would be best spent.

Learning generates confidence

An association between learning and confidence emerged as a theme from the interviews and questionnaire responses. Further evidence was provided by the regression analysis. Interview participants report an increase in confidence as a result of (a) learning that led to successful performance, and (b) knowing that their contributions were valued by other health care team members. This theme is consistent with the discussion by Wlodkowski (1993) who suggested that professionals are motivated when they are learning something they value; thus, they are more apt to be continuous learners. Resnick (1989) concludes that successful learners tend to see themselves as being in charge of their learning. Since dietitians already see themselves as being continuous learners, it means that they are very motivated to learn. This relationship has implications for organizations interested in promoting the professional growth of dietitians. Dietitians need to feel confident and committed to their work in order to perform well.

Predictors of continuous professional learning.

Prior to conducting the research, it was difficult to anticipate what relationships, if any, might exist. At the outset of this study, the researcher sought to use the General Linear Model to investigate relationships between continuous professional learning and the following categories of variables: (a) organizational and peer support for participation in activities which foster learning from practice, (b) the dietitian's stage of professional expertise, based on the levels proposed by Benner et al. (1996), and (c) personal and organizational factors which may influence participation in learning. As the study progressed, some of these notions were shown not to be feasible. It became evident that stages of professional expertise could not be captured by the instrument used in this study; therefore, this construct could not be included in regression analysis. However, the other

constructs of interest were included. It also became apparent that the dependent variable would not reflect actual participation in professional learning. Therefore, the principal researcher chose to use perception of oneself as a continuous learner as the dependent variable.

The results of the principal component analysis and regression analysis suggest that there is a relationship between dietitians' perceptions of themselves as continuous professional learners and the degree to which they engage in activities that promote learning from practice. An even stronger relationship appears to exist between dietitians' perceptions of themselves as continuous professional learners and personal factors that deal with professional confidence and planning for professional learning. A relationship does not appear to exist between clinical dietitians' perceptions of organizational support and their perceptions of themselves as continuous learners.

At the outset of this research, there was a rationale for including each item in the questionnaire. Following the principal component analysis, the soundness of this rationale was checked by comparing items in the Professional Learning Factor and Professional Confidence Factor with the original rationale for including each questionnaire item. Generally, questionnaire items appear to have been well conceived to indicate constructs of interest. All items that had been included to indicate interaction with colleagues, and three of the four items that had been included to indicate reflection, became part of the Professional Learning Factor. Self-evaluation, which had been included as an indicator of reflection, and reading professional literature, which had been included to indicate professional learning, loaded more highly onto the Professional Confidence Factor. All items that had been included as indicators of personal factors which may influence participation in learning became part of the Professional Confidence Factor. Individual items that addressed confidence were correlated most highly with this factor.

Strategies to enhance learning from practice

1. It is important that clinical dietitians and their employers are aware of the relationship between competent professional practice and learning from practice. Becoming familiar with some of the featured literature in this research would foster that awareness. Discussing the notion of learning from practice with colleagues, including strategies that may have been successful for some and barriers that may have discouraged others, would foster this awareness and would promote the sharing of strategies to enhance learning from practice.

The positive perception that clinical dietitians in Ontario have of themselves as learners suggests that they undertake learning willingly that they perceive to be worthwhile. This perception also suggests that they accept learning strategies that they judge to be worthwhile. For this reason, the researcher anticipates that clinical dietitians will be interested in learning more about how to enhance their learning from practice. Collaborative and mentoring relationships may be particularly valuable and appealing to dietitians because they can enter into these relationships at the point where they think they need to be, based on their current level of knowledge and experience.

2. It is necessary that dietitians find ways to obtain meaningful, systematic feedback as a method of enhancing professional learning. However, it is important that dietitians play an active role in deciding what type of feedback would be meaningful to them, how they will obtain it in a systematic way, and from whom. Feedback may come from patients, other dietitians, other health care professionals, and managers. It is also important that dietitians participate in the development of assessment tools that they perceive to be meaningful. The work of Benner et al. (1996) may serve as a useful framework for developing tools which are based on dietitians' knowledge of the progression from novice to expert practice within clinical dietetics.

Many aspects of clinical nutrition practice, such as nutrition counselling skills, are used by most clinical dietitians. Therefore, it would seem feasible for organizations such

as the College of Dietitians of Ontario and Dietitians of Canada to coordinate the development of assessment tools for a wide constituency of dietitians. This approach would also help to ensure that sufficient financial and human resources are available to develop tools that are both relevant and credible, and to provide a mechanism to expose the majority of clinical dietitians to this work. Some aspects of nutrition competence relate to specific areas of nutrition practice. For these specialty areas, clinical dietetics practice groups could become involved to ensure that specific aspects of their practice areas are represented by the assessment tools.

