CLINICAL DENTAL EDUCATION AS A SITUATED ACTIVITY: THE TEACHERS' ROLE

By

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A Thesis
Submitted to the Faculty of Graduate Studies in Partial Fulfillment of the Requirements for the Degree of

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To the beautiful memory of my niece Aida, who fought a wonderful battle with cancer, supported by faith and a true inward peace. The physical existence failed; the soul is set free to joint the Heavenly Choirs.

To my life partner, Sophy, whose name means "wisdom", and whose nickname Salwa means, in Arabic, "the comforting companion". She is always the wise and comforting companion.

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ABSTRACT

The education of dentists is historically rooted in apprenticeship. Traditionally, the professional community of dentists reproduced itself by having newcomers to the profession join the practice community and learn from expert practitioners. Recent developments in dental education indicate that philosophies have come full circle to revisit the apprenticeship concept. Situated learning theory is a productive framework for studying learning through apprenticeship, since it involves the education of the whole person and is not limited to the transfer of knowledge and skills. Lave and Wenger (1991) introduced the concept of "legitimate peripheral participation" as a critical rethinking of the concept of learning. This concept can be applied to dental education in that a "newcomer" begins in a peripheral position, and though immersion in the practice and culture of the profession, gradually assumes full participation in a community of practitioners. This study was designed to examine the views of the clinical teachers in dentistry with respect to their roles in students' learning and growth toward the profession. A diverse sample of ten clinical teachers representing full-time and part-time teachers, different expertise, length of experience and gender have participated in one-on-one question-guided interviews. A content analysis of interview data revealed views on the development of technical knowledge, professional communication skills, and professional values that were consistent with the literature on situated learning and legitimate peripheral participation. Concerns were expressed regarding the legitimacy of weak students, communication with students and development of students' professional identity.

ACKNOWLEGEMENTS

Interdependence is a higher value than independence.
Stephen R. Covey.

This work is a result of the cooperation of many individuals I owe gratitude to them all.

It began with Dr. Alexander (Sandy) Gregor who encouraged me to pursue graduate studies in Education to enhance my role as a teacher in Dentistry. I am grateful to Dr. Jamie-Lynn Magnesson who inspired me to explore the concepts of situated learning, and guided the beginning of this work. I am also grateful to Dr. Lynn Taylor, who through her dedication and sound advice my first experience through the wilderness of qualitative research was made possible, and this thesis became a reality. Through their guidance and efforts, I gained a wider perspective on my field of work: Clinical Dental Education.

For the development and production of this thesis, I feel a deep sense of gratitude:

- To Sophy and to each of our children and their spouses for giving me the support and the peace of mind that was necessary for a positive work atmosphere.
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- to my colleague, Helen Lyttle, for her professional advice and editorial comments.
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- to Christine Osbak, for word processing and the final assembly of the thesis.
- to Lisa Chrusch, for the friendly support.
- to the two former faculty members at the Faculty of Education, who were of the opinion that I am incapable of writing a thesis - they set the challenge.

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It is a grave responsibility to ask.

It is a privilege to listen.

Blessed are the skilled questioners, for they shall be given mountains of words to ascend.

Blessed are the wise questioners, for they shall unlock hidden corridors of knowledge.

Blessed are the listening questioners, for they shall gain perspective.

Michael Quinn Patton

CHAPTER ONE
Introduction

The aim of professional education is to engage learners in a process that will enable them to become integrated in a community of practitioners. By allowing learners to participate in professional practice, a community of practitioners is able to reproduce itself through a process of cooperation, in which the learning of certain skills, knowledge and traditions are embedded. This concept connotes a particular mode of engagement in which a learner participates in the actual practice of an expert, starting at a peripheral position and progressing towards becoming a functional member in the community of professional practice (Hanks, 1991). The nature of this training, its form and substance, is linked in a profound way to the institutional context within which the learning occurs. The curriculum, the teaching practice, and all aspects of the learning situation are situated within, and are a reflection of, this context.

Dinham and Stritter (1986) have offered various definitions of the terms "profession" and "professional". A common meaning that appears to link the different definitions suggests that a professional is a person who has acquired a certain level of knowledge and skills to practise a profession. However, a professional must also perform a service role which involves serving in the best interest of their client and of society. In this respect, the traditional conception of professional education in terms of "transmission of knowledge" is inadequate, and fails to link the student to the increasingly complex ecology of the profession. This broader perspective on professional knowledge is best learned through a

process of situated activity. Lave and Wenger (1991) described the situatedness of activity as the relational character of knowledge and learning. Their perspective emphasizes a comprehensive understanding of learning involving the whole person, actively involved in a learning process situated in real and complex contexts. In situated learning, the activity and the world mutually constitute each other, in that the learning process as an activity is a legitimate constituent of the world we live in. By legitimate constituent, Lave and Wenger (1991) mean the situated activity perspective on learning stands in sharp contrast to learning as passively receiving a body of factual knowledge, abstracted from the context in which it was generated or may be applied.

Historically, all professional training exemplified situated activity in that it was based entirely on apprenticeships that provided the students with practical experience in an actual professional performance environment (Dinham & Stritter, 1986). In the professional training of dentists, training that was once an explicit apprenticeship format was gradually replaced by institutionalized formats. However, even within the now institutionalized dental education programme, the principle of apprenticeship remain an important aspect of clinical education of dental students. Apprenticeship remains a significant component of dental education since dentists, upon completion of their formal education, are qualified to practise. In contrast, graduates of medical education have to complete a period of internship prior to becoming qualified to practise. Despite its prominence, the contribution of apprenticeship to clinical education has not been adequately addressed in the recent literature on dental education. What constitutes effective apprenticeship? How do clinical teachers view their role in the apprenticeship process? How do

clinical teachers understand student development during the apprenticeship period? The answers to these questions are essential to enhancing dental education.

Lave and Wenger (1991), in examining the historical forms of apprenticeship, undertook a radical rethinking of the conception of learning. They proposed that learning is a process of participation in communities of practice that initially involves peripheral participation. Gradually, engagement increases towards full legitimate participation in the community of practitioners. The situated learning conception of apprenticeship is more encompassing than traditional conceptions in that it describes learning as a process of participation in professional culture rather than something limited by the time and place of learning.

Apprenticeship involves engagement in the social aspect of a community of practitioners. In contrast to a narrow understanding of the term "socialization", this cultural conception is characterized by a relational understanding of knowing and learning, and of the nature of learning activity for the people involved. As Lave and Wenger (1991) indicated: "There is a significant contrast between a theory of learning in which practice is subsumed within the process of learning, and one in which learning is taken to be an integral aspect of practice".

This thesis examines how clinical teachers in dentistry view their role in situated learning in a participatory environment. The study examined their views through three research questions:

1. How do clinical teachers in a Faculty of Dentistry perceive their role in directing the students' learning in a practical application setting?

2. How do clinical teachers conduct themselves to help students understand the purposes and the uses of the knowledge they learn in an active applied environment?
3. How do clinical teachers view students as participants in learning activities that prepare them to become members in a community of practitioners?

The historical background of dental education, starting with an apprenticeship model, and progressing through the institutionalized model of dental education, is studied through a review of the literature in Chapter Two. The remainder of the chapter reviews the development of the dental curriculum since institutionalization began until the most recent curricular trends. These modern curriculum trends suggest a return to apprenticeship principles in a learning environment that supports the concept of the situated learning theory described by Lave and Wenger (1991).

Chapter Three describes the Faculty of Dentistry at which the research took place. This descriptive account is intended to provide the reader with background information about the setting of the clinical teaching environment and the participatory activities of the students. Chapter Three concludes with the purpose of the study and a statement of the research questions.

The research design of this study is decribed in Chapter Four. A discussion of the interview method, selection of participants, and the methods of data analysis are described and supported by the appropriate literature. The remainder of the chapter describes the procedure followed in carrying out the research.

The research findings are reported in Chapter Five. The clinical teachers' views are reported according to the categories that emerged through the content analysis of the data. Global categories and related specific categories were defined and organized to parallel the research questions. Since emergent categories were grounded in and dispersed throughout a rich body of data, a distinct boundary between the research questions did not exist. Consequently, the research findings are presented by emergent themes, rather than research questions.

In Chapter Six, the teachers' views, as they relate to the research questions and the relevant literature, are presented and discussed. The teachers' views are interpreted in terms of the concept of situated learning. The chapter closes with recommendations suggested by the findings of the research. Finally, Chapter Seven concludes the study with reflective views of the researcher based on his experiences in conducting the study.

CHAPTER TWO

Review of the Literature

From Apprenticeship to Dental Education

Historically, all professions depended entirely on apprenticeship for the production and reproduction of their distinct communities. This practice gradually moved to an institutionalized conception of professional education which characterizes the learning process as "transmission of knowledge", culminating in a structured and organized expert knowledge. From this perspective, schooling is usually assumed to be a more effective and advanced medium for "transmission of knowledge" than previous forms of apprenticeship. Nevertheless, the institutionalized organizations and the communities of practitioners continue to share their common historical roots (Lave, 1988). In other words, institutionalized education still remains an apprenticeship in concept, but to a different degree.

In the case of dental education, this sharing of common roots is evident in the clinical teaching, where learners participate in a community of practice, in which the process of mastery of knowledge and skill requires newcomers to move gradually toward full participation in the professional community. This chapter examines the historical roots of the dentists' practice community, and the influence of such a community in supporting institutionalized learning as a privileged role in professional development. The chapter also reviews the literature related to the development of the curriculum of study in dentistry to the most recent curricular and institutional changes. Views regarding the dental educator are also reviewed.

The Early Learning Environment

Dental practice existed before dental education. As in many other "crafts" it existed where need, interest, and abilities were found. Some historical evidence refers to the early migration of dentists from England and France to the United States, and later to Canada either directly, or via the United States. Earlier histories of such groups are not clear in the existing literature, although early Egyptian and Greek civilizations showed evidence of dental treatment (Goulet, 1955).

The dental practitioners of the nineteenth century and earlier were either medical professionals who provided dental treatments as an emergency measure or an additional skill; or those who had served a period of apprenticeship with a dental practitioner. Such apprenticeships started as loose arrangements of unspecified periods, and gradually developed into an organized relationship controlled by legal contracts outlining the obligations of both parties[1]. In the latter part of the nineteenth century another category of trainees appeared, namely, those who combined a period of apprenticeship training with formal medical school education. It was this group that initiated formal organizations of dental practitioners in order to develop guidelines to regulate professional standards (Goulet, 1955).

The Development and Role of Professional Organizations

The development of professional organizations and their role was much more diverse and variable in the United States than in Canada. Since

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[1] For example, legal contracts protected the teacher's "territory" by dictating how far away the apprentice was allowed to establish his/her future practice (Goulet, 1955).

the purpose was similar, the discussion of the early developments will be limited to the Canadian scene. Later developments are more similar in the two countries and will be generalized to the North American scene.

Canadian professional organizations evolved first in Ontario (Upper Canada) and Quebec (Lower Canada) as one might expect, given the more dense population, and the variety of people settling in the land in those two areas prior to Confederation. Soon after confederation, "The Act Respecting Dentistry" was legislated in Ontario in 1868. This Act has established rules for practising dentistry by initiating a "Board of Examiners" and empowering the board by bestowing on it the right to issue a licence, a certificate, and to designate a title. The organization created as a result of the Act was named the "Royal College of Dentists of Ontario". One of the mandates of the College was to establish a dental college, the initiation of which marked the transition from an era in which the practitioner's qualifications were only his and his mentor's reputations[2], to an era where some principle of proven qualification had to be established. This trend towards legislated acts, professional organizations, examinations and licences spread to Quebec, to the Maritimes, and to the west. In the west, it coincided with the "Gold Rush" era in which many flamboyant practitioners appeared, armed with false claims and testimonials.

Within two decades, all provisional legislation, examination boards and licensing bodies were in place, thereby creating the need for dental schools. The need for development of schools was further stimulated by the fact that the medical profession had already established a formal

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[2] "His" reflects the culture and the practice of the time, where dental practitioners were only males.

schooling system, offering degrees and titles for graduates. Moreover, in the United States, there were a number of dental schools already in place. Some of these American dental schools were university and church sponsored, while others were independent schools.

In the era of board examinations and licences the common rule was that new practitioners, and those with less than three years experience, were required to take examinations for licensure. On the other hand, those with longer experience were granted a license without examination. Furthermore, experienced dentists were accepted as preceptors who could allow new members to apprentice in their offices. The Board examinations consisted of two levels of matriculation. In the preliminary matriculation there were compulsory subjects such as English Language, Grammar, Composition and Writing, Calculations, Geometry, Algebra, Mechanics of Solids and Fluids, as well as optional subjects such as History, Geography, French, Greek and other general interest subjects. The final matriculation examination encompassed subjects such as Anatomy, Physiology, Chemistry and Therapeutics. All the subjects were offered in medical or dental schools. Perhaps most notable, however, was that an apprenticeship under one or more qualified dental practitioners for a period of at least twelve months was required (Staff, Dominion Dental Journal, 1891).

Before dental schools were established, students apprenticed with experienced practitioners who were recognized as legitimate participants of the community of practice. The examinations and the license were intended to assure the practising community that the newcomers' knowledge, skills and professional values met acceptable standards. The period of apprenticeship provided the experienced practitioners an

opportunity to engage the newcomers in a set of practical experiences that would lead to licensure. Although this training process seems to have been adequate for a period of time, the pressure for a more formal training process grew. In part, this pressure was stimulated by the presence of dental schools in the United States, as well as by individual activists who were looking to formal education as a means of upgrading the profession.

The Development of Dental Education

One of the earliest Canadian initiatives was launched by G.L. Elliott, a member of the Board of Examiners of Ontario, and a member of a committee formed by the Board to study the need for a school. On his own initiative, Elliott established the first dental school in Canada in 1868. Unfortunately, this school experienced financial difficulties which led to its closing shortly after its opening (Bengall, 1954)[3]. The Ontario College of Dental Surgeons decided to start a dental school as its teaching division a year after the attempt by G.L. Elliott to create a dental school had failed. The medical subjects were taught at the medical college of Victoria University, and the dental subjects were taught by four dental instructors. There was no mention of school clinics or "infirmary"; the students apprenticed in the instructors' dental offices, probably on a rotational basis (Bengall, 1954). This attempt, although it had a slightly longer duration than the first one, was likewise unsuccessful and closed after about one year.

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[3] According to Bengall (1954), the school was forced to close as a result of experiencing a debt of one hundred and fifty dollars. This debt was realized through the sale of the school's equipment. The school trained only two dentists.

The next attempt, also by the Royal College of Dentists of Ontario, was not made until 1875. Two dentists were given the teaching responsibility: J.B. Willmott, a graduate of the Philadelphia Dental School with a degree in dentistry (the first organized state dental school in the United States), and L. Tesky, a graduate of Trinity Medical School, with a degree in medicine. These two dentists taught the dental and medical subjects, while the clinical practice remained with practising dentists who acted as preceptors. This marked the beginning of institutionalized dental education in Canada.

A few years later a new issue emerged when those dentists who graduated from the school demanded a degree so that they would be differentiated from those who apprenticed only. However, the school was not empowered to grant degrees; in 1888 however, it joined the University of Toronto, which established the Department of Dentistry of the University of Toronto (Staff, Dominion Dental Journal, 1889). The curriculum, which had been approved by the Senate, consisted of two sets of lectures of five months duration each. In addition, the students were assigned to daily practice at the school clinics, and to a period of apprenticeship in an office of a reputable dentist. The importance of this clinical experience was reflected in the final examination, which included practical examinations in clinical subjects. The university affiliation continued, despite the public's objection to funding the education of dentists who charged for their services when they became practitioners.

During the first quarter of the twentieth century, new dental schools were established: one English and one French school in Quebec, and one school in the Maritimes. By 1925, all four schools were degree-granting university faculties. With this status, new issues emerged.

Entrance requirements had been an issue since the early days of examination boards and schools when the social and cultural status of the professional was a concern.[4] A further issue in the institutionalization of dental education concerned the knowledge and the integrity of the examiners, and the careful selection of the proper examiners for the honorable task. The resolution of these issues has shaped the characteristics of the members of the professional community in terms of skills, knowledge and professional values. By the 1940's the dental curriculum had become a full course of four years of study with in-school training. Apprenticeship in mentors' private offices had been displaced by clinical experience in the school setting (Bengall, 1952). It appears that the mentors were brought into the schools as teachers, and the apprenticeship was performed in the schools as part of the students' daily training.

The role of educational organizations.

As dental education continued to expand, the issue of "standards" became more eminent. This was especially true in the United States, where schools were sponsored by different organizations with different interests. The same phenomenon was evident in Canada, although not to the same degree. A need for a method of standardization and uniformity in the quality of teaching among dental schools had developed. The "National Organization of Dental Faculties" was formed in the United States in 1884

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[4] An editorial of the Dominion Dental Journal in 1894, signed by L.D.S. Toronto, stated that; "The facilities for obtaining such preliminary training especially in Ontario, are better than ever, and I plead for it with all the emphasis possible. The social character of the professional has great weight in a community. I cannot pretend to explain it, but by my observations of residence in both the United States and in Canada, leads me to the conclusion that, if the bell-boys want to aspire to become dentists, and there is no reason why they should not so aspire, they should be first compelled to prepare for entrance by a thoroughly good preliminary education".

and remained in existence until 1923. The Canadian dental schools were represented in this organization.[5] This organization was behind the major reform in American Dental Schools that occurred in 1918. Schools were then examined with regard to the adequacy of their teaching staff, curriculum and physical facilities. Those schools that did not meet certain standards either had to upgrade or to close. The "Dental Faculties Association of Canada" was developed to fulfill a function similar to its American counterpart. In 1923 both joined with a third group, the "Dental Faculties Association of American Universities", to form an umbrella organization named the "American Association of Dental Schools" (AADS). The need for a Canadian identity appeared and resulted in the formation of the "Association of ~~the Canadian~~ Faculties of Dentistry" (ACFD) in 1967.