3. Similarly, clinical dietitians require assistance to plan effectively for their professional learning. One component of effective planning would involve assisting dietitians to incorporate feedback into the planning process. In the opinion of this researcher, the availability of meaningful assessment tools would serve as an important prerequisite to planning. As with the development of assessment tools, the involvement of organizations such as The College of Dietitians of Ontario or Dietitians of Canada would be helpful.

4. To the extent that they can do so, clinical dietitians need to evaluate the extent and value of their non-patient care commitments and to make decisions about how their time is best spent. Unfortunately, this is likely an issue that faces the entire organization in which the dietitian practices. Janov (1994) suggests that many organizations have confused activities with results in the sense that people in these organizations may be so busy in team meetings that they have no time to do their work.

5. Dietitians who work alone need to create opportunities to network with dietitians in other locations. Opportunities may include participating in site visits with more experienced dietitians, attending practice group meetings, or using informal telephone links to discuss practice issues with dietitians in similar areas of practice.

6. Further discussions are required about specific and practical ways that organizations can support learning by the professionals who practice there. Upon

examination, general sentiments of support for learning may not be matched by supportive practices. Organizations need to ensure that espoused values, such as learning, become expressed as actions (Janov, 1994). For instance, the vague notion of supporting learning can be expressed as specific actions in the following statements: (a) We create time out to reflect on and enhance our efforts, and (b) When we do not know, we ask. When this happens, individuals know if they and their organizations are practicing what they espouse.

Conclusion

In chapter 1 it was suggested that ways of thinking about continuing education and competence for health care professionals are changing. Emerging views emphasize that (a) knowledge acquired from practice is an essential component of competence, and (b) learning occurs through, and is influenced by, participation in a practice community. Furthermore, it was suggested that these views would likely apply to dietetics practice; however, the literature contains few articles about how dietitians learn from practice. Therefore, research was needed to increase understanding of how dietitians learn in practice settings and to identify practical strategies for assisting them to become successful learners.

This research contributes to our understanding of professional learning by clinical dietitians and of dietitians' experiences as learners within organizations. Data from this study verify that the emerging views about professional competence and learning apply to clinical dietetics practice. This study provides valuable information about (a) how clinical dietitians engage in professional learning, particularly within practice settings, and (b) factors within practice settings which can support clinical dietitians to be continuous learners, thereby contributing to their professional competence. Because there are numerous and complex factors that appear to influence both participation in professional learning and perception of oneself as a learner, and because this research was exploratory in nature, further research on professional learning by dietitians is required.

References

Balogun, L.B., Ward, D.C., & Stivers, M. (1995). JCAHO update: The nuts and bolts of competency standards, including age-specific competencies. Journal of theAmerican Dietetic Association, 95 (2), 244 - 245.

Benner, P. (1985). From novice to expert; Excellence and power in clinical nursing practice. Menlo Park, California: Addison-Wesley.

Benner, P.A., Tanner, C.A., & Chelsa, C.A. (1996). Expertise in nursing practice. Caring,clinical judgment, and ethics. New York: Springer.

Benveniste, G. (1987). Professionalizing the organization. Reducing bureaucracy to enhance effectiveness. SanFrancisco: Jossey-Bass.

Bova, B. (1987). Mentoring as a learning experience. in Marsick, V.J. (1987). (Ed.). Learning in the workplace. London: Croom Helm. pp. 119 - 133.

Brown, A. (1995). Organisational culture. London: Pitman.

Bryman, A., & Cramer, D. (1994). Quantitative data analysis for social scientists. London: Routledge.

Cervero, R. M. (1988). Effective continuing education for professionals. San Francisco: Jossey-Bass.

Cervero, R. M. (1992). Professional practice, learning, and continuing education: an integrated perspective. International Journal of Lifelong Education, 11 (2), 91 - 101.

College of Dietitians of Ontario. (1997). Professional standards for dietitians in Canada.

Derelian, D., Fitz, P.A., & Babcock, P.M. (1995). President's page: ADA leadership in regulatory reform to reengineer credentialing competency standards. Journal of the American Dietetic Association, 95 (8), 924.

Dougherty, D.A., & Tower, J.B. (1989). President's page: New project to help practitioner competence. Journal of the American Dietetic Association, 89 (7), 977 - 978.

Dubin, S. S. (1990). Maintaining competence through updating. In S. L. Willis & S.S. Dubin (Eds.), Maintaining professional competence (pp.9 - 43). San Francisco: Jossey-Bass.

Dweck, C. (1986). Motivational processes affecting learning. American Psychologist, 41 (10), 1040 - 1048.

Flournory, I.G. (1984). Planning for continuing education: Goal setting and self-assessment. Journal of the American Dietetic Association, 84 (8), 926 - 928.

Fynn, C., Bryk, J.A., & Neal, M.L. (1991). Perceived continuing education needs of RD's and DTR's. Journal of the American Dietetic Association, 91 (6), 933 - 939.

Gauthier, A. (1995). The challenge of stewardshio: Building learning organizations in healthcare in S. Chawla & J. Renesch (Eds.), Learning Organizations. (pp. 385 - 402). Portland, Oregon: Productivity Press.

Geissinger, S.B., Humphrey, R.A., Hanft, B.E., & Keyes, L.L. (1993). Assessing changes in professional attitudes: Effects of continuing education. The Journal of Continuing Education in the Health Professions, 13, 99 - 116.

Hardy, C. (1995). Managing the dream. in S. Chawla & J. Renesch (Eds.), Learning Organizations. (pp. 45 - 55). Portland, Oregon: Productivity Press.

Houle, C.O. (1980). Continuing learning in the professions. San Francisco: Jossey-Bass.

Janov, J. (1994). The inventive organization: Hope and daring at work. San Francisco: Jossey-Bass.

Knight Wilcox, K. Training master teachers to mentor pp. in Marsick, V.J. (1987). (Ed.). Learning in the workplace. London: Croom Helm. 134 - 148.

Kofman, F., & Senge P. M. (1993). Communitites of commitment: The heart of learning organizations. in S. Chawla & J. Renesch (Eds.), Learning Organizations. (pp. 15 - 43). Portland, Oregon: Productivity Press.

Krasker, G.D., & Balogun, L.B. (1995). JCAHO standards: Development and relevance to dietetics practice. Journal of the American Dietetic Association, 95 (2), 240 - 243.

Krueger, R.A. (1994). (2nd ed.) Focus Groups: A practical guide for applied research. Thousand Oaks, California: Sage.

Lave, J., & Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge: Cambridge University Press.

Marsick, V.J. (1987). New paradigms for learning in the workplace. In Marsick, V.J. (1987). (Ed.), Learning in the workplace. (pp. 11 - 30). London: Croom Helm.

Marsick, V.J. (1988). Learning in the workplace: The case for reflectivity and critical reflectivity. Adult Education Quarterly, 38 (4), 187 - 198.

Merriam, S.B., & Caffarella, R.S. (1991). Learning in adulthood: A comprehensive guide. San Francisco: Jossey-Bass.

Morgan, D.L. (1988). Focus groups as qualitative research. Newbury Park, California: Sage.

Parks, S.C., Fitz, P.A., O'Sullivan Maillet, J., Babjak, P., & Mitchell, B. (1995). Challenging the future of dietetics education and credentialing - Dialogue, discovery, and directions: A summary of the 1994 Future Search Conference. Journal of the American Dietetic Association, 95 (5), 598 - 606.

Parks, S.C., Fitz, P.A., O'Sullivan Maillet, J., Babjak, P., & Mitchell, B. (1994). President's page: Future search conference helps define new directions in practice, education, and credentialing. Journal of the American Dietetic Association, 94 (9), 1046- 1047.

Pierce, G. (1987). Management workshop: toward a new paradigm. in Marsick, V.J. (1987). (Ed.). Learning in the workplace. London: Croom Helm. pp. 31 - 54.

Queeney, D.S. & Smutz, W. D. (1990). Enhancing the performance of professionals: The practice-audit model. In S.L. Willis & S.S. Dubin (Eds.), Maintaining professional competence. (pp. 162 - 188). San Francisco: Jossey-Bass.

Queeney, D.S. (1995). Assessing needs in continuing education. San Francisco: Jossey-Bass.

Ravid, G. (1987). Self-directed learning in industry. in Marsick, V.J. (1987). (Ed.), Learning in the workplace. (pp. 101 - 118). London: Croom Helm.

Resnick, , L.B. (1989) Introduction. in Resnick, L.B. (Ed.), Knowing, learning, and instruction: Essays in honour of Robert Glaser. (pp. 1 - 24). Hillsdale. NJ: Lawrence Erlbaum.

Ryan, S. (1995). Learning communities:An alternative to the "expert" model. in S. Chawla & J. Renesch (Eds.), Learning Organizations. (pp. 279 - 291). Portland, Oregon: Productivity Press.

Sanford, B. (Ed.). (1989). Strategies for maintaining professional competence: A manual for professional associations and faculties. Toronto: Scholar's Press.

Schon, D.A. (1983). The reflective practitioner: How professionals think in action.New York: Basic Books Inc.

Schumacher, S. & McMillan, J.H. (1993). (3rd Ed.) Research in education: A conceptual introduction. New York: HarperCollins

Scribner, S. (1986). Thinking in action: some characteristics of practical thought. in R. J. Sternberg & R. K. Wagner (Eds.), Practical Intelligence. (pp. 51 - 83). New York: Cambridge University Press.

Skruber, R. (1987). Organizations as clarifying learning environments. in Marsick, V.J. (1987). (Ed.). Learning in the workplace. (pp. 55 - 78). London: Croom Helm.