Later on, as dental education became the only route through which dentists qualified to practise, the issue of adequacy of dental schools emerged. The response to that was the accreditation bodies. Although the details of the history of development of such organizations is beyond the scope of this short historical review, it is important to mention their role in maintaining "standards" in dental schools by monitoring the adequacy of physical facilities, teaching staff and curriculum content.

Regardless of all the efforts of the educational organizations to maintain standards, it appears that somewhere in the process, a paradigm shift had occurred. Hershey (1986) suggests that a bureaucratic take-over sponsored that shift ~~and changed~~ the focus of understanding to the content of the curriculums and away from the learning needs of the students and

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[5] In Canada, dental education institutions are Faculties of Universities and the term "Dental School" is used colloquially. This, perhaps, is due to the historical roots prior to joining Universities, or due to the influence of the American Universities calling their dental education institutions "Dental Schools".

the development of the profession. Since the early 1980's, focus has shifted again from the content of the curriculum to the pedagogical process. Increasingly, changes in dental education are being guided by principles of student-centered learning.[6] These paradigms will be discussed in more detail in the section on curriculum development.

The role of dental journalism.

An additional influence in the evolution of dental education was the development of dental journalism. Dental journalism began in Canada in the mid 1800's, with a sporadic appearance of local journals supported by either individuals or small groups. In 1889, the same year that the college joined the University of Toronto, the Dominion Dental Journal started publishing on a regular basis. The Journal, based in Ontario, became the first Canadian dental journal to publish regularly. The journal provided forum for discussing issues of dental education. It had a specified section entitled "Our Canadian College", for publishing matters related to the program of the school.[7] Although the Journal had supported the college and the education of dentists, it nevertheless did not deny the right of those who opposed the educational approach to publish their letters. The journal's position was made clear through statements such as: "The college must exist, and the public must have educated dentists,

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[6] Hershey (1986) raises an important point in discussing the needs for curricular change; "We as dentists have a perverse preoccupation with doing things right, as opposed to doing the right things. This may be a consequence of training in a profession long mixed in its perspective, or our own individual personalities may have preselected for us a career in dentistry. Which ever comes first, this *doing things right* has been developed to the substantial detriment of *doing the right things*.

[7] Dr. Bears (1889), the editor, wrote in the first issue; "We attach so much importance to the work of our College, that we propose giving special attention under the above heading (Our Canadian College). The dentists of Ontario have good reason to be proud of the position it has achieved".

and anyone who opposed this demand must simply step aside" (Staff, Dominion Dental Journal, 1889). The journal also supported the issues of entrance requirements, and standards for the matriculation examinations. In that era, when textbooks were not yet available, the journal was a source of educational material.[8] Journalism was therefore viewed as enhancing and supporting the learning of the members of the professional community and carried on a role, similar to that of the educational organizations, in promoting high standards.

The Development of The Dental Curriculum

The major curriculum organization movement that occurred in the 1920's is usually referred to as the "Scientific Movement" (Formicola, 1991). The movement was initiated by what is known as the Flexner and Gies Carnegie Commission Report (Gies, 1926) which laid the foundations for a curriculum structure that dominated dental education for approximately 50 years. By the 1940's, this type of curriculum had become standardized in all the Canadian and United States dental schools. Although major challenges occurred which influenced changes to the internal organization of that curriculum structure, the scientific movement curriculum remains the backbone of today's dental curriculum. The main purpose of the scientific curriculum movement was to organize clinical treatments into scientifically founded therapy. The scientific movement curriculum became known as the "Horizontal Curricular Design"

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[8] An example is an article by W.E. Willmott (1895) entitled "Dental Techniques" in which he describes detailed procedures. He concludes the article by the following statement: "The student should approach his patients with certainty, and that his fingers will do what he has seen other fingers do". This last statement still emphasized the role of apprenticeship in dental education, by showing the value of seeing what others do.

(Figure 1), involving four years of study (Formicola, 1991). As the diagram indicates, the first two years are predominantly basic and preclinical sciences, and the other two years are clinical sciences and clinical experience guided by clinicians who are primarily practitioners.

In the 1960's, a move to broaden the scientific movement emerged when the absence of social science content in the horizontal curriculum became an issue. The profession was recognizing the need to educate practitioners for a practice with more humanistic values and better integrated treatment modalities. This aspect of curriculum development is still struggling to gain a foothold in the changes that are occurring today (Formicola, 1991; Tedesco 1990).

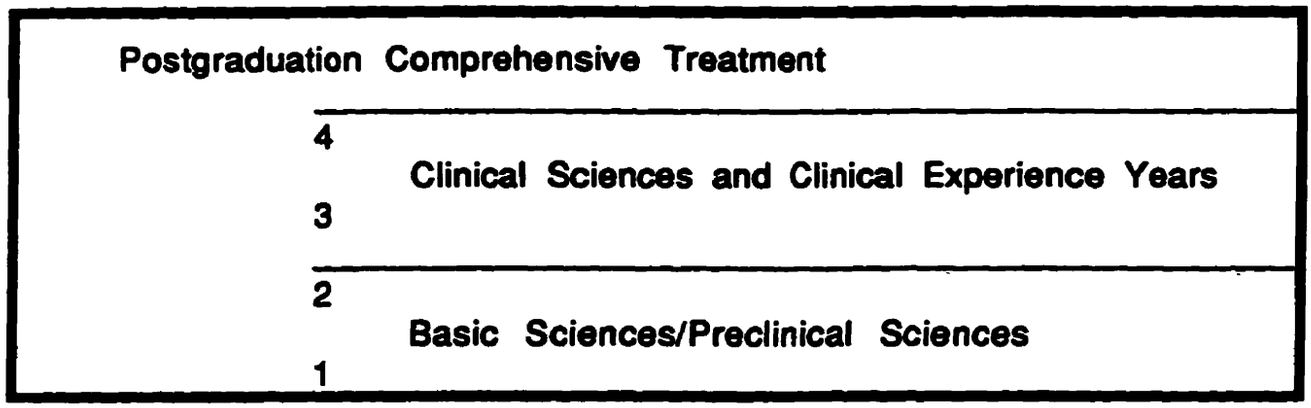

Figure 1: The Horizontal Curriculum Design (1926-1975)

Gradually, during the latter part of the same period, and without any particular pattern, an increase in specialties within dentistry occurred. This was a direct result of the increasing number of graduate programs in dentistry. This trend had increased rapidly from the 1950's and continued into the 1980's, at which time a decline of graduate programs followed the decline in the general applicant pools and enrollment in dental schools. The wave of specialization spread into the dental schools, resulting in an

increasing number of specialists as educators and diminishing the role of the general practitioner as the "Journey Master". This trend resulted in the fragmentation of the experience of the students. Dental treatments in the dental school clinics became focused on department and discipline requirements, rather than the needs of the persons receiving the treatment (Cohen, 1985).

The purpose of the wave of specialization was to create a practitioner with a high level of competency in certain fields of treatments, to whom the general practitioner would refer complicated and difficult treatments. Although the concept was to improve skills and competency, it was not without growing pains. Amsterdam (1975) believed that the profession had become overspecialized, to the point that the various specialties were unable to communicate, and the role of the general practitioner to coordinate the efforts of the specialists was diminishing. A higher ratio of specialists was seen by Amsterdam not to be in the best interest of the public. The American Association of Dental Schools sponsored a study which examined dental education in the 1980's. The study identified the trend toward increased specialty as a serious potential problem and forwarded recommendations that the continued need was for the highly competent general practitioner.

Fifty years after the emergence of the scientific movement and the horizontal curriculum design that was based on that movement, a second movement "The Socially Sensitive Movement", began to influence dental education (Formicola, 1991). According to Formicola (1991), this movement had started gradually in the late 1960's. The socially sensitive movement was concerned with humanistic values in treatments provided by practitioners. This movement recognized the absence of behavioral

sciences in the curriculum, the lack of flexibility, and the compartmentalization (by increased specialization) of the dental curriculum.

The move towards those new concepts gave way to a new curriculum design that became known as the "Diagonal Curriculum Design" as shown in Figure 2 (Formicola, 1991).

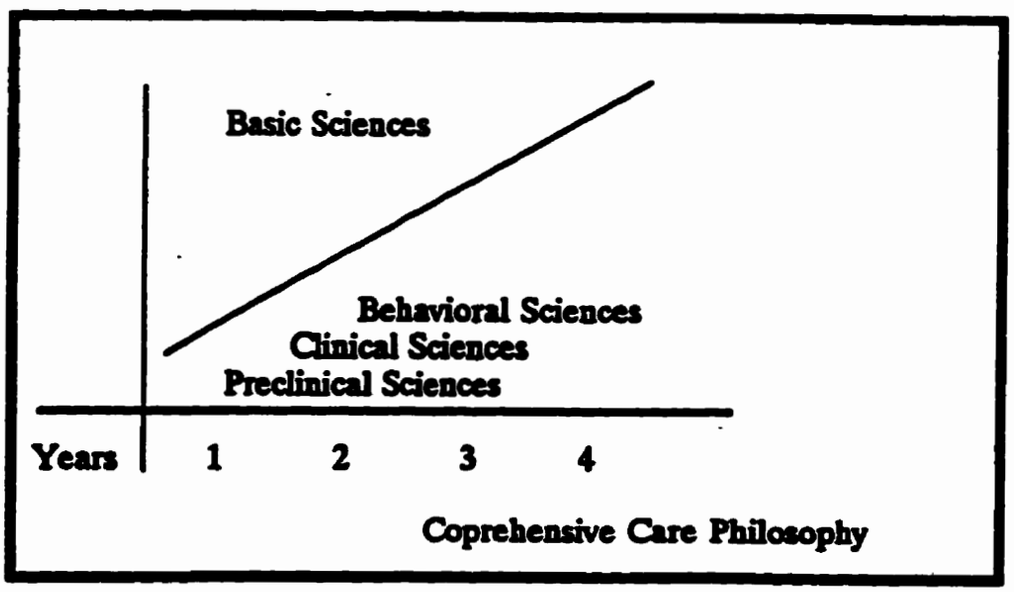

Figure 2: The Diagonal Curriculum Design

In the "Diagonal Curriculum Design", the clinical experience starts early in the program, mostly as peripheral experience, moving gradually into participation in the clinical activities. This initial clinical experience is freely mixed with basic sciences and laboratory preclinical experience, which adds significance and relevance to those areas. The

integrated effect of this movement was valuable, but the dental schools began adopting the concepts to variable degrees according to individual school strengths and capabilities. The Socially Sensitive Movement has laid the foundations for the major challenges to the dental curriculum that started in the mid 1970's, and which still persist to different extents and with varying emphases.

Originally this new curriculum trend was intended to strengthen the motivation of students who were discouraged by the heavy emphasis on basic sciences and laboratory work in the first two years. Later, however, the placement of more clinical sciences into the earlier years created crowding of the first two years, and particularly the second year. Consequently, a new concept of comprehensive patient care was introduced, to increase the humanistic sensitivity of the student to the total needs of the patients' treatments. Comprehensive care was intended to reduce the effect of discipline compartmentalization and fragmentation of learning experiences, as well as provision of treatments.

In summary, the curriculum in dental education continued to evolve since its first institutionalization. The scientific movement established the framework of the curriculum, while the diagonal curriculum and the socially sensitive movements have added new dimensions to both student learning and concepts of clinical treatments. Other factors that have contributed to the current changes in dental education include the changes in demographics and disease pattern, the changes in technologies and treatment modalities, and conceptual changes in paradigms for dental education. These factors will be considered in the next section.

Current Trends in Dental Curriculum

A wave of challenges to the dental curriculum started in the mid 1970's and continues to the present time. These challenges have stimulated the re-examination of dental education. The challenges fall into two major groups; the first group includes external environmental changes. These are mainly the demographic changes that are occurring in the general population, such as an increase in average life span and the medical conditions that complicate the delivery of dental services to an aging population, as well as shifts in disease patterns, primarily a function of improvement in dental health. These environmental changes resulted in a shift in treatment needs. The second group of challenges include the changes in the internal educational environment, and the pedagogical changes that are necessary to respond to external environmental changes. Dental educators are increasingly aware of the need for preparing students to become competent general practitioners, and to respond to technological changes in materials and techniques as well as teaching methodologies and philosophies (Christensen, 1986; Cohen, 1985; Formicola, 1990; Greene, 1990; McNeil, 1990; O'Neil, 1990; Van Hassel, 1990). This awareness stimulated the need for changes in dental education.

The challenges.

Are these challenges valid? The Carnegie Commission Report (Gies Report, 1926) established a blueprint in the 1920's that seemed to produce a well balanced dental curriculum for that time. The outcome of this blueprint was a number of generations of professionals who maintained high standards for their professional practices. Neidle (1986)

in her article entitled "A Paradigm of Failure", indicates that a large percentage of the knowledge acquired in dental schools was either forgotten within a short period of time, or did not lend itself to practical application. She then raises the question "What has gone wrong?". Was it the quality of the students, or a curriculum that became too crowded due to more additions than deletions as knowledge expanded? Or are the methods of teaching not as effective as they should be? Those are the questions that need to be addressed. The word "address" is used rather than "solved", since a unitarian solution could not be promised, as Neidle believed. Rather, a variety of thoughts and ideas may prove provocative and stimulating, and will probably guide curriculum scholars to take a positive look at the curriculum content and think about how to meet the challenges of developing sciences, technology, social, and demographic changes. The curriculum problems that have to be addressed today focus on some major themes such as integration of knowledge between disciplines, integration of skill acquisition and clinical application, promotion of critical thinking and problem-solving, encouragment of self-assessment, and preparation of students for life-long and self-directed learning. In a comprehensive review of the existing problems and challenges, Tedesco (1990) questions the curriculum content and methodology of teaching and concludes that "Dental education can and should serve as a laboratory for faculty and colleagues to test and evaluate hypotheses about learning, understanding, and acquisition of conceptual linkages".

Shubert (1986) indicates that to develop a conceptual framework for curricular studies it is imperative that curricularists study alternative criticisms and proposals carefully. In the case of dental education, and

over the last decade, there have been several criticisms of, and proposals to update the dental curriculum. Neidle (1986) queries the proper integration of basic sciences into clinical sciences to increase their validity and meaning to the student. Neidle (1990) also challenges the role of the dental schools in preparing the student to become the practitioner of the future, with ability to read and interpret research results and make judgments. She also charges the dental curriculum with the responsibility for continuing education, a role that is becoming increasingly important in the face of the fast technological advances. The shift towards the diagonal curriculum has addressed some problems, but that shift was a process of maintenance which responded to certain deficiencies. However, the need to meet the current challenges and to move into the future requires a paradigm shift that addresses the characteristics of today's graduate and that of the future (Tedesco, 1990). Certain changes in the epidemiology of dental disease, and the needs of today's modern practice demand conceptual changes in the purpose and content of the dental curriculum. Such conceptual differences will be discussed in some detail in the following sections.

The demographic changes.

Of the environmental changes, those of demography are the most profound. The over-60 year-old population is expected to grow in proportion from 11 percent to 17 percent in the next two decades, and possibly to 24 percent by the year 2050. The continuous expansion of the elderly cohort requires different treatments that are complicated by the fact that elderly people are more commonly administering medications to support their health. This changing demography requires careful

consideration by dentists in order fully to comprehend the implications of general health on dental treatment (Formicola, 1990). Although most surveys indicate that the prevalence of dental caries has been substantially reduced in the young, it is not totally eradicated. The treatment of dental caries and its sequelae will continue into the future, even in the youthful population. There is an increasing number of people attending dental offices requiring only preventive treatment. On the other hand, general awareness of an aging clientele has created the need for more complicated treatments. Such treatments require a great deal of integration of knowledge for the general practitioner (VanHassel, 1990). A conceptual shift towards the reality of treatment patterns and the preparation of students to think about such realities brings professional education closer to situated learning concepts.

Professional practice environment.

The change from the solo practice to the multipractice environment has created several changes in managing the dental practice. Managerial and financial skills are required in such a practice (Cohen, 1985 & Formicola, 1990). At the same time, trends towards greater regulations in infection control and utilization of an increasing number of new procedures are facts of everyday practice. Other contributing factors to the complexity of today's practice are mostly technological and economic. The introduction of computer technology and its applications in the areas of record keeping, as well as major changes in the orientations and flow of responsibility in the modern dental practice, have required several adustments. The increasing and more complex and expanding role of allied dental personnel in today's practice is an example of change that has to be

accommodated. Most of these factors can or should be incorporated in practice simulation units in dental schools. A grasp of the basic principles of good management may make the difference in the survival of the dental practice of the future.

At the University of Pennsylvania Dental School, a unique learning approach has been taken. A preceptor model was implemented in the school clinics, in which students practised with master clinicians, observing them and practising under their direct supervision. The Pennsylvania change was motivated by the observation that the excellent clinicians who are teaching the students have assumed primarily a supervisory role, and students may go through four years of dental school without ever directly witnessing their supervisors in practice. Learning by observing and then doing is the basis of the preceptor model (Cohen, 1985). This innovative change is actually a return to the principle of situated learning apprenticeship that prevailed prior to the organization of dental education.