Thompson, J.W. (1995). The renaissance of learning in business. in S. Chawla & J. Renesch (Eds.), Learning Organizations. (pp. 85 - 108). Portland, Oregon: Productivity Press.

Wagner, R.K. & Sternberg, R.J. (1986). Tacit knowledge and intelligence in the everyday world. in R. J. Sternberg & R. K. Wagner (Eds.), Practical Intelligence. (pp. 51 - 83). New York: Cambridge University Press.

Watkins, K. E. & Marsick, V. J. (1992). Towards a theory of informal and incidental learning in organizations. International Journal of Lifelong Education, 11 (4) 287 - 300.

Wilkinson, L. (1996). Systat 6.0 for Windows. Chicago: SPSS.

Wlodkowski, R. J. (1993). Enhancing adult motivation to learn. San Francisco: Jossey-Bass.

APPENDIX A

Focus group introduction and questions

Hello. Welcome to our discussion today. Thank you for taking the time to participate. My name is Janine Schweitzer. As you know, I am conducting research for a Master of Education thesis at Queen's University. I am interested in knowing more about how clinical dietitians think about professional learning. Therefore, I have invited clinical dietitians who work in a variety of health care organizations to share their views in this discussion.

We will be discussing your experiences and views about professional learning, particularly that which occurs in your daily practice as a clinical dietitian. There are no right or wrong answers, and there may be differing points of view. Please feel free to share your point of view even if it differs from what others have said. Please keep in mind that I am interested in any comment you may have, whether it is positive or negative or unique.

Before we begin, I need to tell you the ground rules of this discussion.

- I am tape recording the discussion because I don't want to miss any of your comments. To ensure that the tapes are clear, I need you to speak clearly and to have only one person talking at a time. Following the discussion, the tapes of this discussion will be transcribed. These transcripts will serve as data which will be analyzed and included in the research report.
- Your names will not appear in the written research report. Although the research report may contain some quotations, there will be no names attached to any comments. You are assured of complete anonymity.
- Our session will last about 90 minutes. Let's begin. There are name tags in front of everyone to help us remember each other's names.

1. Explain the purpose of the pre-test. The purpose of this pre-test is to determine if the proposed questions (a) ask what I intend to ask, and (b) appear to be meaningful to the participants. It is important that I establish that questions meet both of these criteria in order to have confidence they can yield sufficient data in the focus group interviews.

2. Read "Introducing the focus group. Do you think that the introduction is clear? Do you think the introduction will encourage participation?

3. I am now going to read some questions. For each of the following questions, please tell me:

(a) what you think the question is asking,

(b) whether the question means anything to you (i.e., could you answer it?), and

(c) whether you think the question will elicit the desired information from dietitians. You are not required to answer the actual focus group interview questions. If you do not wish to answer the question, I would appreciate if you would comment on how you think dietitians, in general, might answer the question.

4. Questions of interest:

4.1 When I asked you "to think about a recent experience where you learned something that enhanced your competence as a dietitian or helped you understand your work differently", please describe the learning experience that came to mind.

4.2 Why did you take advantage of this learning opportunity?

4.3 Why did you identify this as a significant learning experience ?

4.4 Is there anything about your work setting that supports you as a learner?

4.5 Tell me about activities or experiences within your work setting that you think are effective in contributing to your professional learning (or in helping you to remain competent in your practice)?

4.6 What, if anything, does the concept of "reflective practice" mean to you, and to what extent do you engage in reflective practice?

4.7 Tell me about collaboration with others as a source of learning for you.

4.8 Within your practice as a clinical dietitian, how much importance do you place on tools such as standards of care, documentation guidelines, or nutrition care procedures?

4.9 Is there anything else that you would like to add to this discussion before we close?

APPENDIX B

Invitation to participate in pre-test interview

November 25, 1996

Dear Participant,

As you may know, I am conducting research for a Master of Education thesis at Queen's University. Part of my research involves having a series of focus group discussions with clinical dietitians to explore their views on professional learning. Before I conduct the focus groups, I would like to pre-test the questions. I am writing to invite you to help pre-test the questions. Let me explain what will be involved, if you agree to participate.

You will be asked to participate in a discussion, lasting no more than 90 minutes, with a few other clinical dietitians. Lunch will be provided. Before you come to the discussion, you will be given a question to think about. This question will provide some framework for the discussion. During the discussion, I will introduce the topic and read the proposed research questions. You will then be asked to comment on the clarity of the introduction and the questions. You will also be asked whether the questions are meaningful to you. You will not be required to answer the actual focus group questions, but I am interested in hearing how you think other clinical dietitians might answer them.

I plan to audiotape this discussion. Although data from this discussion may be used in the research report, your name will not appear, and there will be no names attached to any comments. You are assured of complete anonymity.