The specialization wave.

As a result of the expansion of dental education in the 1960's, the evolution of a large number of graduate specialty programs has created a trend toward specialization as discussed earlier. The specialists, who are intended to provide treatments to patients at a high level of skill, have unintentionally created compartmentalization in the professional practice. This trend is also reflected in the dental school curricula over the past two decades, in that most of the teachers became specialists in limited fields such as Prosthodontics, Periodontics, Pedodontics, etc. Cohen (1985) indicates that the trend toward an over supply of specialists

is creating fragmentation of the professional services. Therefore, over the next decades, there is need to correct this trend and to educate the competent generalist. Educating the generalist requires a more coherent clinical curriculum that will overcome the present fragmentation.

The discussion above indicates that several aspects of today's and tomorrow's dental practice are quite different from yesterday's practice. It is difficult to argue against the fact that the schools that are responsible for educating the professionals are responsible for preparing them for the needs of their future practice. There is no doubt that the dental curriculum has undergone continuous adjustments over the years. However, at the present time, when a large number of changes are occurring simultaneously, new conceptions of dental education are required.

The Current Curriculum Changes

Most of the dental schools that have planned or implemented a change have started with a "strategic plan" (Cohen, 1985; O'Neil, 1990; Formicola, 1990; VanHassel, 1990)[9]. According to Keller (1983), strategic planning is centered on an analysis of the organization and of the external environment. Strategic planning incorporates six interdependent steps in its operational definition. First, the role of the institution in the environment must be assessed. Second, strategic planning must monitor the external environment effectively through data collection. Third, planning must identify the institution's strengths and advantages. Fourth,

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[9] "When confronted with a dilemma, an educator must be able to formulate imaginatively needs and problems that conceptualize the disrupted state of affairs. When faced with a problem, an educator should not be content with one ready-made solution" (Schubert, 1986).

strategic planning embodies orientation toward action. Fifth, strategic planning is participatory and requires debate. Finally, the ultimate goal is long-term viability and excellence of the institution. Therefore, strategic planning should represent the institution's viability as a whole rather than the interests of department or individuals. Strategic planning, if not undertaken with the understanding of its proper meaning, may become a useless exercise and an unrealistic wish list.

In a strategic planning context, the consideration of the changes and their conceptual grounds may be discussed under two areas: first, the changes in the institutional structure to accommodate curriculum philosophies; and second, the pedagogic changes in content and teaching methods to help make the institutional changes most effective and reflect the needs of the times.

Models of institutional changes.

One of the most extensive reforms that occurred in dental schools over the past decade is the model that has been introduced by the University of Pennsylvania, School of Dental Medicine. That school's step-by-step process of change has been documented in a book entitled *Educating the Dentist of the Future: The Pennsylvania Experience* (Cohen, Cormier & Cohen, 1985). The process began with a perception of a need for a change in dental education resulting from environmental changes. The change was initiated by a study to assess the external environment and to establish goals for preparing the graduates for future dental practice. These goals, which may be collectively called "fulfilling the needs of the competent generalist", were translated into adjustment to the internal environment to improve teaching effectiveness, and to

establish curricular changes. The most prominent change was the teaching of clinical skills in a setting that mirrored a practice setting. This included the preceptor model referred to earlier, in which a student observes, learns from, and practises under the guidance of master clinicians. Analyzing this model, one can observe two main characteristics: a return to the philosophy of learning by observing and doing (situated learning), and a student-centered curriculum philosophy that was planned around a central mission to fulfill the needs of the dentist of the future. The Pennsylvania model has been described as a well thought-out, properly documented and implemented strategic plan (Gerbert, 1986).

During the period between 1985 and 1990, the availability of financial support through the Pew Charitable Trusts had made it possible for a number of schools in the United States to study strategically their strengths and weaknesses, as well as the environmental and demographic factors that would influence the needs of their graduates. The details of those changes were reported as individual reports from the dental schools that were sponsored. Such details are beyond the scope of this research, but some prominent aspects that may focus some light on the nature and diversity of the trends are mentioned in the following section.

An example of a program change that was created within the new paradigm is reported by O'Neil (1990). The change is focused on the development of a postgraduate year for students who are moving towards careers as general dentists. This is similar to internship in medical schools. In addition, a program was developed to attend to issues related to career decisions and to preparing students for dental education before dental school. Another program has focused its strategic plan on a more

meaningful integration of basic and clinical sciences, making the clinical component of the program the main focus, with the basic sciences serving the purpose of enriching the clinical experience. In addition, they enhanced their faculty development programs to prepare the faculty to deal with educating the dentist of the future. A third program focused on the use of simulation in their preclinical program to prepare the students more effectively for their clinical education. These are only a few examples of the program changes that are currently occurring in dental schools to meet the present and future needs of the graduates. As the dental education system enters an era of fast changes and the uncertain future beyond, it must choose a path that will provide opportunity and sufficient flexibility to deal with acute changes (Gerbert, 1986). Gerbert (1986) indicates that while there may be proven techniques to help a school to achieve successful change, each school must attend to its individual needs. Based on these needs, each school must evaluate its assets, and chart a course that suits its unique structure, goals and style.

The previous discussion shows positive trends to undertake major strategic and structural changes to deal effectively with the common themes confronting dental education for the future. If only structural and content changes occur, the outcome is more likely to be only cosmetic. Another dimension of curricular change involves pedagogy or methods of teaching. The next section discusses the pedagogical and technological aspects of the curriculum challenge.

Pedagogical and technological changes.

In the period between the Gies Report (1926) and Neidle's publication of her challenging article "A Paradigm of Failure" (1986), a

large volume of reports and studies have challenged the dental curriculum. Most of these challenges were presented in the latter years.

Tedesco (1990) indicates that the numerous analyses and challenges focus on six major themes. Collectively, dental education is being asked to: 1) increase interdisciplinary integration of curriculum content; 2) improve integration for skill acquisition in clinical application; 3) strengthen the conceptual correlations between basic and clinical sciences; 4) promote critical thinking and clinical problem-solving; 5) encourage the self-assessment of personal performance; and 6) equip for lifelong, self-directed learning. With those positively stated themes in mind, Tedesco believes that Gies, in 1926, was emphasizing integration of knowledge. What the latter part of the 20th century dental education seems to be seeking is a broader conceptual integration of the dental disciplines and an appropriate use of this knowledge to solve clinical problems, in an environment that has exploded with new treatment modalities and techniques. Such integration of knowledge and knowledge transfer will not result from yet another curriculum reorganization, but rather from a new model of teaching - a new pedagogy that deals with learning in a way that will combine knowledge, understanding and practical application in a coherent package.

In addition to a new pedagogy, dental education must examine new technologies and their application to teaching. information technology in the form of computerized data banks may play a significant role in creating curricular databases, and intercommunication between dental schools (Eisner, 1990). A model for problem-based learning was established over twenty years ago in the medical school program at McMaster University in Hamilton, Ontario. Over the last few years,

several medical schools have adopted this pedagogy. According to Branda (1986), the main feature of problem-based learning is the use of health-care problems as a "stimulus for acquiring knowledge and understanding concepts". Problem-based learning does not depend on integrating previously acquired knowledge, but rather stimulates the acquisition of knowledge through a systematic process that starts with identifying and analyzing the problem, developing the hypothesis, identifying resources, collecting knowledge, applying knowledge to the problem, identification and summary of what was learned and, finally, testing the understanding of the knowledge by its application to another problem. Although problem-based learning is supported in educational psychology, and demonstrated success in medical education, major differences need to be introduced for application in dental education. Examples are the preclinical technique courses, and clinical courses in which actual performance is of prime importance and quality measures have to be applied to that performance. This presents a different setting for such philosophy and its application. Information technologies, such as simulation settings and electronic imagery, provide risk-free learning, and develop skills to test validity and reliability of information. Such technologies can contribute a great deal to problem-based learning. The American Association of Dental Schools (AADS) has established the "Committee on Information Technology". This body began in 1989 by establishing an electronic curriculum consortium. A basic premise of this developing consortium is that a co-ordinated effort across dental schools will lead to the joint development and authorizing of curriculum and methodology that can be shared between dental schools. Neidle (1990) warns against relying too much on technology. Neidle's criteria for the

dentist of the future include: high potential for humanitarian and ethical judgments; intelligence; intellectual curiousity; and a capability for understanding and being guided by ethics. Such characteristics may be best developed by following an existing role model, and being surrounded by a community of practitioners upholding such values.

The pedagogic concept that the reformed programme at the University of Pennsylvania has integrated as their preceptor programme is, in reality, an old concept revisited. The programme has implemented the concept of apprenticeship at three different levels. First, very early in the programme, the students are introduced to the clinical practice by actually working with their senior colleagues through chair-side assisting, creating an excellent opportunity for the beginner to observe, in an actual clinical situation, how procedures are performed, and how this may vary from what is being learned in the preclinical setting. Second, at the clinical performance level, the experienced clinician actually starts the clinical procedure and the student first observes and then assumes the responsibility for the procedure. Third, at the "residency programme" level, which is an additional year past traditional graduating practices, the student dentist assumes full responsibility for treatment, with experienced general clinicians and specialist clinicians available as resource personnel. During the residency period, the student dentist is expected to perform, in addition to clinical practice, certain topic reviews, and make presentations which share clinical experience with colleagues as a community.

This pedagogic model is an excellent model to illustrate the movement of a beginning member from the periphery of a community of practice, toward increasingly full participation. During this process, the

novice is helped and monitored by the experienced clinician, until during the residency, he or she assumes more responsibility and shares experiences with members of the community. Lave and Wenger (1991), in articulating the theory of situated learning as a process of apprenticeship, refer to the pattern of progressive learning by working within a community of practitioners as "legitimate peripheral participation". During this process, the newcomer to the community initially assumes a legitimate peripheral position and then progresses toward full participation. This pattern of peripheral participation is very well represented in the pedagogic model adopted at the University of Pennsylvania.

The horizontal curriculum that has resulted from the recommendations of the Gies Report (1926), was universally adopted for a period of over 50 years. This curriculum was 'content' oriented, based on knowledge and psychomotor skills and measures of knowledge transmission and has gradually, albeit unintentionally, separated knowledge from situated learning activity. The dilemma of the balance of contextualized knowledge, as a base for performance for students of a professional school, and the decontextualized situated learning activity in the clinical setting is far from being resolved. Most educators in dental schools who are dealing with this challenge, are addressing issues of separated knowledge by adjusting the internal environment to the changes in the external environment.

The different approaches that individual institutions are adopting, based on their strategic studies and demonstrated needs and capabilities, are an indication of the lack of a universal approach to dental education that existed seventy years ago. In an address to the American Association

for Dental Schools, DeVore (1994) draws the attention to the need for a curriculum that will meet the needs of the dentist of the future:

> The critical challenge is defining the dentist of the future and reforming our curricula so that our dental schools can graduate this new dentist. As always, predicting the future is fraught with a certain amount of uncertainty. Yet there are some predictions on which the dental education community has reached reasonable consensus.....Dental education will have to prepare future graduates to understand their role in relating oral health to general health, to pay more attention to the patient as a whole.....Educating such professionals will require essential curricular reforms.....Dental educators have begun to recognize the need to move from a curriculum that emphasizes memorization and procedures, to one that allows problem solving and comprehensive care.

The issues that DeVore is addressing are not much different from those raised by Cohen (1985) almost a decade earlier; and they are similar to the issues that stimulated the move to the diagonal curriculum design in the 1960's and 1970's (Formicola, 1991). This leads one to believe that the reforms in the dental curriculum that occurred over the past two decades or so may be inadequate in addressing the current issues related preparing students for the challenges of today's and future practice. Moreover, it appears that the challenges of today's practice are a moving target that continues to move ahead of resolutions to current issues. Neidle (1990) in her presentation entitled "On the Brink - Will Dental

Education Be Ready for the Future?" presents an optimistic view in her closing statement:

> In sum, the answer to the question posed is Yes. Here are the alternatives. It will be the same as today and will survive; it will have undergone some changes and will survive; it will have prepared itself brilliantly for the future and will survive.

Tedesco (1990), in discussing the need for curricular renovations and their relation to today's practitioners, raises an important question; if we have not found the answer, have we found the question?

As the issues regarding curricular reform unfold in discussion, questions are frequently raised about the desirable qualities of the clinical educator. The following section deals with the current thoughts on the clinical dental educator.

The Clinical Teacher in Dentistry

The clinical teacher, as characterized by Dinham and Stritter (1986), reveals how the current research defines good teaching. The instructor's attitude in being dynamic and enthusiastic stems from self-confidence and excitement about what is being taught, and from the enjoyment of teaching. Learners can identify with the instructor who is a good role model, and the role model can influence their behavior for years. For an instructor to be a good role model, she/he has to be a competent practitioner, capable of performing the procedures being learned, and willing to discuss with students what they know, what they believe, and how they practise. Beyond competence and ability to articulate it, the teacher also models professional standards in self-confidence, ability to

deal with different individuals, caring for patients, relationships with peers and subordinates, and ability to accept criticism.

Clinical teachers need not be universally perfect. Rather, they are most effective when they show students their reasoning and encourage discussion and questioning. They should reward students for analyzing and reflecting on the model they present. They should discuss their strengths and uncertainties, their values and how they cope with professional demands. Students should be exposed to a variety of role models to assist in the development of their sense of their own developing professional role. Although it is desirable that clinical teachers set goals for learning outcomes, teachers should be capable of asking constructive, non-threatening questions, and be willing to negotiate the outcomes. They should be capable of guiding the learners and motivating them towards self-directed learning, so that when apprenticeship ends, they have borne a significant measure of responsibility for setting and satisfying their own expectations, and at the end of their training have become functional members in a community of practitioners.

In describing the dental educators of the future, Christensen (1986) refers to the fast changes that are occurring in the practice of dentistry. He emphasizes the point that the educators and practitioners should share the same goals and orientations. He states that the days of the isolated, cloistered and mainly theoretical teacher have past. Teachers of clinical dentistry should be doers of clinical dentistry; they should be respected on the basis of their clinical competence. He believes that dental educators ought to have a few years of general practice experience prior to teaching students, and that they should be able to demonstrate proficiency themselves, in order to be good role models. Christensen also

emphasizes the teacher's involvement in research, especially with basic scientists. Involvement in research will familiarize the teacher with the technological advances that will need to be incorporated into clinical practice. He also sees a continuous dialogue between the educators and the practice community to be essential; each one should respond to the other. Interaction between the two communities fosters mutual respect and an understanding of problems that could cause friction otherwise. The practice community should be seeking renewal from educators, while at the same time act as the sensors that feedback to educators the practice needs and trends.

As an example of the current thoughts about the clinical teacher, Cohen (1985) described the selection criteria for the "preceptor" in the clinical model in Pennsylvania. He describes the preceptor as an experienced clinician with a strong background in general dentistry, who has a record of successful private practice management, with proven skills as a clinical educator. The role of the preceptor is to demonstrate whole procedures or guiding the preceptees by initiating the procedure and then guiding them through completing it. Also, there are times set aside for the preceptor to discuss cases of particular interest to the students, who have the opportunity, during such discussions, to interact with different clinical preceptors and be exposed to a rich variety of treatment modalities and choices. The main purpose of such interactions is for students to benefit from the preceptors' experiences.

Other writers have expressed thoughts and plans for the clinical teacher. Crawford (1990), describing the strategic plan at the University of Southern California to meet the future challenges, addressed faculty renewal from two different aspects: first, new faculty with desirable

clinical experience and records will be brought in; second, the existing faculty will participate in individualized development programs focused on improving scholarship and teaching. Crawford did not indicate how his plan intends to help the existing faculty relate to the realities of the practice community. O'Neil (1990) charges educators with the accountability for their graduates' ability to perform clinical dentistry and to respond to the dynamic changes in the health care system. He suggests that the administrative structure take a leadership role in motivating faculty to be responsive to the changing nature of the practice community needs. However, he does not offer particular plans regarding how the faculty can acquire such good attributes. Greene (1990) and Moreland (1990) have emphasized the need for professional development for educators but do not indicate the direction of such professional development efforts should take. It is only assumed that, since their writings are about curriculum trends, professional development will support curricular renovations.

Richie (1986) expresses the view that while professionals are expected to perform quality work, (and most of them do), incentives must be offered for good teaching practices and innovative work. He also adds that there are those who will do up-to-date innovative teaching regardless of the structure, and those who will never do it even with the best administrative efforts and incentives. Menges (1994) in his argument that research efforts are usually more visibly rewarded than teaching efforts, indicates that teaching will increase in value and stay at the center of our efforts if we make it more visible. He also suggests that teaching is undervalued because, in many situations, we are poorly prepared to do it. If we intend to keep students at the center of our work,

we must help faculty acquire teaching skills, diagnose and correct problems, and reward them when they are successful.

The pendulum continues to swing; sometimes the pivot around which the swinging movement occurs shifts, but the swinging motion continues. The early types of dental educator started as a preceptor: a reputable experienced clinician capable of performing procedures at a high level of skill, and guiding the preceptee toward full legitimate participation in the practising community. The first schools initially based their teachings around such preceptors. As time progressed, research and specialization became emphasized and were the most visible credentials for the clinical teacher. Now once again, the need for educating the general practitioner has brought back the competent general practitioner as the desirable preceptor and clinical teacher. The teaching skills of today's clinical educator are supported through professional development programs. The pendulum has taken a full swing, but the pivot has shifted; today's experienced clinician preceptor is also supported with a strong scientific base and prepared for the task with refined skills as a teacher.