I hope that you will participate. If you can participate, please sign the enclosed Consent Form and return it to me before December 6. I will then call you to arrange the time of the discussion.

Should you have any questions about the research, please call me at work 544-3400, ext. 2176 or at home 549-7258. You may also contact my thesis supervisor, Dr. Lyn Shulha, Faculty of Education, Queen's University at 545-6000, ext. 5016.

Sincerely,

Janine Schweitzer, RD

APPENDIX C
Consent to participate in interview

I,_____, consent to participate in a focus group discussion, facilitated by Janine Schweitzer, for the purpose of pre-testing questions for a research project entitled "Professional learning by dietitians". I understand that the discussion will be tape recorded.

I agree to arrive promptly and to remain for the duration of the discussion. I understand that the discussion will not last more than 90 minutes.

I understand that I am assured of complete anonymity, and that my name will not appear in a research report. Furthermore, I understand that I may decline to participate at any time.

I understand that if I have any questions or concerns about this research, now or later, I can contact the investigator, Janine Schweitzer, at 544-3400, ext. 2176 . I am also welcome to contact Dr. Lyn Shulha (thesis supervisor), Faculty of Education, Queen's University at 545-6000, ext. 5016.

I am available to attend a discussion at one of these times at Hotel Dieu Hospital:
(Please indicate all times that you are available)

Monday, December 9, 1130 - 1300 hours
OR
Tuesday, December 10, 1200 - 1330 hours
OR
Friday, December 13, 1200 - 1330 hours

Signature:_____

Date:_____

Thank you. I appreciate your assistance!

APPENDIX D

Letter of confirmation to pre-test focus group participants

December 6, 1996

Dear Participant,

Thank you for agreeing to meet with me on Monday, December 9 at 1130 hours at Hotel Dieu Hospital. In preparation for our meeting, I would appreciate if you would think about the following statement which will provide some framework for our discussion:

> "Please think back to a recent experience where you learned something that enhanced your competence as a dietitian or helped you understand your work differently".

I appreciate you taking the time to meet with me. As I mentioned, lunch will be provided. Our discussion will not exceed 90 minutes.

Sincerely,

Janine Schweitzer, RD

APPENDIX E
Form to obtain feedback on questionnaire

March 1, 1997

Dear Participant,

I hope that you'll agree to complete this questionnaire.
I do not want you to return the completed questionnaire to me, but I am interested in knowing the following information:

1. How many minutes did it take you to complete the questionnaire?

2. Were there any questions that were unclear to you, or that you didn't understand?

If so, please indicate the number of each of these questions. I would like to talk to you about these questions, so you can suggest changes.

3. Were there any questions that you found to be offensive?

If so, please indicate the number of these questions. I would like to hear your comments about these questions.

4. Did you find any errors in spelling, numbering, etc.?

If so, please bring them to my attention.

5. Do you have any comments about legibility?

Thanks. I would appreciate receiving your comments this week, if at all possible

APPENDIX F
Questionnaire

An Investigation of Professional Learning by Clinical Dietitians

An Investigation of Professional Learning by Clinical Dietitians

This questionnaire is designed to investigate professional learning by clinical dietitians. Some questions ask about activities that you may do. Other questions ask about your views of professional learning. Other questions ask about your perceptions of the organization in which you work.

Please follow the instructions in each section of this questionnaire. Please read and respond to each item carefully.
If you are not working currently as a clinical dietitian, but have worked as a clinical dietitian during the past 12 months, please complete this questionnaire using your most recent work experience as a reference.

If you have not worked as a clinical dietitian in the past 12 months please do not complete this questionnaire. Simply write "NOT APPLICABLE" on this page and return it in the enclosed envelope. THANK YOU!

Part A. The following is a list of activities that you might do in your practice. There are no right or expected answers, so please just answer as accurately as possible based on your experience in the past 12 months.

Step 1 Please circle all of the following activities that you have done during the past 12 months.
Step 2 Please estimate how often you have done each of these activities during the past 12 months.
Step 3 For each activity that you have done during the past 12 months, please circle the number on the scale that best describes how worthwhile you consider that activity to be **as a source of professional learning for you**.