The modern curriculum trends are student-centered, preparing the student to become the competent practitioner who will be able to deal with the changes and challenges of the practice environment. For the curricular changes to be successful, the support of the clinical teacher who understands the realities of practice and the process of teaching through practice is needed - a teacher who is able to guide the students on the road to becoming competent practitioners. Is the world of reality within a dental school fulfilling those dreams, or there is a dichotomy between the ideal and the reality? Are dental schools living in an atmosphere of harmony or contradictions? The next chapter will examine

the situation within one dental school, which will be the basis for this research project.

CHAPTER THREE

Clinical Teaching in a Dental School: The Research Site

The School and the Curriculum

The dental school in which the research took place was established in 1956, with the first graduation in 1962. The school was established during the era of the "horizontal curriculum", and was organized in terms of individual disciplines, each of which comprised its own department. The department "heads" were experienced clinicians or specialists in their disciplines, as was the case in most schools at that time. All Faculty members were either encouraged or requested to "upgrade" and pursue graduate specialty qualifications in their disciplines if they did not have such qualifications. The school underwent a major administrative restructuring that was implemented in 1974. In the restructuring, individual departments were clustered into four major departments, each made up of a combination of disciplines that have similarities in teaching practices or interdependence in fields and goals. The restructuring was to have resulted in a diagonal curriculum, in which students' clinical experience began earlier in the course of study. This internal rearrangement of the departments was intended to be consistent with modern curricular trends. However, over the years, the restructuring proved to be mostly cosmetic, in that little integration between clinical disciplines was achieved. Students' early experience in the clinics remained quite limited. Although the main goal of the restructuring was the integration of clinical disciplines, it was the basic sciences department that took the lead and implemented a major internal

restructuring in the early 1980's, thus moving towards a diagonal integrated curriculum.

It was not until 1987 that a "Strategic Planning Committee" was initiated to study the future needs and resources of the school. The committee presented its recommendations to a general faculty gathering in 1989, in preparation for an implementation phase to follow. One of the recommendations of the strategic plan was directed towards a major curriculum review to achieve discipline and clinical practice integration. At the time of this writing, the major curricular changes are still either in the planning or early implementation phase, with individual and sporadic innovations occurring in some areas. The clinical disciplines remain segregated.

In the last accreditation in 1993, the school received an initial "conditional accreditation" status. This status is granted if the program is generally acceptable, but certain areas are deficient and require attention before a "full accreditation" status is regained. The status of the curricular renovations was the area of criticism. The curriculum update has been an ongoing activity since 1989, and continues to be a high priority. So far, the progress toward that end has resulted in regaining the full accreditation status in the latter part of 1994.

The Students

Applicants to the dental school must have completed a minimum of two years at a faculty of science, with certain prescribed courses and course load. Candidates must complete a dental aptitude test consisting of comprehensive, cognitive and psychomotor tests. Each qualified applicant is interviewed by a panel of two faculty members and a current

dental student. The interview is structured and aimed towards exploring the candidates' ability to communicate, as well as their life experiences, and their ethical and moral values.

This school has a small class size of approximately 25 students per class. The students usually develop strong friendships, as a result of spending several hours together every day. Early in the program, each student becomes known on an individual basis by the faculty members, thereby facilitating role modeling and socialization into the profession. The students undertake a heavy workload that often extends into the evening hours and sometimes into the weekends. It is assumed that the students' professional aptitudes grow as they advance in their course of study, with a major transition occurring as they begin interacting with patients to provide treatment.

The Clinical Teachers

The dental school's clinic environment is a unique type of learning setting in that it combines three types of simultaneous activities: a) acquiring content knowledge, b) delivering services in the form of treatments to patients, and c) developing the interpersonal skills and professional values necessary to become members of a community of professionals. Therefore, it is desirable that the individuals who facilitate the learning in such a setting have a combination of characteristics, including a rich knowledge of the current state of scientific developments, proficiency as a practitioner, as well as role modeling and mentoring qualities and skills.

There are two distinct, but not separate, groups of clinical teachers: the full-time and the part-time academic staff. The full-time academic

staff are primarily members of the academic community with professional practice qualifications, and usually maintain involvement in professional practice. The part-time academic staff are primarly members of the professional practice community and may be either generalists or specialists. The latter group is viewed as enriching the practical experience of the students, therefore strengthening the link between the practice and the academic communities.

The academic planning as well as the classroom teaching of the program, are commonly carried out by the academic members. The practitioners, usually referred to as "part-time" faculty, have very limited participation in the classroom teaching components of the disciplines. The part-time faculty are always involved in one discipline only, although most of them are in general practice. They are selected and invited to participate by the discipline head. Therefore, the "part-time" clinical teacher is primarily responsible for guiding the students through the treatments that are provided to patients attending the clinic. On the other hand, the academic clinical teacher is responsible for the operation of the discipline's clinics, including creating and maintaining the guidelines for standards of competence. In addition, the academic staff are responsible for orienting the "part-time" teachers. This arrangement is consistent with the historical roots and traditions of apprenticeship and maintains the strong link between the "practice" and "academic" communities.

The Clinical Treatments

The clinical treatments are the main substance of clinical teaching. The clinic operated by the dental school provides both a community

service and valuable educational experiences for the students. The patients at the clinic are members of the general public who approach the dental school seeking treatments. Their motives for seeking treatments at the school are based on a combination of factors including: the knowledge that the students are supervised while performing the clinical procedures; the knowledge that they are supporting students, and a feeling that they are "helping them out"; and the fact that school's clinic fees are only a small percentage of the general practice fees. Patients are informed that the procedures will require longer time than in a practice office and usually consent to such a factor. They are under no obligation to undergo an entire treatment once commenced, and in fact may discontinue the treatment at any point. When it is in the patient's best interest, the student may negotiate with the patient to determine a suitable stage within the treatment at which to terminate treatment. Such action is usually witnessed by the clinical administrative faculty and staff as necessary.

The individuals seeking treatments undergo several levels of "screening" before they are "assigned" to students to provide the necessary treatments. The purpose of the screening is to determine the suitability of the treatments to be carried out by the students. This is done first by a general examination, followed by more specific examinations by individual disciplines. The result of this stage is a completed "treatment plan" that identifies each treatment procedure required in a comprehensive sequencing, together with a financial estimate. At this stage the individual affirms an "informed consent" to the treatment. Normally a reference to the time factor is made at this stage. The screening and treatment planning procedures are performed

under the supervision of clinical teachers and once the treatment plan is complete and affirmed, a student is assigned the responsibility for performing the treatments. The responsible student may delegate components of the treatment to other students. The student is responsible for making the time arrangements with his/her patients and informing them about the progress of treatment as well as their financial obligation. Any problems arising that may result in patient or student dissatisfaction with the progress, or the interruption of treatment, are attended to by the director of patient care, who is a dentist and a member of the academic faculty.

The Clinical Interactions

The clinical treatments performed by students are the main learning experiences to prepare them to become members in the community of practitioners. As the treatment procedures are being performed, the clinical teacher or "preceptor" discusses with the students their clinical experiences. The goal of the clinical interaction is to meet the needs of the patient, as well as to train the student.

The situation in the clinic seldom represents a pre-clinical "standardized" setting, but rather deviates from the standard in most cases. In the clinical situation, the contextual knowledge represents a concept of problem solving. While solving a problem, the student interacts with the preceptor, calling on the preceptor's experience to reach a reasonable solution for the problem. During this activity, verbal discourse between the student, the preceptor and the "patient" constitute an important component of the interactions and the learning experiences

(Fig. 3). The verbal discourse relates to all aspects of the activity, and represents expectations for the outcome of the treatment.

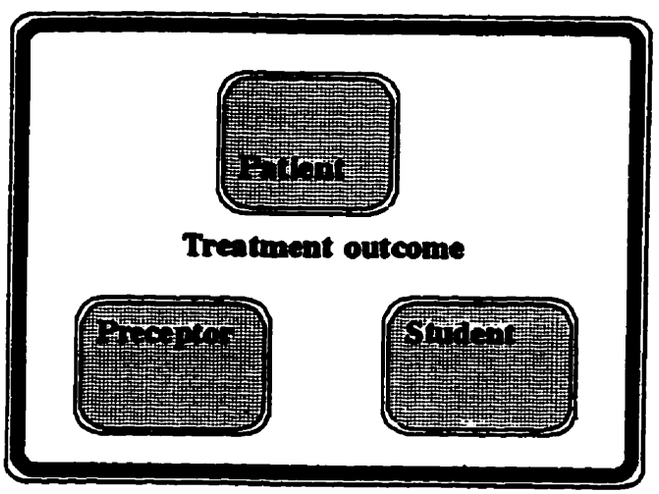

Figure 3: Clinical Interactions

Lave (1991) and Engstrom (1993), define the learning activities that occur under such circumstances as being more than the conventional notions of "learning in situ" or "learning by doing" which is the common understanding for the historical principle of apprenticeship. Rather, such a situation involves the whole human being, since apprenticeship can take many forms according to the nature of the learning situation. Thus learning occurs in situated ways, which varies according to the different circumstances of each setting. The activity is the practice in which learning is an aspect. Therefore "situated learning", as a theory, describes an overall activity, in which the human being is involved, and learning occurs as the involvement is continuing.

Organizational Features

The faculty roles in the dental schools are loosely coupled and characterized by differentiation. This means that academic positions are specialized and set apart by separate professional identities and varied task structures. The organization is informal and decentralized, but highly complex, because of the combination of goals related to teaching, research, and patient care. Different schools may vary in the emphasis they place on each component, and the role each member plays in the structure. Faculty generally perform more than one of the activities, and their opinions and needs can vary as to the appropriate balance among goals. Clinical faculty members typically spend about two-thirds of their time in instructional activities, with the balance of the time distributed among research, administration and service (Solomon, 1985). Faculty members normally have some involvement in all the activities. This complexity, in many instances, creates a combination of goals that makes the definition of specific goals difficult and subject to the opinions of different individuals and situations.

Student Issues

In such a complex clinical learning structure, where the student learning is the intended focus of all activities, there are certain issues that are encountered on a daily basis. One issue that always arises while students perform treatments is that certain treatment modalities are required by individual disciplines which, in some instances, may contradict the concept of total patient care. Another issue is that certain treatment modalities may compromise patients' priorities by providing

services that would primarily satisfy students' needs, rather than follow a proper sequence of treatment priorities.

A further issue that is far from being resolved concerns the evaluation of students' productivity in a proper qualitative and quantitative manner, using a valid and reliable system that can signal an accurate message about a student's aptitude and learning. A tension exists between evaluation which best serves a situated learning approach for professional training and growth, and evaluation which serves an administrative regulatory function for the institution or the profession. Such conflict in priorities may threaten and undermine the concept of meaningful participation and the advancement of participants towards the center of the learning activities and into the community of practitioners.

The teacher's role in the clinic in helping the students develop and refine skills by observation and participation, has been reduced over the years to mostly a supervisory role (Cohen, 1986). The clinical teacher, in a supervisory role, becomes a locus of authority such that in many situations the student may be more inclined to follow the "instructions" given by the teacher rather than negotiate a learning situation. This may curb the growth of the student's ability to make judgments and move centrally towards full participation as a member of the community of professionals.

Conceptual Issues

Teachers' authority is founded not only on their knowledge and experience, but also in their role as educators who evaluate the students' performance. This dual role is different in concept from the historical role in an apprenticeship setting, where learning was the primary goal.

The development of a student in a situated learning setting is controlled by administrative authority. The teacher's evaluation role may conflict with his or her role in student learning. The dynamics of this tension become complex when the "master clinician" represents two communities, the practice and the academic communities, with different roles and different experiences.

The attitude and understanding that clinical teachers have about their role is an essential factor in students' learning experience and constitutes the major research question of this study. Do they view the dental school's clinical environment as a laboratory for individual students to develop certain skills to enable them to complete requirements and pass examinations? Or, do they view the clinic as an apprenticeship program in which a group of future practitioners are introduced to the professional practice and progress towards becoming full members of the practice community?

The present research was designed to investigate two fundamental characteristics of clinical teachers, their attitudes and beliefs about their preceptor role in a situated learning environment, and the role model the teacher presents to the students. Two background factors that guided an exploration into these characteristics included the influence of the pedagogic changes and paradigm shifts that have occurred in dental education over the last two decades, and the changes in dental practice needs and their influence on the role of the teacher in the situated learning setting. The first two factors, attitude and role modeling, can be said to reflect the "art" of clinical teaching talents that are difficult to teach and learn and, above all, to measure. The second two factors, pedagogic changes and modern practice needs, should have significant

influence on the nature of clinical teaching. The interaction of these factors affects how the student is being prepared for membership into a community of practitioners.

The Purpose of the Study

The aim of the present research was to examine the clinical teachers' understanding of the teaching/learning process, and their understanding of their role as facilitators in a clinical setting. For this setting to be most effective, the teacher's role as a "master/experienced clinician" is essential. This study assesses the teachers' understanding of their role in a situated learning setting, and their understanding of the effectiveness of the interactions that occur between them and the students in creating a positive learning environment, involving the student as a whole person, to be socialized into the social-cultural aspects of the profession.

Therefore, the research questions constructed to guide this study were:

1. How do clinical teachers in a Faculty of Dentistry perceive their role in directing the students' learning in a practical application setting?
2. How do clinical teachers conduct themselves to help students understand the purposes and the uses of the knowledge they learn in an active applied environment?
3. How do clinical teachers view students as participants in learning activities that prepare them to become members in a community of practitioners?

These research questions are consistent with the situated learning theory. They address the basic characteristics of "master clinicians", who by conducting themselves as members of a professional community, direct students' learning and guide students' multifaceted growth into the profession.

CHAPTER FOUR

Research Design

The purpose of this study was to examine the Faculty of Dentistry's clinical teachers' understanding of the teaching/learning process, their role in directing the student learning in an active participatory environment, and their understanding of the students' growth towards the social-cultural aspects of the profession. To acquire the kind of data required to answer these research questions, it was determined that the most appropriate method would be to interview a sample of the clinical teachers. This sample should represent: 1) the variations that exist in the group regarding length of experience; 2) academic teachers who are considered full-time teachers; and practitioners who are considered part-time teachers, and 3) both genders. It was anticipated that by eliciting the beliefs and experiences of a diverse group of clinical teachers, a rich description of knowledge relevant to the research question could be generated. The research design chapter provides a brief rationale for the decisions made with respect to methodology, and a description of the data collection and analysis procedures.

Research Method Background

The research design and analysis followed methods described by Miles and Huberman (1984). Miles and Huberman contend that social phenomena exist in the objective world and that there are lawful and stable relationships to be found among them. Phenomena exist because people construe them in common, agreed upon ways, but are not necessarily aware of them. Based on this concept, Miles and Huberman

consider it important to evolve methods that relate the interpretation and explanation of phenomena to their possible causes.

Although the methods described in Miles and Huberman (1984) have been used, the underlying philosophy of inquiry in this research is integrated with the concepts of situated learning. Lave and Wenger (1991) described the situatedness of activity as the relational character of knowledge and learning. This perspective implies an emphasis on comprehensive understanding involving the whole person's development, rather than a learner receiving a defined body of knowledge. Furthermore, the learning which occurs during activity constitutes part of the students' growth towards professionalism. This concept is particularly well suited to the teaching and learning setting in dentistry in which the action of clinical teachers and students can be defined as participatory learning situations which constitute part of the students' learning and development towards professionalism.

Interview methodology.

Interviews are a common method for data collection in qualitative research, where participants' opinions and verbal communication constitute the body of data. Patton (1990) described three basic approaches to interviews:

1. the informal conversational interview
2. the question-guided interview
3. the standardized open-ended (questionnaire) interview

The informal conversational interview offers the most flexibility and natural flow of conversation, but it lacks any explicit purpose for information collection and makes data organization and analysis very

difficult. The question-guided interview involves outlining, before interviews begin, a set of issues that are to be explored with each respondent. The guiding questions may be taken in any particular order or wording, and rather than being a rigid protocol, they should serve as a checklist or guide during the interview to make sure that relevant topics are covered. Probing questions may be used freely to pursue lines of inquiry. The standardized open-ended question interview consists of a set of questions arranged with the intention of taking each respondent through the same sequence. Flexibility in probing is very limited in a standardized interview. It is used when it is important to minimize variation in questions posed to interviewees. This method may be particularly appropriate when a large number of interviewers are to conduct the interviews, as it avoids biases. The data are controlled and easy to analyze, but the process reduces flexibility and spontaneity, and limits the opportunity to further explore relevant thoughts and opinions. Given the purpose of this study, the guiding nature of the explicit research questions and the use of the investigator as the only interviewer, it became clear that the question-guided approach was the interview method best suited to obtaining data required to inform the research questions.

Sampling issues.

The selection of a sample has a profound effect on the quality of any research. This relationship has been clearly described in quantitative studies where the sampling method has a direct implication on the reliability, validity, replicability and generalizability of the study. In qualitative research, the selection of an adequate and appropriate sample is also critical. However, in qualitative research, the rules for selecting samples have only recently been discussed in depth (Morse, 1989). Morse

suggests that the researcher makes deductive assumptions about the characteristics that contribute to the variations within the group and that these characteristics are entered into a sampling frame. She warns that quantitative processes such as randomization and quota selection might deprive the sample of valuable input.

The types of samples suggested by Morse (1989) are: purposeful, nominated, volunteer, and total population. Total population sampling is used when all potential informants work or live in small unit groups. Total populations are often too large to be practical, and researchers must select a subset of the total population to participate in the study. One selection strategy is purposeful sampling. Purposeful sampling involves selecting participants according to the need of the study, by virtue of their broad general knowledge of the field, or because their experience is considered typical. Patton (1990) describes "maximum variation sampling" as a type of purposeful sampling. The purpose of this sampling type is to document diverse population variations, and to identify common patterns that cut across variations. In the case of nominated sampling, participants can assist in sample selection. The researcher elicits the assistance of an informant already in the study to assist with the selection of other participants. In a nominated sample the assumption is that the insiders know who is most knowledgeable, and can recommend the person with the most information and best suitable for interview. Another sampling strategy used when the potential informants are not known to the researchers or to each other is volunteer sampling. In volunteer sampling, the researcher must rely on the potential participants to identify themselves.

For the purpose of this study, purposeful sampling was the most appropriate since a full range of clinical teaching knowledge was sought.

A sampling frame was created to include informants that represent part-time and full-time teachers of different tenures, experience in teaching, various teaching expertise and gender. The investigator was well situated to identify potential informants based on his long-term association with these informants.

This sampling frame satisfies the purpose of maximum variation described by Patton (1990). Morse (1989) suggests that for the sample to meet the criteria of appropriateness and adequacy, the researcher must have control over the composition of the sample. She also suggests that researcher control is maintained when the researcher has a relationship with prospective informants, is aware of which member of the group has the knowledge required, and knows who would be willing to participate before inviting them to participate in the study. Since a full spectrum of clinical teaching experiences was desirable and the investigator is an insider in the group, the purposeful approach is appropriate for this study.

Sample size.

Patton (1990) indicates that there are no rules for sample size in qualitative inquiry, and that sample size depends on the purpose of the study, and on the credibility and usefulness of informants. Patton also discusses the trade-off between breadth and depth of the study. When generalization of the results or comparison of variations is expected, then the study will be seeking breadth and will require a large number of participants. If a study is intended to explore an open range of experiences, then the design will be to seek depth, and a small number of people studied in detail is more appropriate. Patton (1990) recommends that purposeful sampling designs specify minimum samples based on expected reasonable coverage of the phenomenon, given the purpose of the

study and stakeholder interests. Morse (1989) suggests that in qualitative studies, "informational adequacy" determines the sufficiency and quality of data obtained. She refers to "saturation" as a stage when the researcher is "not hearing anything new". This informational adequacy is judged by completeness of information, rather than by the number of cases.

Analysis method.

The culminating activities of qualitative inquiry are analysis, interpretation, and presentation of findings. Patton (1990) indicates that the challenge is to make sense of massive amounts of data, reduce the volume of information, and construct a framework for communicating the essence of what the data reveal. Miles and Huberman (1984) indicate that there are very few agreed-on rules for data analysis, in the sense of shared ground rules for drawing conclusions. Patton (1990), adds that this does not mean that there are no guidelines to assist in the analysis of data, but that guidelines and procedural suggestions are not rules: analysis should serve the purpose of the study.

Focus in analyzing the research data begins with the research questions generated at the very beginning of the inquiry. This allows the data analysis to focus on needed information, and enhances utility of the results (Patton, 1990). Analysis begins in the course of gathering data, when ideas about possible analysis will occur spontaneously. These ideas are part of the recorded field notes. Therefore, there are two sources for focusing and organizing the analysis: the research questions; and insights and interpretations that emerged during data collection. These sources were the basis for the framework for analyzing the content of the data obtained in this study.

Within this framework, data analysis is frequently conducted by content analysis. Content analysis is the process of analyzing the content of interviews and observations to identify, code and categorize the primary patterns in the data. The procedures followed in analyzing the content of the data collected in this study followed guidelines suggested by Miles and Huberman (1984), Patton (1990), and Lincoln and Guba (1985).

The Research Procedure

The specific research procedure followed in this investigation is based on the principles of qualitative research discussed above. First a research proposal describing the purpose of the proposed research, the literature relevant to concepts of dental education and situated learning, and a primary framework for the research methods, was submitted to the Department of Educational Administration and Foundations. Simultaneously, an application was made to the Ethics Committee on Human Research at the Faculty of Education. Upon approval of both bodies, entry to the research context was negotiated. Letters were sent to the Dean of the Faculty of Dentistry at the site of the research, and to the two Heads of the departments that are involved in clinical teaching, informing them about aspects of this project (Appendix A). The Dean of Dentistry referred the letter to the Chair of the Ethics Committee in Dentistry, who advised that additional ethics approval is required since the research was to be conducted at the Faculty of Dentistry. A submission was made and a second ethics approval was secured (Appendix B).

Sample selection.

Purposeful sampling is the principle followed in selecting the sample of clinical teachers to be interviewed in this study. The fact that

the researcher is acquainted with prospective participants was helpful in selecting good informants. An element of randomization was attempted. This was done by marking the names of the clinical teachers on the Faculty telephone list and selecting every third name. The randomization did not prove to be favourable, since it was necessary to adjust the selected name list to include a cross-section of lengths of tenure from the two clinical departments, and to include full-time and part-time teachers of both genders. Therefore, the selection resulted in a purposeful nominated sample of ten clinical teachers.

The selected participants were contacted by a letter indicating the intent of the research and requesting that they participate in the research by consenting to an interview (Appendix C). The teachers were then contacted verbally to clarify any questions they might have and were requested to send their consent if they wished to participate. All ten teachers consented. Given the purposeful sampling method employed in this study, it was anticipated that a sample size of ten should be adequate. If necessary, sample size could be increased. During data collection, a sense of "saturation" was developing from the seventh interview. Nevertheless, all ten interviews were completed to satisfy the variation included in the sample. The increase of sample size was not necessary.

Interviews.

Interviews were arranged at a time mutually convenient for the researcher and the participants. To avoid biased statements, the participants were not informed about the concept of situated learning or the specific research questions. They were informed that the purpose of the interview is to "explore their views about teaching". The question-

guided interviews were planned to be of one hour in duration, but actually ranged between forty and seventy minutes in length. The focus of the interview was on the teachers' reflections on their role in clinical practice situations. Guiding questions were designed to outline a framework for the interview. The guiding questions were discussed with each participant. Probing questions were designed, but not strictly adhered to, in order to allow flexibility in participants' responses, and to permit the investigator an opportunity to explore their experiences (Appendix D). The interviews commenced with a question to initiate a discussion about the teachers' interest in clinical teaching. During the course of the interview, the guiding and the probing questions served as a checklist to make sure that relevant topics were covered, but were not always posed in the same sequence. Repeat interviews were not necessary, since all interviewees had expressed their views clearly, and responded to probing questions adequately.

The interviews were audiotaped. The investigator also made notes during the interviews, which were used as field notes during the analysis of data.

Data preparation.

All audiotapes and transcriptions were identified by codes to protect the identity of the research participants and to maintain confidentiality. Secure storage of the tapes and transcripts was ensured by the investigator. All tapes were coded by the principal investigator, and he and the transcriber, who is not related to the research, were the only people who had access to the audiotapes. Participants were informed both in the letter inviting them to participate in the research and at the beginning of the interview, with respect to confidentiality and their right

to withdraw parts or all of their interview from the study. None of the participants indicated any concern about confidentiality, nor any wish to withdraw totally or partially from the study.

Interview excerpts in this thesis, as well as any future report or publication based on this study, will be sensitive to the matter of the participants' identity.

Each audiotaped interview was transcribed to prepare data file for that participant. To facilitate coding, the verbatim transcriptions were produced in short lines, and the lines were consecutively numbered for easy reference (Appendix E). Following the initial transcription, verbatim transcripts were reviewed by the investigator, who listened to the tapes and read the transcriptions simultaneously. During this process, any errors or missing words in the transcriptions were corrected, and additional field notes were made about the issues that were raised in each interview. During this process, categories of data began to emerge as a result of comparing the issues that appeared in each interview.

Data analysis.

Data analysis involved the coding and labeling of each transcript on the basis of the emerging categories, guided by the interview questions. Since this was a question-guided interview, there were common issues raised that could be grouped by topics based on the guide; but the relevant data were not found in similar places and did not follow any specific sequence across interviews. Issues and views raised by each informant were compared to each other and similar comments were grouped together. This constant comparative process (Lincoln and Guba, 1985) generated the properties, on which the definition of the categories as essential descriptors of similar comments were based. Because these

categories and sub-categories emerged from the data, they were not limited by the topics contained in question guide, and included some categories based on data generated by the respondents.

The next stage of data analysis involved integrating categories to develop "global categories" by grouping categories that were similar in theme or function. The resulting global categories had wider definitions and contained a number of related categories as sub-categories. A coding "grid" was then developed (Appendix F). The grid was an organization of the global categories, sub-categories, their definitions, corresponding labeling codes, and illustrative excerpts from the interviews. This structured coding grid was then applied to the coding of all data files. The final stage in the analysis involved reviewing the categories for overlap of content or relationships among categories. This process continued throughout the preparation of the results section.

At the end of the coding process, when "exhaustion of sources" was reached, and no new information was being identified, the interview notes and summary index for each file were reviewed to ensure that nothing in the body of data was overlooked and the process of data analysis was complete.

Summary of the Research Approach

The research methodology followed in this study was designed to elicit clinical teachers' views about their role in the situated learning activity in clinical dental education. Question-guided interviews were conducted to collect data from ten participants. This method offered flexibility in following the participants' views and was appropriate since a single investigator conducted all the interviews. A purposeful sampling technique was the method of choice in selecting the participants. This

method was identified to select good informants, who were known to the investigator. Ten clinical teachers in dentistry representing a cross-section of experiences were approached and, upon their acceptance, interviews were conducted which ranged between forty and seventy minutes in length. Audiotaped interviews were transcribed. Verbatim data analysis involved coding and labeling of the verbatim transcripts. In the data analysis phase, a constant comparison process was followed, in which emerging categories were grouped into global categories and related sub-categories A coding grid was then developed as an organizational structure for the categories. The coding grid included category definitions and illustrative examples from the interviews. The coding grid was applied to all data files. The categories were reviewed for overlap of content or relationship, and when the data were exhausted, the process was considered complete.

CHAPTER FIVE
Results

The results presented in this chapter emerge from the research questions which guided the present study:

1. How do clinical teachers in a Faculty of Dentistry perceive their role in directing the students' learning in a practical application setting?
2. How do clinical teachers conduct themselves to help students understand the purposes and the uses of the knowledge they learn in an active applied environment?
3. How do clinical teachers view students as participants in learning activities that prepare them to become members in a community of practitioners and to become socialized into the socio-cultural life of the profession?

Based on these questions, the data obtained from the interviews were analyzed to determine clinical teachers' beliefs about teaching roles and strategies and their views on different aspects of student growth into the profession. Content analysis of these data gave rise to 10 global categories which were organized to parallel the research questions. (Table 1).

Table I

Data, Categories and Definitions

Category	Definition	Code
Role Modelling (GLOBAL)	The clinical teacher acts as a professional role-model for the student; interacting with patients and students.	R:
Specific Categories		
Rapport with Patients	The clinical teacher demonstrates the importance of rapport with patients.	R:rap
Sets example of good practice pattern	The clinical teacher sets an example of good treatments provided to patient.	R:treat
Developing comfort and respect with students	A comfortable relationship between the teacher and the student is essential for a positive learning environment.	R:comf
Effective learning environment (GLOBAL)	The clinical teacher shows concern for student learning and for the quality of treatments provided by students	L:
Specific Categories		
Enthusiasm	The clinical teacher's enthusiasm is reflected on the students' learning.	L:ent
Effective student-teacher communication	Student-teacher communication is focused on providing good patient treatments.	L:comm
Clear and high expectations	The clinical teacher sets clear and high standards for treatment and learning.	L:exp

Category	Definition	Code
Teaching Style (GLOBAL)	Teachers describe their views on how they perform certain aspects of their teaching role.	T:
Specific Categories		
Individual attention and support	The teacher provides direct observation and help for students while performing a procedure, giving them support.	T:supp
Link classroom and clinical teaching	The teacher links what is taught in the classroom, to what is performed in the clinic.	T:link
Stimulates students' learning and thinking	The teacher uses strategies for working with individual students' learning needs.	T:learn
Avoid style of negative role-model	The teacher uses personal learning experiences to avoid negative instructor behaviours.	T:neg
Authority (GLOBAL)	The clinical teacher uses professional and administrative authority to guide and evaluate students.	A:
Specific Categories		
Power of expertise	The teacher derives authority as an expert in a clinical field.	A:exp
Handling conflict and giving directions	The teacher handles confrontations with students and gives direction.	A:conf
Evaluation	The evaluation process can contribute to or conflict with learning.	A:eval

Category	Definition	Code
Requirements	The teacher views clinical requirements as support for learning or a compromise for patient care.	A:req
Dealing with weak students (GLOBAL)	The teacher comments on the weak students' need for guidance, for more time, and the consequences of these needs.	W:
Specific Categories		
Correction and guidance	The teacher attempts to help the weak student to become interested in the learning process.	W:corr
Time for student learning	The teacher is discontented with the effort required to help the weak student.	W:time
Dealing with incompetence	The weak student is made aware of the consequences of incompetence.	W:inc
Ethical and professional growth (GLOBAL)	Developing professionalism includes developing concepts of service and values.	E:
Specific Categories		
Developing Professional ethics	Professional growth is a process of internalizing professional values.	E:dev
Values and economic benefits	Students may develop negative ethical values related to economic benefits.	E:val
Developing self-confidence and communication skills (GLOBAL)	The teacher reinforces and supports the professional development of students to enhance self-confidence and skills in addressing patient needs	C:

Category	Definition	Code
Specific Categories		
Supporting students' development	The teacher gauges the students' ability and helps them as needed.	C:dev
Stages in development and attitude	The students' attitudes change as they are developing.	C:stage
	The student develops the skill to address people's needs to help provide good treatment.	C:needs
Developing a concept of a community (GLOBAL)	The students are a group of peers, developing moral support and learning collectively, as they grow towards the professional community	CC:
Specific Categories		
The class as a community of peers	The students, as a group, develop a sense of friendship and offer one another support.	CC:peer
Collective learning	Students learn together to develop a sense of dealing with success and failure.	CC:coll
Teachers' views on different aspects of teaching (GLOBAL)	Teachers indicate aspects of their interest in becoming teachers, their views about weaknesses and responsibilities towards the profession.	TA:
Specific Categories		
Developing interest in teaching	Teachers indicate influencing factors in making a decision to become clinical teachers	TA:infl

Category	Definition	Code
Awareness of weaknesses	The clinical teachers express opinions about their weaknesses and those of their colleagues.	TA:wkns
Peer support	The clinical teachers express opinions on peer support among colleagues.	TA:peer
How do students see us	The clinical teachers express views on how their role is seen by students.	TA:us
Professional Gatekeeper	The teachers' role is to protect the public from incompetent practitioners.	TA:gate
Teacher and the administration (GLOBAL)	The teachers describe their roles as administrators and their relationships to the faculty administration.	AD:
Specific categories		
Protecting yourself	Teachers' activities may be dictated by self- protection.	AD:prof
Recognition of good teaching	Teachers' views on the recognition of good teaching.	AD:recog
Reflection on curriculum changes	Teachers' views on curriculum changes and their effect on student learning.	AD:curr

These global categories were divided into specific categories to organize the grouping of data, and each specific category was operationally defined and assigned a code. These specific categories were interspersed throughout the entire body of data and consequently, a distinct boundary between each research question did not exist. While the broader research questions were effective in guiding the collection of data, the categories of data which emerged provided a richer framework for describing the results. The results are therefore presented according

to the global categories. Within each global category, related specific categories are discussed, presenting the opinions of teachers interviewed, supported by excerpts from the interviews representing the views expressed.

Role Modelling

In the clinical setting, clinical teachers[10] act as a professional role model for the students. Interviewees discussed the importance of role modelling with respect to developing rapport with patients, demonstrating good practice, and developing a comfortable relationship with students.

Rapport with patients.

As they interact with patients receiving treatment by students, clinical teachers provide an example for the student of developing rapport with patients. In getting to know patients and relating to them, clinical teachers emphasize rapport as being an important component in providing a good standard of treatment to the patient:

> See, again I go back to that role model and the technique ... obviously there are certain standards that are set, and we try to show the students how to perform certain procedures ... the other part is that personal communication and rapport with patients and that is part of ethics as well ... thinking about ethical practice ... the quality of patient care should also include getting to know them better and

[10] Although the text is referring to the interviewees as clinical teachers, the clinical teachers are referred to as instructors in the excerpts from the interviews. This is a more common term in daily use at the Faculty of Dentistry.

> relate to them ... I hope that most of the time I am able to demonstrate good rapport with patients ... (FDSP, 684-712).

The importance of understanding patients' personalities was also expressed. Clinical teachers felt this was an important aspect of role modelling, since the students, during their present experience as well as in their future professional life, will have to deal with difficult personalities:

> It is obviously a good experience for the student to get a variety of different patients, because as you know, there is a multitude of different personalities that you have to deal with ... it can be a little more difficult to manage with the patients and how to manage someone who is difficult and how to calm them down if that is what they need ... I think that serves as a role model for the student ... (PDRP, 219-231).

Rapport with patients is therefore expressed as a component of a good ethical practice and can be modelled through the teachers' professional behaviour to help the student acquire the necessary skills for developing rapport.

Setting examples of good practice patterns.