1 not at all worthwhile for me
2 generally not worthwhile for me
3 undecided
4 generally worthwhile for me
5 very worthwhile for me

Activity	Frequency (# times in past year)	Value of this activity to me (Not worthwhile → Very worthwhile)				
1 Attend workshop(s), conference(s), or seminar(s) away from work	in past year	1	2	3	4	5
2 Attend teleconference(s)	in past year	1	2	3	4	5
3 Participate in journal club(s)	in past year	1	2	3	4	5

(continues on the next page)

	Activity	Frequency (# times in past year)	Value of this activity to me (Not worthwhile … Very worthwhile)				
4	Attend practice group meeting(s) with dietitians in my area of practice	in past year	1	2	3	4	5
5	Attend grand rounds	in past year	1	2	3	4	5
6	Participate in teaching rounds as a member of a interdisciplinary team	in past year	1	2	3	4	5
7	Use newsletter(s) or other material from practice group(s)	in past year	1	2	3	4	5
8	Present talk(s) to dietetic interns, health professionals, or students	in past year	1	2	3	4	5
9	Write article(s) for dietitians or other health professionals	in past year	1	2	3	4	5
10	Write article(s) for the public	in past year	1	2	3	4	5
11	Provide clinical rotation(s) for dietetic intern(s)	in past year	1	2	3	4	5
12	Search the internet for information related to my practice	in past year	1	2	3	4	5
13	Use self-study program(s)	in past year	1	2	3	4	5
14	Other (please specify)	in past year	1	2	3	4	5
		in past year	1	2	3	4	5

(continues on the next page)

Part A (continued). For the next 2 activities you are not required to estimate your frequency of participation

For each of the following activities that you may have done during the past 12 months, please circle the activity and circle the number on the scale that best describes how worthwhile you consider that activity to be as a source of professional learning for you

Activity	Value of this activity to me Not worthwhile				Very worthwhile
15 Participate in formal or informal research in my practice If YES, please describe briefly	1	2	3	4	5
16 Participate on interdisciplinary committees in my work place If YES, please describe briefly	1	2	3	4	5

Part B. The following questions deal with your experiences and views about professional learning. There are no right or expected answers, so please answer as accurately as possible based on your own experience.

Please use this scale to circle your response to each of the following statements

1 this is definitely not true of me
2 this is generally not true of me
3 I am not sure
4 this is generally true of me
5 this is very true of me

	1 Definitely not true of me	2	3	4	5 Very True of me
17 I am a continuous learner in my professional life	1	2	3	4	5
18 I value feedback from other dietitians about my skills or my approach in clinical situation(s) and frequently seek it out	1	2	3	4	5
19 When I am faced with challenging patient care situations, I often think back to similar experiences I have had	1	2	3	4	5

(continues on the next page)

		1 Definitely not true of me	2	3	4	5 Very True of me
20	I value feedback from patients/clients and frequently seek it out	1	2	3	4	5
21	In my practice as a clinical dietitian, I often ask myself, "what do I need to learn that I don't know now"	1	2	3	4	5
22	I often find it stressful to have to learn new things in my practice	1	2	3	4	5
23	Participating in planned professional development activities plays a significant role in my professional learning	1	2	3	4	5
24	After a situation when I did not feel effective in my practice, I usually think about how I might be more effective	1	2	3	4	5
25	I effectively plan for my professional growth and development	1	2	3	4	5
26	Reading professional literature plays a significant role in my professional learning	1	2	3	4	5
27	I do a good job of maintaining my knowledge and skills and keeping abreast of current developments which are relevant to my practice	1	2	3	4	5
28	I rarely engage in self-evaluation in my practice	1	2	3	4	5
29	I value feedback from other health professionals about my skills or my approach in clinical situation(s) and frequently seek it out	1	2	3	4	5
30	Collaboration and/or consultation with other dietitians contributes significantly to my professional learning	1	2	3	4	5
31	I am confident in my professional knowledge and skills today	1	2	3	4	5
32	Spontaneous or unexpected activities within my practice play a significant role in my professional learning	1	2	3	4	5

(continues on the next page)

	1 Definitely not true of me	2	3	4	5 Very True of me
33 When I am uncertain about how to proceed in a clinical situation, I frequently consult with my colleagues	1	2	3	4	5
34 Observing other dietitian(s) in clinical situation(s), whether planned or unplanned, has resulted in valuable learning for me	1	2	3	4	5
35 I plan my professional development based on my assessment of my strengths and learning needs relative to my current practice	1	2	3	4	5
36 I am usually excited by the challenge of learning new things in my practice	1	2	3	4	5
37 I have learned worthwhile things from listening to other dietitians talk about successes or difficult experiences in their practices	1	2	3	4	5
38 Observing other health professionals(s) in clinical situation(s), whether planned or unplanned, has resulted in valuable learning for me	1	2	3	4	5
39 I plan my professional development based on my future career goals	1	2	3	4	5
40 I think that I perform effectively in my practice	1	2	3	4	5
41 I consider my colleagues' assessments of my strengths and learning needs when I think about my professional development needs	1	2	3	4	5
42 I spend my own money on courses, seminars, or professional resources	1	2	3	4	5
43 I rarely find time to read professional literature or participate in professional education on my own time	1	2	3	4	5
44 I am confident that I will have the knowledge and skills that I will need to do my job in the future	1	2	3	4	5

(continues on the next page)

Part C. The following questions deal with how you perceive the organization in which you work. There are no right or expected answers, so please answer based on your own experience.