Setting an example of good practice patterns is expressed as another aspect of role modelling which starts with the quality of the teacher who is invited to participate in teaching:

> Well, we like to think it is a role model, we try desperately to get people in as part-time instructors .. people that we feel that are ethical people, ... have been in practice for a long time, ... that you know the quality of their dentistry is very very good ... we try to inject that type of individual into the clinic ... from the point of view of practicality ... I think that somebody that works in the trenches in the morning and come and teaches here in the afternoon ... that will instruct clinically the proper and straight forward and simple way of successful treatment. (FDRT, 417-438).

The matter of the practicality of treatments is also expressed as the teacher being able to model the treatment to meet the patient's needs and not compromise the results:

> In addition to that, they have to know how to do the technical aspect well, ... but there is a limitation to where that would be applicable, ... like I would not suggest to the student to compromise ... not everybody can afford to have the best dentistry, but everybody should be able to have something practical done that's going to last for a long time. (PDRA, 159-171).

Similar comments on the importance of the teacher being a good practitioner who displays command of the techniques that are being

taught were also expressed in other interviews. (FDRP, 38-66; PDRP, 191-202, 399-418).

Developing comfort and respect with students.

Interviewees reported that a comfortable relationship between the teacher and the student is essential for a positive role modelling environment. When such a relationship is established, the student will find it easier to approach the teacher, ask for advice, and request help when necessary. A comfortable relationship was also characterized as being respectful. Comfort and respect together are thought by the teachers to be a desirable atmosphere for a healthy learning environment, and one that will encourage the students to follow the teachers' pattern in practice:

> ... if it's a good relationship I think the student can learn tremendous amount, because if they feel comfortable, I suppose ... if there is, you know, a great deal of comfort ... I am not saying that disrespectful comfort ... but just feeling comfortable, they will be able to ask you for help, ask you for guidance, watch how you do certain things if they really respect you. I think they will try to do things the way you do it because they'll figure that's a good way to do things. (FDSA, 98-114).

Similar opinions were expressed by other teachers describing such positive feeling as "trust" (FDSH, 148-170), or the student and the teacher "being faithful to each other" to a point that reduces the need for too many rules (FDRP, 821-830).

A negative view of the relationship between teachers and students was also expressed in that students may feel uncomfortable if the teacher is too close to them:

> ... you have to distance yourself from the students, not only for their sake because they may feel that you are emotionally too close to them and they feel uncomfortable with that ... also will be that negative feeling will also start to rain down .... (FDST, 218-224).

Teachers also described negative experiences with comfort and respect that occurred during ~~their own~~ student days:

> ... I would go back to days when I was a student, I remember a student a year ahead of me ... he was a good operator and he knew very well what he was doing ... and there was an instructor who had a fairly big head and thought he was maybe a little more important than he actually was ... and they had a set-to-do in the clinic over not necessarily anything constructive; he was trying to put (...) through the hoops ... and they had a big to-do over this ... (PDRA, 585-601).

Negative experiences were characterized as a reaction to a personal experience in comfort and respect between a clinical teacher and a student that has either resulted in the development of a negative attitude

as in the case of FDST or left a long lasting memory as in the anecdotal incident about a fellow student reported by PDRA. These experiences appeared to influence their own teaching practice. Six of the clinical teachers expressed, based on principle, positive views relating to the positive effect of an atmosphere of comfort and respect between the student and the clinical teachers on the learning environment.

In summary, role modelling was expressed in relation to communication with patients, providing treatment to patients, and creating an atmosphere of comfort and respect between the student and the teacher. There was a general expression of the positive effect of role modelling on the students' opportunities to learn from the clinical setting in the presence of a professional role model.

Effective Learning Environment

With respect to the creation of a learning environment, clinical teachers expressed concern for, and interest in the students' enthusiasm for learning. Maintaining proper communication between the student and the teacher were considered essential. In addition, the teachers' expectation for high standards of patient treatment was reported as an aspect of clinical teaching to be created and monitored by teachers as a component of their role in directing effective students' learning environment.

Enthusiasm.

Enthusiasm is expressed as a characteristic shared between the student and the teacher, creating a favourable learning environment that

stays with the student, and becomes the foundation for a life-long learning:

> ... I feel that the best thing I can offer (to the students) is enthusiasm for knowledge and life-long learning, and if I can instill that in them, I think I have probably done the best I can do ... enthusiasm being happy to be there ... happy to engage in the struggle ... and the struggle is shared in the joy of success and the joy of failure ... you don't learn if you don't fail ... no matter who the student is, if they can show me the spark of enthusiasm ... they are going to come out the other side a changed person and I think that's the best thing I could have offered. (FDST, 51-91).

Another expression of enthusiasm offered by a clinical teacher is the joy of learning, " ... the most effective clinical teacher is a person who has such joy in dentistry ... and love for the students that they infect the students with such joy ..." (FDRP, 1037-1045). Enthusiasm was also expressed as a characteristic of young people that reflects on the teacher and gives the teacher a "lift" and creates a positive atmosphere (PDRA, 287-295). Enthusiasm, therefore, is a positive characteristic that creates a positive learning environment which is shared by both the teacher and the student.

Effective student-teacher communication.

Student-teacher communication was expressed as communicating with students regarding treatments, either during patient treatment or outside class time, to monitor such treatments; or, on a personal level, to

show personal interest in the student:

> ... everyday I am very happy, ... I am disappointed ... and everything in between and it gets back to the communication between me and the student ... but as you maintain an emotionally cool relationship and you deal with the nuts and bolts of communication, you go (to the student) saying: you know what you want to do today? ... your response is okay .. make sure that such and such is okay ... I like your idea ... make sure you look for these things ... (FDST, 634-665).

Some clinical teachers offered students an opportunity to communicate with them outside active treatment time to provide continuity: " ... our group makes a point of being around at the lunch hour in the laboratory so that students can come and see us ... " (FDRP, 561-566). Effective communication was particularly important when there was an expression of different opinions about treatments:

> ... I think it is great when somebody has a difference of opinion ... if they have some way of backing up what they think ... I enjoy it ... I don't cut anybody down because they have a difference of opinion ... (PDRA, 659-664).

Interacting with the student on a personal level was also expressed as a factor that strengthens the teacher-student relationship:

> ... I think we can interact in an informal way, ... where we find out something about their personality, their boyfriend in Thunder Bay, their mom's house or whatever ... and draw out from them the sense

that they are bigger people ... (FDRP, 667-674).

The same interviewee reported an experience with negative communication which indicated how an isolated incident might leave a permanent effect on the student-teacher relationship and consequently on learning opportunities:

> ... I recall in the second year course having a student present what he thought was a very creative idea. I think, in fact, it was most inappropriate ... wasn't time to expand with new ideas ... and the evil is that I really embarrassed him publicly in front of the class ... I later that day caught him in the hallway and made an apology ... I don't think that person has ever forgiven me for that ... and I have denied myself the opportunity to mould him in a positive way ... I think by putting a distance between (us) that completely eliminates our ability to have a meaningful positive influence ... (FDRP, 252-283).

The clinical teachers, through communication with students, show examples of monitoring treatment, either during delivery of the treatment or outside classes. A positive view about dealing with difference in opinion between the teacher and the student was presented. One teacher reported a negative experience in dealing with a conflict situation that had a lasting destructive effect.

Clear and high expectations.

The expectations of these clinical teachers were characterized by

high standards of treatment which, in their views, maximized opportunities for learning. These expectations went beyond accomplishing the basic treatments required to reflect the value of professional excellence:

> ... I think the students are geared to depend upon primarily how quickly they can accomplish clinical procedures not necessarily how they can best treat patients ... students tend to migrate whereby he can accomplish things with most expediency rather than the best ... I think that if adequate procedures are carried out recognizing that this is an educational institution, where perfection on a high standard is professional ... then clinical experience is well done ... and patients' best interest is served ... I try to educate students rather than train students in a very technical way ... we try to educate them in a broader based application of clinical skills ... (FDRA, 71-141).

The comments of FDRA are representative of a clear concern that students should achieve a high standard of clinical skill rather than perform procedures expediently and only at a technical level.

In summary, these clinical teachers' effectiveness in developing the students' learning environment began with fostering of a good environment for teaching, characterized by enthusiasm and joy of learning to become a professional. A second aspect of the learning environment that was fostered by these teachers was the student-teacher communication, whether in the clinic or outside the clinic. Effective communication was reported to be a favourable means in helping students learn better from

their clinical procedures. Finally, expecting the students to perform at a high standard provided a basic goal for properly founded clinical teaching. These views are further elaborated in the interviewees comments about teaching style.

Teaching Style

In this global category, the teachers gave examples of directing student learning through their individual teaching styles, expressing their views on how they, as individuals, facilitate students' learning opportunities.

Individual attention and support.

A concept of one-on-one teaching was expressed as offering the students attention as individuals. This maximizes their learning opportunity, especially if they needed more help or are treating a difficult case:

> ... let us just say we have a ratio of six students for one instructor, that is probably in most cases adequate, in terms of time, ... I really mean time for clinical experience and feedback ... but there is time when I need to be sitting with the student in the clinic at the chair ... some of the most rewarding times for me are the ones where I sat down with the student ... and so you're just working with one, you are with them and watching ... almost riding them but not in a negative way ... show and do ... maybe for the struggling student or the unique case ... (FDSP, 69-84).

Offering the students support on individual basis was characterized as encouragement, especially with beginning students:

> ... I think that is important as the instructor watches a student, particularly when they are first starting out to give encouragement that they may be looking for ... I think all those positive influences help build them ... if they are doing the right thing, let them know ... (PDRP, 73-80).

It was also expressed that the presence of the teachers in the clinic and their interest in the students' performance is regarded as support for the students:

> ... you have to be interested in what is going on, ... I think you have to be there not just to take responsibility, ... to make sure that both the student and the patient have a good experience ... you have to be the person that's going to be there to cope with whatever happens ... sort of like looking after a household... (FDSH, 721-754).

Offering to support students and giving them individual feedback was expressed in other interviews: (FDRT, 589-603; PDRA, 415-428). Similarly, it was reported that good students need a "pat on the back" (FDRT, 765-770) or "with a little encouragement, they know exactly what to do well". (PDRA, 384-385).

The importance of such individual attention and support for the student while performing clinical procedures was supported by seven clinical teachers. This can be viewed as a strong reflection of the teachers' understanding of their role in the clinic and the value of offering

individualized support to students during clinical learning.

Link classroom and clinical teaching.

The clinical teachers who are involved in both classroom and clinical teaching, expressed their views about both aspects of teaching: the principles and the techniques that are taught in the class, and the application of these principles in patient treatment in the clinic.

> ... I think they are very closely intertwined, I think that one has to share didactic information relative to the practical, I've bounced around in my career thinking that one needs the knowledge before the skill, and vice versa ... I think some blend of actual use and didactic understanding is very valuable ... students be a part of the things about which they are learning ... there is a tight interplay between the two ... (FDRP, 67-86).

Although interviewees emphasized the importance of linking didactic and clinical instruction, they also reported that each aspect of teaching has its own challenge: " ... I think that the preparation in didactic teaching is much more of a challenge ... but you have the security of knowing exactly how prepared you are ... " (FDSH, 29-33).

The link between classroom teaching and clinical teaching was expressed in two other interviews (FDRA, 130-135; FDRT, 28-41) where there was indication of the importance of both aspects of teaching. Four teachers expressed that they enjoyed the clinical teaching more than the classroom teaching. (FDSP, FDRP, FDST, and FDRT).

Stimulate students' learning and thinking.

Strategies for stimulating learning and thinking through teaching style was expressed by the teachers as their readiness to help students deal with clinical situations as they arise, develop an inquiring mind, and complete the treatment at hand. FDST draws an analogy between research and helping the student to deal with a clinical situation:

> ... (the clinical teacher should possess) humility and an inquiring mind, realizing that the clinic is (as) a research environment, ... you don't have all the answers, ... you do your best with an inquiring mind ... this is why the profession is so interesting ... and you do your best ... (706-721).

A different strategy was expressed by PDRP where a student is given some guidance and is, at the same time, encouraged to think of a problem at hand:

> ... I like to be able to tell them what the problem is and let them try and correct it ... I like to think and try to balance out the problem ... I like them to be able to correct (the problem) when they can ... when I feel that the patient may have a problem, and when it is absolutely necessary, ... I'll intercept ... (379-404).

Another teaching strategy presented was the use of caution in the encouragement of student practice. The clinical teacher questions the students first about their ability and knowledge of a certain procedure, then offers the support and encouragement:

> ... when you have a feeling that they know where they should be ... then with a little encouragement you know exactly what they should be doing ... well let's do it ... there is no point in saying get in there unless you find out whether they know what they want to be doing ... I think it is a good idea to find out first ... ask them first if they have done one of those before ... and when you have reassured them, get on with it. (PDRA, 381-400).

Poor teaching style was described by a teacher who cited an experience during the teacher's student days. This poor style is being consciously avoided by the clinical teacher:

> ... when you had a difficult (...) case you were hoping you don't get Dr. (...), because there was no point he'd just tell you ... well you know, keep trying ... keep trying and in the end it was really no help ... so I think you don't get too much out of instructors that are that way ... if they are there to be helping the student, we should be trying to help ... I am sure in the back of my mind ... I wouldn't want to duplicate that situation myself and not being there for them (the students) ... it certainly wasn't a role model to aim for ... (PDRP, 162-187).

Although this experience occurred in the teachers' student days, it left a memory that seemed to be difficult to erase and influenced the teacher's approach to teaching. Opportunities for the students to "question things ... there has to be a reason to ask questions ... " is seen by (FDSH, 598-600) as an effective and "legitimate" way of learning. Other clinical teachers expressed different strategies in stimulating students' learning and thinking. Five teachers provided different approaches, including stimulating the thinking process of the students or questioning their knowledge, in a cautious approach, to explore the students' ability to perform the procedure at hand.

In summary, the different teaching styles presented showed a high level of consistency in helping the student by attention and support, by linking the classroom teaching to the clinical experience of the students, and by stimulating the students' learning and thinking process. The negative cases experienced in the clinical teachers' own learning were characterized as behaviours that should be avoided.

Authority

The global category of authority deals with clinical teachers' perceptions of their authority as people who are experts in their fields, give directions to students, handle conflict and disagreement with students and evaluate students' work. In some cases faculty members who act as course directors also bear the authority to ensure that students are meeting certain required treatments.

Power of expertise.

FDRP expressed a view of the power of expertise which reflected a philosophy of expertise characterized by authoring; insofar as authoring connotes the possession of something to be shared with others:

> ... I think that authority in the richest sense of the word is probably a wonderful thing, ... I author something... I bring the thing forward, and share by authoring, ... I get it down somewhere so others can have, and so the sense of authority exists because I am good as a (...) is possibly the best authority ... (344-354).

Power of expertise was also expressed as possessing good clinical skills, but in this case the view presented was that the expertise is available, but it is the student who has to acknowledge it and seek such expertise:

> ... I've got good clinical skills I think. I am pretty confident in what I do, I think I have got good judgement, I don't go and flaunt those, ... if they (the students) wish to see them, I am not going to flaunt them, that's my role and that's my character, ... I am not going to say: look how good I am, that (...) ... because people don't need to be told, ... people if they want to recognize excellence ... and if they don't want to, ... if a student doesn't like it ... I'm sorry. (FDRA, 734-754).

These two excerpts demonstrate that there is an agreement that the clinical teacher should possess expertise, but whether it is the teacher's role to bring this expertise forward, or the students' role to seek it out and benefit from it, is a point of difference.

Handling conflict and giving directions.

In a closely supervised clinical setting, conflict can arise between a clinical teacher and a student. Descriptions of such confrontations can be interpreted as representing styles in how the authority of the clinical teacher is practised in conflict situations:

> ... if I find hostilities like that, ... and this happened not too long ago, I have to move back, because I find myself wearing myself thin ... so you do the best you can for each individual, realizing that you're never going to succeed (with such individuals) ... and sometimes the best that you can, for some individuals, is far below what you like" (FDST, 227-241).

While FDST felt that avoiding confrontation is his style in handling conflicts, even if this has sacrificed a learning situation, FDRA presented a different style that emphasized student compliance, and would not compromise a learning situation:

> ... students don't like to be asked questions, I say that is crap, because you've got to find out what a student really knows, or why did he do this or why did he do that, ... you've got to do it nicely in front of a patient ... some of them you have to be careful with your choice of words, ... you have got to be sensitive to that patient but there is no reason why you can't grill a student, you've got to find out where they are coming from .. is it because they don't have the technical skill or because they don't have didactic knowledge ... because if they don't know you have to explain to them ... authority to

me means tell them what to do and expect it to be done, and if not (...) will hit the fan and they get a failing grade ... " (FDRA, 826-856).

The clinical teachers may handle confrontations in different ways, which display different attitudes in exercising authority, but such occurrences are not frequent. The aspect of authority that is exercised on a continuous basis is evaluation.

Evaluation.

Evaluation of students' work is performed on a regular basis in the clinic for each clinical procedure done by a student. Clinical teachers voiced the opinion that evaluation enhances teaching and allows students to avoid mistakes and improve quality. As expressed by PDRP:

> ... well you can't always have a four (top grade) ... as long as you understand why it didn't work out well, you really should just try to do better next time, if it's upsetting, you need to cope with it too ... I like to think that it makes it easier to accept if they've got an explanation for it, ... and I mean if they can understand why they got a low grade, they can accept it more easily ... and think back and say: well yeah I had this, that's true, I'll have to make sure that doesn't happen next time. (341-365).