Using the following scale, please choose the response that best describes your reaction to each of the following statements

1 disagree strongly
2 disagree somewhat
3 neither agree nor disagree
4 agree somewhat
5 agree strongly

		1 Disagree Strongly	2	3	4	5 Agree Strongly
45	In the organization where I work, I am generally discouraged from questioning established practices	1	2	3	4	5
46	Performance appraisals generally help me to learn about myself	1	2	3	4	5
47	I collaborate with others to set goals and priorities within my practice	1	2	3	4	5
48	In the organization where I work, mistakes or gaps in knowledge are viewed as learning opportunities	1	2	3	4	5
49	My achievements and contributions are valued by my boss	1	2	3	4	5
50	Within my practice, I have sufficient opportunities to influence the development of policies, procedures, or programs that affect me	1	2	3	4	5
51	Within my practice, I have sufficient time to participate in activities that enhance my practice as a clinical dietitian	1	2	3	4	5
52	Rules and standardized approaches to providing care are overemphasized in the organization where I work	1	2	3	4	5
53	Within my practice, I have freedom to set goals and priorities for myself	1	2	3	4	5

(continues on the next page)

	1 Disagree Strongly	2	3	4	5 Agree Strongly
54 My achievements and contributions to patient care are valued by other members of the health care team	1	2	3	4	5
55 In the organization where I work, learning is viewed as an essential part of my job	1	2	3	4	5
56 In my workplace, there is an atmosphere of competition rather than cooperation with colleagues	1	2	3	4	5
57 I do not have sufficient flexibility in how I spend my time at work to allow me to pursue areas that are of interest to me	1	2	3	4	5
58 I have sufficient access to relevant current literature and resources	1	2	3	4	5
59 Within my practice, I am frequently presented with situations which are unfamiliar to me and require me to learn new things	1	2	3	4	5
60 In the organization where I work, my colleagues and I share information and ideas fairly openly	1	2	3	4	5

Part D. The following questions are designed to obtain information about respondents. Please respond to each question by filling in the blank or circling the most appropriate response.

61 How long have you practiced as a clinical dietitian?
(Do not count any time that you were away from active practice to raise a family, return to school, etc.)

62 How long have you been in your current position?

63 Please choose the statement that best describes your place of employment
(a) Teaching hospital (i.e., it is affiliated with a Faculty of Medicine at a university)
(b) Non-teaching hospital
(c) Other Please describe

(continues on the next page)

64 How many clinical dietitians (including yourself) are employed by the organization where you work?
(Please indicate the number of people, regardless of whether they work full-time or part-time.)

65 Please choose the statement that best describes where you fit in the organizational structure in your workplace
(a) Department of Nutrition and Food Services
(b) Department of Clinical Nutrition
(c) Program (within a program management model)
(d) Other Please describe

66 Please choose the statement that best describes the person to whom you report
(a) Dietitian
(b) Health care professional other than a Dietitian Please specify
(c) Other Please describe

67 Please choose the statement that best describes your current employment status
(a) Full-time
(b) Regular part-time Please specify usual number of hours worked per week
(c) Term Please specify duration of position, if known
(d) Other Please describe

68 Please choose the statement that best describes your highest level of academic degree
(a) Baccalaureate degree Please specify degree
(b) Masters degree Please specify degree
(c) Doctorate degree Please specify degree

69 Are you currently working toward an academic degree? YES NO
If YES, please specify the degree

Please check to see that you have answered all of the questions
THANK YOU FOR YOUR PARTICIPATION
Please mail this questionnaire in the enclosed postage-paid envelope before April 10, 1997
If you have misplaced the envelope, the return address is
Janine Schweitzer, RD
227 Albert St., Kingston, Ontario K7L 3V4

APPENDIX G
Letter to College of Dietitians of Ontario to request permission to use mailing list of clinical dietitians

November 25, 1996

Marion Muirhead, Acting Registrar
College of Dietitians of Ontario
438 University Avenue, Suite 1810
Toronto, ON
M5G 2K8

Dear Ms. Muirhead:

I am writing to ask permission to obtain the names and addresses of all clinical dietitians who are members of The College of Dietitians of Ontario. This letter explains my request, describes how this information will be used, and gives assurance that ethical review has occurred.

I am pursuing a Master of Education degree at Queen's University. My thesis explores professional learning among dietitians, in particular learning that occurs from practice. This research also investigates factors within practice settings which can support dietitians to be successful learners, thereby contributing to their professional competence. I anticipate that this research may be of interest to The College of Dietitians of Ontario.

A component of this research involves mailing a pre-tested questionnaire to a random sample of clinical dietitians in order to investigate their perspectives about professional learning. Each questionnaire will be accompanied by a letter which explains the purpose of the study and assures anonymity. I would like to send this questionnaire to a random sample of clinical dietitians who are members of the College of Dietitians of Ontario. This research proposal has been approved by the Faculty of Education Ethics Review Committee at Queen's University.