FDSH presents an opinion that supports the previous concept and values the qualitative feedback aspect of the grade given. He suggests that the student should be interested in more than just getting a mark:

> ... I am very interested in what the student's perception is of how they are doing, ... especially if the person is interested in more than just getting a mark for the time they have put in the clinic, ... you're able to have some discussion to talk about maybe things that you have seen and they didn't see ... but it's attention they need ... because the numbers are very cold ... it's sort of black and white feedback. (197-210).

The process of evaluation is intended to support the students' learning, "evaluating to help and not to judge, ... evaluation is to make them better creatures, ... to help them read the standards of excellence" (FDRP, 914-937). A different view of evaluation is presented by FDST who reported that evaluation may create competitiveness and may result in students not sharing their educational experience. Furthermore, FDST stated that, if the student is not performing at a satisfactory level, the teacher should share the responsibility:

> ... I find the grading quite a demeaning process, either the individual has done the job adequately or done it very well or you share the blame, and you rectify the situation, I am much more in favour of a pass/fail ... I think of competitiveness, and the lack of sharing the educational experience goes hand-in-hand with competitiveness ... (355-365).

FDSA also supports the concept that evaluation should be limited to "clinically acceptable/clinically unacceptable, pass/fail" (534-535), so the student may concentrate more on professional learning "making them ethical, wonderful people" (540).

Evaluation, as described by these clinical teachers, is primarily intended to support learning, and the students' understanding of the reasoning for the grade given is the centre of this aspect of clinical teaching. The teachers who supported the concept of a pass/fail grade did not underestimate the value of evaluation, but indicated that the learning that results from evaluation feedback is more important than the grade issued to the student.

Requirements.

The clinical requirements that a student has to perform to qualify for course completion are seen by some clinical teachers as necessary to ensure that the student has developed adequate clinical competence:

> (setting requirements) ... it goes a little broader and a little deeper than that ... not just by the mere fact of setting numbers, I think it goes to the fact that it goes to the standard of care ... and the conformity to a given procedure or a set of procedures that will accomplish a viable result ... what I am getting at is in a discipline-oriented programme of instruction can follow that ... somebody responsible establishes what the procedures will be for carrying out those various activities ... I do not remember that we solely said what the numbers will be ... we have always said we need a minimum of procedures ... over the years a minimum becomes a maximum ... our

minimum is giving a student enough so they can grow ... the key here is discipline maintained standard (FDRA, 390-422).

A different view showed concern that patients may be compromised if the students are too concerned about satisfying certain requirements:

I think they (the students) are requirement driven, it's really difficult to put a finger on that because when you look back at your own school days the requirements were there and you certainly had an eye on the requirements but it always seemed that the two (requirements and patient treatment) went hand-in-hand .. the patient requirements (treatments) were all taken care of ... there was no question about treatment being incomplete ... everything has to be in tip top shape ... so total patient care was there but it seemed that a person had one eye on the requirements, and that is the big eye, and one eye on the patient care ... I think it is healthy when even though concerned about requirements you were still required to look after the entire needs of that patient. (PDRA, 800-824).

In these two examples of views about the treatment requirements, the authority of setting course requirements lies in the hands of course directors and is viewed as maintenance of the standards of learning as expressed by FDRA or may represent the opinion of a practitioner who is concerned about the patients' welfare and treatments as in the second view expressed by PDRA.

In summary, authority of clinical teachers is characterized as being

founded in their expertise. A primary responsibility of the clinical teacher is to bring that expertise to help the students either by offering advice directly or acting as a resource, should the students seek their expertise. The clinical teachers' views on their authority in handling conflict with students was presented from two perspectives: the teacher may compromise learning in favour of minimizing conflict or resort to authority to make the student comply in favour of the student's learning and avoid compromise to patient's treatment. Evaluation was viewed as a means to offer the students an opportunity to learn from mistakes. Conversely, it was reported that teaching and evaluation should be separate issues as in a pass/fail system. Setting clinical requirements is intended to ensure that the students achieve a certain level of competence; but concern was shown that the patient treatment may be compromised if the students are too concerned about satisfying clinical requirements.

Dealing with the Weak Student

Students who experience difficulty in maintaining a good standard of performance, and constantly struggle throughout their program of study, constitute a particular concern for clinical teachers. From a professional perspective, concerns were expressed regarding the professional competence of these students. From a teaching perspective, the concern was the additional teaching efforts that they require to bring them to an acceptable standard of performance.

Correction and guidance.

The clinical teachers interviewed reported that they attempt to help the weak students to improve their quality of performance and to demonstrate interest in the activities that they are involved in:

> ... This is a learning institution, that's your job as a student ... you are charged with a responsibility, it is (our) responsibility to try and give them every opportunity to engage in the process, ... all I can do is be like the server, offer them my platter and say these are the things I am interested in, do you want to try a piece? ... and if they don't take from the platter ... I shouldn't feel insulted, I shouldn't take it personally ... (FDST, 250-268).

At a more practical level, FDSA expressed an approach to dealing with students who produce work that is not acceptable and has to be corrected, trying to guide the student through corrections:

> ... for example say they have done some kind of preparation or they have done a procedure and you check it and you don't like what you see, ... I would say to them I think you need to make some changes, these are my reasons ... or I say I don't think you have quite finished with this procedure, what else you think you should be doing? They might say this, this, or that, I would say to them yes or no depending on what it was, ... but try and guide them through ... not tell them what to do ... (320-336).

PDRA shared a similar approach with FDSA in guiding students to help correct the unacceptable work quality: I like to tell them what the

problem is, let them try and correct it, rather than leave the patient with something that they might have a problem" (379-384). In both situations, the teachers' approach is to attempt to guide the student to recognize their inadequacy and work on correcting it, which is intended to offer the student an opportunity to learn and to demonstrate a concern for the patient.

The approach presented by FDRA shows primary concern for the patient receiving the treatment: " ... I have got to get as much into them as I can, to hopefully, at least, develop their skill to a point they are not going to hurt anybody ... " (556-559). Although concern is shown for the patient, developing the weak student's skills is expressed as a way to reach such a goal.

A unique approach was expressed by FDRP where moral support was offered to the weak student, " ... I would often have them in my home for a meal ... and have them in my lab ... I did that for the weaker student ... " (712-742).

In summary, correction and guidance for the weak student was expressed as an effort to improve the students' skills and judgement; to protect the patients receiving treatment from these students; and to help such students develop interest in improving their practice by offering them moral support.

Time for student learning.

Some teachers expressed discontent with the effort that is required to help the weak student, and felt that such effort should be directed towards giving other students a better share of the teacher's attention,

> ... you are spending all the time, remediating, helping a poor student, ... I think we would be better off to put our emphasis on improving the standard of ten students rather than trying to push through one student who is a problem ... doesn't want to learn, ... does a minimal amount (of work) ... I have trouble with that ... but our system says you got to do it ... they are in the system ... and they are going to get out ... what do you do about it ... (FDRA, 514-526).

One alternative to spending a disproportionate amount of time with weaker students was suggested by FDST who expressed a view that a weak student may need to spend a longer time to learn, and should be allowed to stay until his or her ability can reach an acceptable standard: "... maybe it takes ten years, maybe there shouldn't be a time limit ... until you are confident ... until you are comfortable ... I don't know, I am just asking the question ... maybe it takes somebody a lot longer to learn..." (565-578).

The problems that these solutions to weak students impose on the teaching environment is either that the teacher's attention is devoted to them at the cost of the other students in the class; or, if more time is to be allowed for them, there may be a financial burden since a student has to spend a longer period to graduate. Both views represent a concern over the consequences of teaching weak students.

Dealing with incompetence.

Student incompetence was described as a professional concern. A part of the clinical teacher's responsibility is to protect the public from incompetence,

> ... I think they should be told that for their sake as well as for the sake of dentistry and the public ... I always thought that one of our jobs is to be gatekeepers of a sort ... I don't think that we should be turning people out on the street that don't have the ability to do things ... I think they are not many, but a few ... (FDRT, 60-69).

A different aspect of concern was expressed by FDSA with respect to offering the incompetent students an opportunity for remediation:

> ... I think it's so hard if someone does something really bad to kick them out of the clinic, I think that would be the ideal if someone is doing something repeatedly to patients that you find unacceptable ... you should be able to say to them until you have shown me this, this and this in terms of criteria ... you cannot come back to the clinic ... but it's really really hard to do that ... (781-799).

Other clinical teachers also expressed frustration that they have to tolerate incompetence. FDRT stated that "nobody seems to have the power to kick out people who shouldn't be here" (370-372). Another view was expressed by FDRA who stated that: "I have tried over the years ... in various ways to do things for a student who just doesn't care ... a student who doesn't care about the provision of health care, ... does not deserve a place in the profession" (493-501). Dealing with incompetent students is seen to be a professional concern.

In summary, the concerns that these clinical teachers expressed about weak students arose from their professional responsibility for the delivery of quality treatment. These concerns were reflected in their

comments on correction and guidance to improve quality. The teachers also expressed frustration over the time that is spent with the weak students, preferring that such time should be directed to teach the more competent students. Further frustration was expressed over the limited ability to eliminate weak students, and allow them to continue despite the difficulties they may cause the profession.

Ethical and Professional Growth

Ethical and professional growth was described as a process of internalizing of professional values which included avoiding unethical manipulation of the system to achieve success. Professional ethics also were reflected in reports about developing a balanced consideration of financial gains, personal ego and social status as targets in future professional life.

Developing professional ethics.

Developing professionalism was expressed as a process of spiritual growth towards the profession. The profound importance of developing a deep sense of professionalism is reflected in the opinion expressed by FDRP:

> ... that teaching is an emotional experience ... I increasingly come to believe that the maturity towards the profession is a spiritual process ... and I don't speak now in religious terms, although I am quite comfortable with those as well, but one develops a spirit of a professional ... and students find themselves as an ever-growing creatures who are focused on servanthood, ... I expect that we can

> modify, but we can't substitute ... so they bring something with them ... it could be reshaped but not replaced ... (115-185).

This strong view about professional ethics and dealing with patients was presented as more important than the skill the student develops through only providing treatment in the technical sense:

> ... the hard part is making them ethical, they are wonderful people, ... how you could actually do it ... if you explain to them that that's the way you can win patients, is not how you have the most beautiful technical (restoration) ... but it's your personality, your treatment of the patient, how you handle patients, it's all of those things are important too. I think if you stress that over and over again, from the first day they walk into the Dental School, until the day they walk out, I think that's got to get something instilled into them ... (FDSA, 540-557).

FDRT shared the opinion that ethical principles cannot be taught, but rather instilled through influencing existing personality, " ... and if they choose to be unethical the best thing we can do in this school is to teach them how to do dentistry, whether they choose to be ethical or not, is something that is probably, is something that is engrained long before we ever see them ... we can modify these things, but I don't think we can change them ..." (395-404). Those students who do not exhibit the professional values of their teachers, are considered to be missing an important element of their professional education. These dental students "play the system of getting through Dental School better ... they may not

always get the most of their whole experience, ... those things hopefully will kick-in later ... (FDSH 64-68).

Developing professional ethics was viewed by the clinical teachers as part of the student's growth into the profession. The opinions presented by these teachers emphasized that such aspects of professional growth can only be impressed on students, not taught directly. Even though experience and role modelling may modify their personality with respect to a sense of professional ethics, there was uncertainty about the extent to which the teachers can influence students with such principles.

Values and economic benefits.

Students who concentrate on being rewarded for their effort, on "gains" only, cause an ethical concern for clinical teachers. The emphasis on quantitative assessment of students' work is seen by FDSA as contributing to the development of an attitude that will be driven by dollar signs after the students graduate and start practice:

> ... there is an example of a student (...) who tries to see as many patients as possible, and gets many procedures done because he sees it as a way ... the more points they have ... and that person is not going to be coming out a good dentist because haven't sort of thought about the whole patient ... it's just the point thing that is driving them, and that's the thing that worries me, is how many of those types of students go out and instead of being driven by points, they are driven by money ... you know it's not 10 points, it's 100 dollars ... it's that whole question of how you give someone ethical values if they don't have them to start with ... how to instill those at the age

of twenty whatever ... when they come to the Dental School if they hadn't had them for the first twenty-some years. (490-517).

These concerns about students' focusing on economic benefits more than on professional values was a serious professional concern. Students may develop unethical principles resulting from habits of collecting points towards requirements, or from lack of ethical values rooted in the person from early years of life, or from a confusion between the business and the ethical aspects of a professional community. FDRP was concerned about students developing a "spirit" around an inappropriate "focus"; " ... that spirit could be well focused around economic benefits, personal ego status, two fancy cars, winter holidays, ... and those kind of things with very little substance ..." FDRP continues to contrast that inappropriate spirit, with a professional spirit that is "focused on servanthood ... a spirit of excellence ..." (123-143). FDSH also shows concern about what students' primary focus will be: "... there is that side of dentistry that is a business ... I suppose that is a different side of life ... I am thinking about the [professional] community that you join ..." (416-422).

In summary, ethical and professional growth of the students is a major concern for the clinical teachers. They see, through experience, that such ethical foundation can only be enhanced and modified through acts and role-modelling of the clinical teacher, and cannot be initiated or taught where they may be seriously lacking in certain individuals. The fear was expressed that students who develop a primary concern over collecting "points" may continue after graduation to see the patient primarily as an economic benefit.

Developing Self-Confidence and Communication Skills

The teachers' reinforcement and support for the students as they perform clinical procedures help students develop self-confidence and enhance their ability to communicate effectively. Students' self-confidence varies according to their stage of development and their reaction to criticism provided by clinical teachers.

Supporting students' development.

If a student is provided with the proper guidance while performing a procedure, teacher intervention should not diminish the student's self-confidence, provided such guidance is offered in an appropriate way,

> I think if it (the teacher's interference) is done in the proper way, it doesn't diminish their self-confidence, I think if you don't rush over there and pull the syringe out of their hands and sit down and [say] get out of my way ... but if you come along ... and ask for example: Would you want some help? ... and you know you can offer assistance ... and then you can gauge whether they want to do it themselves ... or they are just grateful that you are helping them ... (FDSA, 223-241).

FDSA also described her thoughts about inappropriate criticism of students in the presence of a patient: " ... they don't like it when they get chastised in front of patients ... which is normal, I guess nobody likes to be criticised ... or make to look foolish ... it diminishes their self-confidence ... " (734-749). FDRP shared his own feelings when helping a struggling student: " ... the best days are the days when you come home and

somebody who is struggling has learned something , and has taken another step forward, and your face shows the joy ..." (19-23). Similar expression to self-satisfaction when help and support is offered to students is expressed by FDRA: " ... you'll find out from students if one says : hey thanks for your help, today I learnt a lot ... that to me says more than anything else ... " or another expression by a student", ... I am sure I am doing this more competently than I did the last time ... " (1003-1019).

The lack of reinforcement and support that a teacher recalls from his or her own student days also influenced behaviour towards students, as expressed by PDRP: " ... I can think back to when I went through ... there were instructors that you know they weren't going to give you any positive feedback, they were going to pick-out bad points or no points at all ..." (142-146). As a result, this instructor tried to avoid excessive negative feedback.

Students developing self-confidence was characterized by these teachers as the students' acknowledgement that they learned better and gained confidence. The teachers' intervention to correct students' errors, if done properly, should not diminish the student's self-confidence. It was also expressed that if the teacher does not offer support and help, the student will not benefit from the learning situation.

Stages in development and attitude.

As they progress in their course of study, students may develop different reactions and responses in their daily interaction with their teachers. This progressive change in attitudes is described by FDRP:

... they (the students) come in first year ... anything you say, they'll

> do without questioning, as they progress .... they mature, and all frequently through the years you hear people talking abut fourth year students and they were such a nice class last year ... what is gone wrong? and there is a fairly negative feeling often about fourth year students and their attitude ... that is their adolescence ... they are beginning to separate themselves from us ... take the dental professional traits and make them their own ... and in the process, they have to challenge us ... and disagree with us ... I think we should accept that... it's OK for them to fight ... (982-1011).

This pattern could be interpreted as a growing confidence and independence in their own practice of dentistry.

A similar pattern was reflected in an expression of "different levels of keenness" as described by PDRA: "... usually at the beginning of third year, (students) are very keen ... you can see the old recorder taking it all ... at the end of third year ... they know it ... and in fourth, they don't even ask for your opinion: " (305-315). Although PDRA's opinion could be understood as a diminishing keenness to learn, he added later: "... no question that there is positive growth ... " (320-321). The perception of growth is supported by similar comments about students made by FDRT; (they) "don't ask as many questions" as they progress towards graduation. This observation is seen as: " actually they have been learning something, they've learned what it should look like" (541-544). This represents a positive view regarding a change in students' need to rely on the teacher as they have become more self-confident. FDST described a feeling of "cynicism" that develops with students as they progress through their

study: " ... If I have one regret ... it's that the cynicism that invades after the four years, because of the oppressive amount of material you have to learn ... you're oppressed, you are unable to control your life ... I think that cynicism stays with you ... I know it was in me ... the students feel that they are being led all the time ... " (487-520). This may express a twofold reasoning for cynicism: the amount of work the students are confronted with, combined with a sense of a developing professional identity.

The views presented about the students' development in confidence over their course of study were variably described as a natural progression of maturity, cynicism, or a reflection of acquired knowledge. Although these teachers varied in reasoning, they agreed on the phenomenon that students' confidence in their interactions with teachers changes over the duration of their course of study.

Development of communication skill.