I will contact you later this week to discuss my request. In the meantime, you are welcome to contact me at (613) 544-3400, ext. 2176 or Dr. Lyn Shulha (thesis supervisor) Faculty of Education, Queen's University at (613) 545-6000, ext. 5016.

Sincerely,

Janine Schweitzer, RD

APPENDIX H

Letter to College of Dietitians of Ontario to request financial assistance with postage costs of survey

February 12, 1997

Daniela Catallo
College of Dietitians of Ontario
438 University Avenue, Suite 1810
Toronto, Ontario
M5G 2K8

Dear Daniela:

Thank you for taking time to speak with me Tuesday, and for carrying my request forward. As you know, I am approaching the College of Dietitians of Ontario for financial assistance to cover postage costs associated with my Master of Education thesis. I believe that my research, which is entitled Professional Learning by Dietitians, will be of interest to the College. I would be pleased to make the results of my research available to the College.

I am enclosing a brief summary of my thesis proposal, and would be happy to provide more information if you require it. I hope that this research will increase understanding of how dietitians learn in their practice, and will stimulate discussion among dietitians about the need for expanded views of professional learning.

I plan to mail a questionnaire to clinical dietitians who are members of the College. As I mentioned, I have already received permission to use the College mailing list. I am focusing only on clinical dietitians in order to have a manageable number of variables for data analysis. I am hoping that financial assistance from the College will enable me to survey the entire population of clinical dietitians in Ontario and to do the necessary follow-up to obtain a high response rate. A large number of responses from the entire population of clinical dietitians in Ontario will yield more meaningful data than if a smaller number of dietitians is surveyed. If I cannot obtain financial assistance I will conduct this research with a smaller number of dietitians.

I estimate my postage costs to be $865.00. This includes stamps ($0.48 each) for 600 questionnaires, 600 self-addressed envelopes, and up to 600 reminder letters and questionnaires to non-respondents. A high initial response rate will reduce these costs.

I look forward to your reply. During the day, I can be reached at (613) 544-3400, ext. 2176.

Sincerely,

Janine Schweitzer, RD

APPENDIX I

Letter of invitation to participate in the survey research

March 23, 1997

Dear Colleague,

I am writing to invite you to participate in a research project which is investigating professional learning by dietitians. This research is part of a Master of Education thesis at Queen's University. Your participation will contribute to an increased understanding of dietitians' views about professional learning and their experiences as learners within organizations.

I hope that you will complete the questionnaire and return it to me before April 10 in the enclosed postage-paid envelope. It will take about 15 minutes to complete. The success and quality of this research are dependent upon receiving a large number of responses to the questionnaire. I plan to publish this research in the interest of increasing understanding of factors which contribute to successful learning and professional development by dietitians.

This questionnaire is being sent to all clinical dietitians who are members of the College of Dietitians of Ontario. You are assured of complete anonymity. Your name will not appear in a research report and your responses will not be identified as yours. Names are included on the return envelopes only to allow identification of people who may need a reminder letter. Your completed questionnaire will be taken from the envelope so that you cannot be identified.

Should you have any questions or concerns about the research, now or in the future, you may contact me during the day at (613) 544-3400, ext. 2176 or in the evening at (613) 549-7258. You may also contact Dr. Lyn Shulha, thesis supervisor, in the Faculty of Education, Queen's University at (613) 545-6000, ext. 5016 or Dr. Rena Upitis, Dean, Faculty of Education, at (613) 545-6000, ext. 7238.

You may decline to participate. However, I would ask you to reflect on this decision in light of the potential benefits of this research to our profession.

Thank you, in advance, for your help. I appreciate the time and effort you will take to complete the questionnaire.

Sincerely,

Janine Schweitzer, RD

APPENDIX J
Reminder letter to non-respondents of survey

April 16, 1997

Dear Colleague,

Recently I sent you a questionnaire and invited you to participate in a research project which is investigating professional learning by dietitians. I am writing because I don't believe that I have received a completed questionnaire from you.

If you have already returned it, thank you.

If you did not receive the questionnaire or have misplaced it, I would be pleased to send you another one. Please call me at (613) 544-3400, ext. 2176.

If you have been too busy to complete the questionnaire, I am writing to encourage you to take 15 minutes today to do so. Your participation will contribute to an increased understanding of dietitians' views about professional learning and their experiences as learners within organizations. The success and quality of this research are dependent upon receiving a large number of responses. To date, 52%. of the questionnaires have been returned. Although this is very encouraging, I am hoping to receive more responses.

Thank you, in advance, for your assistance. I appreciate the time and effort you will take to complete the questionnaire.

Sincerely,

Janine Schweitzer, RD