The development of effective communication skills is expected to provide students with an ability to understand patients' needs better and address such needs to provide better treatment. The role of the teacher in developing this aspect of professional behaviour is to demonstrate such interaction:

> ... sit down with the patient, face the patients and talk to them ... introduce myself ... ask them about their desires, ... I would like to hear about any other concerns that they have ... I do believe that sort of modelling will make a difference in how the student perceives the patients, and their responsibility towards them ... (FDRP, 619-639).

PDRP expressed an opinion about communication that is more broad-based, relating to the profession as well as to the patient: " ... I think that it is important that you communicate with the people, ... I think if you can give them (the students) positive interaction and make them feel more comfortable ... comfort and ability to communicate with the profession and everybody ... " (543-559). These comments also supported the view that the teacher-student interaction creates the basis for good communication.

In contrast, the view presented by FDRT was that communication is a personality trait, and that it is difficult to teach the students to communicate with their patients: "... a lot of that (communicating with patent) depends, to a large extent, on the individual. I think some people can sit and talk to a patient and make the patient feel at home, and comfortable, ... and others don't seem to have that knack, ... I don't know if there is anything that we can do ... at least to help them out, ... I believe that there are some things that are not teachable, and I think that (communication) is one of them ..." (280-292).

The views of the clinical teachers presented a significant variation in their thoughts about their influence on the students' ability to communicate. This influence is exerted through modelling such communication, either by communicating with the patient or communicating with the student.

In summary, these teachers believed that student development is supported by proper guidance that will enhance their self-confidence. The students' attitude may change during the course of study to reflect their progress towards maturity and independence. Teachers may enhance

students' communication skills by role-modelling. However, one teacher expressed the view that communication is a natural trait that cannot be taught.

Developing a Concept of a Community

During their course of study, the students develop strong ties with their classmates as well as with students in other classes. This aspect of student development is seen by teachers as a strength in students' relationships as well as in their future as members of a professional community.

The class as a community of peers.

The friendly atmosphere that students develop while they are in the school, and in particular while performing treatments in the clinic, is viewed positively by clinical teachers:

> ... for the most part it (the clinic) seems to be a fairly friendly atmosphere and students seem to know what their class of friends are doing ... I'll see them quite often giving each other moral support, ... and sometimes they have patients that are difficult to handle, ... they all react, often times they try to be there ... they all pay attention to what's going on ... it may be the message about how we really are a community and hopefully once (they) get out of Dental School, they'll also seek that community ... (FDSH, 385-414).

FDSH further explains her views about how the students, as they spend an enormous amount of time together, develop such a sense of a

community:

> ... being in the Dental School is a very interesting experience ... for one thing you don't get to choose the people that you spend an enormous amount of time with ... which means that automatically you have to learn to give and take ... because you spend time with people in close quarters ... you have to share ... and some of those people may have come from totally different backgrounds with totally different experiences, ... different opinions ... different likes and dislikes ... you have to learn to cope somehow ... coping with the whole class individually and collectively has a big role to play in how the whole class functions (627-647).

FDRT expressed views about leadership in the class community. He suggests that the students with better communication skills are the ones who develop such leadership:

> ... the same students that can communicate well with their patients can communicate well with their peers ... and certainly are helpful in terms of positive reinforcement ..., if you wish, to their peers ... those people are sort of like the captain in a hockey team, ... they have this ability to be able to stimulate ... some people are liked by everybody, ... there got to be a message of some sort ... (614-628).

The students' support for one another is described as a favourable trait that continues after graduation, as practitioners call upon one another when situations arise in which one needs to consult with peers:

> ... I can see the students in the clinic now, they are all trying to help

> one another ... they often help as they go along ... and as a student, I can recall, for the most part students are willing to help you out, the older students that have been through a little more and give you guidance, and I think it is generally supportive ... I guess it's important, once you are a dentist ... that you can call upon your colleagues at different times ... whether they are specialists ... I think it is important that you are able to communicate with other people in the same profession ... (PDRP, 522-544).

The concept of students learning to support one another and developing a sense of community while they are at the Dental School, was positively expressed by these teachers. This was viewed as the foundation for the community of practitioners, and for their ability to communicate with one another in their future profession.

Collective learning.

While they are together in the class, the students form a close supportive community which contributes to their learning. The students' learning is described by FDST as a communal outcome of learning:

> ... If the learning process is seen as a collective thing between you and your colleagues, ... to do things together and that the outcome is a communal outcome, whether it's good or bad, ... and you pat each other on the back when it's good ... and you support each other and say OK you have to do it again when you don't succeed ... I think making the experience communal, that might be a start ... (600-616).

FDST comments further on some long-term clinical cases, where because of the extent of the treatment, students may not be able to see the results. Such experience may be carried from one group of students to another:

> ... you are not around long enough to see your failures ... and only when you are in practice you see them cropping up ... we gather around and we look at the initial diagnosis ... and then look at the results ... and everybody sits around and says what we could have done differently ... (148-161).

This concept of collective learning, although expressed by one teacher only, represents a view about the importance of instilling in students the concept of learning as a community, and learning from the experiences of others. This view is also a reflection of the concept of life-long learning that was expressed also by FDST.

In summary, developing a concept of a professional community starts when students from different backgrounds gather at the same place of learning. They learn to deal with one another and create strong relationships. In this context, collective learning was expressed as that activity of students sharing learning experience, either by joint activities or by learning from the outcome of the experiences of others.

Teachers' Views on Different Aspects of Teaching

The clinical teachers expressed views on a variety of their own experiences as clinical teachers, including how they became interested in teaching, their awareness of certain weaknesses, their experiences with

peer support among teachers and how they believe students see them. The following are some of those views related to teaching roles that were not reported earlier in categories.

Developing interest in teaching.

Four teachers reported that they were influenced by their own teachers as role models in teaching. PDRA was specific about learning from practitioners (part-time teachers) who influenced him to do the same for students: "... I found that I learned a lot from part-time people ... when I say a lot I mean practical aspects, so I decided to be that type of person ..." (11-20). FDRA found his role model in his own father who was a school teacher. FDSA was "inspired and motivated" (10) by a teacher, while PDRP shared practice with a part-time teacher who influenced her as a teacher and as a practitioner. FDSH indicated that sharing information and explaining yourself was her motivation for teaching " ... sharing information, ... I enjoy doing that, ... I think the idea of explaining myself is a real challenge ... " (14-18). FDST shared a similar idea of "explaining things to people and making them relevant ... " (8-9). FDSP also spoke about "sharing knowledge" in addition to the challenges of "keeping up-to-date" (5-7).

Less common reasons included the comment that the "department head asked me if I would consider teaching" as in the case of FDRT (5-6); or "thought I'll try it for one year that extended to a couple of decades now" (FDRP, 13-14). These two examples may be understood to demonstrate that, while interest in teaching is not a primary reason for becoming a teacher, such interest may develop with experience.

In summary, four teachers reported that role modelling motivated them to develop an interest in teaching and these role models influenced their decision-making processes as teachers. The interest in teaching, sharing information and keeping up-to-date were also among the teachers' prominent reasons for selecting professional education as a career. Individual circumstances such as looking for a geographic location, or trying first and then developing interest, were reported by single individuals. None of the teachers interviewed expressed any dis-satisfaction or regrets about becoming a teacher.

Awareness of weaknesses.

Only two of the clinical teachers reported an awareness of certain weaknesses that they have dealt with in their careers. FDRP reports that, " ... with my circumstances as being one of the most intimidating faculty members, I think it (inviting students for a meal) broke a barrier to find out that I did not eat children for meals, ... I was reasonably normal ... " (718-723). FDST addressed his style in dealing with his own failures, " ... I think of my own failures that from which I was able to go back and assess well what is my motivation for doing things, ... what is the process, and why I wasn't able to accomplish it ... " (98-103).

Four teachers reported on weaknesses of other teachers. They commented on different aspects of weaknesses, either in general statements such as in the case of FDRP: " ... I find myself condemning my colleagues again, but I think there is a general tendency to treat the patient as an object, and relatively impersonally... " (474-478); or, weaknesses of others that were reported earlier as in the anecdotes of

teachers who either experienced poor role models in their own student experience, or observed an interaction between a student and another clinical teacher that they considered inappropriate. These reports suggest that it might be easier to observe, and perhaps learn from, the weaknesses of other teachers rather than one's own shortcomings.

Peer support.

Peer support among teachers is a form of communication in a community of colleagues. Some of these teachers showed negative feelings about the presence of such support. FDSH felt that there is a lack of communication to foster such support:

> ... it doesn't have to be coffee, but there isn't an easy place to meet with people and just talk about what is happening in your life, ... I couldn't find that many people that I can talk to ... (812-823).

FDST expressed his disappointment with peer support when he encountered a problem in dealing with a student, "... I was in an unusual set of circumstances and nobody was going to stand up and say that we have a problem ... " (289-291). FDRT also commented on problem situations with students, that when such problems arise, " ... the onus is on you to make it all better, ... somehow just make it all go away ... " (690-695). The lack of peer support either in day-to-day communication or in dealing with problem situations, as reported by these three teachers, could indicate a serious problem affecting this community of peers.

How do students see us?

There were three distinct opinions presented on how teachers are viewed by students. One was about the certainty that the students see us as "who we really are and not who we think we are, or who we pretend to be ..." (FDRP, 210-213). The second opinion was that the students "see you as the evaluator who is there to evaluate them ... " (FDSP, 384-386). The third opinion was that students express their view about us through appreciation, " ... Oh, this has been a great session ... " (PDRA, 230). These three views represent three different angles from which teachers believe that students see them. Although these reports involves speculation about students' opinions, they reflect perceived aspects of the teachers' roles and relationships to students.

Professional gatekeeper.

Through both teaching and evaluation, the clinical teacher bears a gatekeeping responsibility to the profession regarding the quality and capability of the graduates; "... we strive to be both the advocates for the student growth into the profession, and the gatekeeper to deny society the penalty of having incompetent people graduate... " (FDRP, 396-400). FDRP also expresses that there are variations in teachers' attitudes and balance between advocacy and gatekeeping roles, " ... my own experience, I veer too much to the side of gatekeeper, ... most of my colleagues have veered far too much as advocates ... " (401-405). The gatekeeper's responsibility needs to be empowered to be effective; but as FDRT, FDST, FDRA and FDSA have indicated, such power does not exist.

In summary, clinical teachers developed interest in teaching primarily as a result of following the role model of their own teachers, or as an interest in influencing students through good teaching practices and proper explanation. To a lesser extent, some teachers choose teaching as a career. The teachers' awareness of their own weaknesses was expressed less frequently than their awareness of other teachers' weaknesses and poor practices. This observation may be a reflection on people more interested in their strengths or a social culture that is critical of others. Peer support among a community of teachers seemed to be lacking, especially when it is needed to support moral and ethical stands. These teachers' views on how they are seen by students, although speculative in nature, provided insights on teachers' perceptions on how they are viewed by students. Finally, teachers see themselves as gatekeepers of the profession, and these views express a professional responsibility to the professional community and to the population that is served by such a community.

Teachers and the Administration

The clinical teachers reported on some aspects of their role that interact with administrative matters. These aspects included protecting oneself from students appealing their grades; the administration's role in recognizing good and effective teaching; and reflections on the administration directed aspect of teaching, such as curriculum changes.

Protecting yourself.

The teachers' concern over the limited ability to deal with some

cases of student incompetence, and that such students are allowed to continue the program and become professionals, was expressed by FDRP. He referred to "a litigious society" that forces the teachers to protect themselves and be concerned about correctness over the issue of the learning process or the patient benefit; "... we suffer from a litigious society ... we do too much to protect ourselves in comparison to serving a patient or our students ... I greatly wish that this could change ... we do so much that is based on self-protection ... I have fear that we will have to deteriorate substantially before that pattern is changed ..." (834-844).

FDRA reports on the teacher's limited ability to deal with the student who "doesn't care":

> ... I have tried in various ways over the years to do things for a student who just doesn't care ... you can't fail them and this is really the only stick that you have ... our system allows students through the system, and into the profession and I think this is a detriment to the profession (493-503).

FDRA also presents the opinion that such student "does not deserve a place in a health profession" as reported earlier . Both teachers, while showing their concern for the profession and the quality of care for the patient, presented the view that their limited ability to deal with student incompetence results from a society that protects rights over duties, and an administrative system that does not deal adequately with such incompetencies. This concern of the teachers for the quality of professional performance was not diminished by the limited appreciation for quality of teaching that is discussed next.

Recognition of good teaching.

Good teaching may not be recognized adequately by the administration, but there is reward in students' appreciation of the teacher's efforts. FDRA comments: " ... I think good clinical teaching is not recognized the way it should be ... a good clinical teacher doesn't get any brownie points" (964-970). FDRA further comments that the rewards of good teaching come through the comments of students, although it might not be very often, but " ... when they do come , you know you feel very good about them ... you feel that you imparted something on somebody that has truly benefitted ... " (1029-1034).

There was no indication about the type of reward the teacher expects for good teaching, but the actual reward attributed to students' learning and influencing the student's professional development showed that, as teachers and as humans, some reward for efforts is desirable.

Reflection on curriculum changes.

Curriculum change, which normally results from student and teaching needs, is sometimes viewed by teachers as administrative change. Both views were expressed by these teachers. While PDRA welcomes and commends a change in curriculum; ("It's a new concept, and I think there is a lot more of the practical things are being shown to the students in the clinic right now than there was before... "), he further contrasts this change to earlier methods of teaching when the students were " ... very technically competent in (certain) areas ... but there is also a practical way of doing (treatments) as well ... " (115-134). This view appreciates a trend towards educating the students in a practical

approach. In contrast, FDRA commented on the same curriculum change: " ... I am looking at it (inadequate teaching curriculum) from our current system, if we could re-institute into our education program some form of discipline-based orientation back into the senior curriculum, ... I believe that we could improve the quality of education" (363-371). The same change that is viewed as improvement by one teacher, was viewed as lack of discipline and decline in quality of education by another. The wish that was expressed by FDRA - " If we could..." - implies that this teacher sees the change as imposed by administration. Those two contrasting views exhibit a gap in perception of changes that are supported by the administration.

In summary, the teachers' reaction to some aspects of their teaching and to student learning shows concern over the lack of ability to deal effectively with the incompetent student, and that the teachers have to be concerned about protecting themselves to a point that may compromise proper teaching and patient care. Teachers also expect rewards for good teaching. Such rewards are perceived as lacking, although at times, they may be expressed by students. Curriculum changes are seen by teachers as an administrative responsibility. The same change may be welcomed by some and viewed as decline in quality by others, which may express a contrasting view of a teaching curriculum and a learning curriculum - a point that will be discussed in the next chapter.

In overview, these data reflect many aspects of the situated learning theory. The teachers have articulated views and opinions on their performance as professional role models for the students, and they have provided the students with an environment of enthusiasm and proper

communication conducive to learning. Many teachers have expressed opinions about their teaching styles and support for students' learning. The teachers have viewed power as that of expertise rather than power drawn from position. The teachers' concern for the ethical and professional growth of the students includes development of communication skills and a concept of a community of peers. All of these findings are consistent with situated learning theory.

There were also some aspects of the data that were not consistent with the concept of situated learning. Issues such as teachers who did not set a good professional role model, reports of actions that resulted in students developing resentment and cynicism, and teachers' views on students who experience ongoing difficulty were among the issues that require adjustment if the situated learning approach is to be strengthened. The spirit of situated learning evident in this data, together with the situations that threatened the concept, form the basis for the discussion that follows.

CHAPTER SIX
Discussion

The previous chapter summarized the rich body of data provided by the clinical teachers who participated in this study. Those data adequately satisfied the research questions in that these teachers:

1. articulated their views regarding their role in directing the students' learning by providing a professional role model and through expertise in their fields;
2. expressed an understanding of the relationship between learning and participation in professional activity and that the profession reproduces itself through learning activities in a practice environment; and
3. demonstrated their belief that, through learning activities and professional discourse, students engage in a process of internalization of ethical values and growth into the culture of the profession.

This chapter discusses the views presented by the clinical teachers in relation to the research questions, and to the focused literature reviews in the fields of situated learning and dental education. The discussion which follows is organized to deal with the role of the teacher as a resource for learning in practice; the relationship between participation and learning; and the legitimacy of such participatory activity. This chapter also discusses some current issues in dental education with respect to their influence on student learning and the effectiveness of the participatory learning

environment.

Apprenticeship, Situated Learning and Students of Dentistry

The education of students to become practitioners in the profession of dentistry is historically rooted in apprenticeship. However, the apprenticeship model was gradually replaced by institutionalized dental education about a century ago. This transformation process was followed by a continuous process of evolution to develop the curricula offered in today's dental education institutions. Consequently, dental education is a unique combination of historical apprenticeship and institutionalized education. In recent years, dental education has undergone a process of re-examination of purpose and practice to adjust to current professional needs (Tedesco, 1990), and the results of this examination have focused renewed attention on the nature of learning through apprenticeship.

In a parallel view, the historical form of apprenticeship also has been re-examined and developed into a theory of situated learning. Situated learning theory views the learner as a whole person to be introduced into a culture and practice of a profession. The basis of situated learning theory is the relational character of knowledge and learning as a comprehensive understanding involving the whole person and learning as situated within activity (Lave & Wenger, 1991). This view stands in contrast to the narrow view of professional education as transfer of specific knowledge and skills.

In reconceptualizing apprenticeship, Lave and Wenger (1991) have presented an analytical view of situated learning which they call "Legitimate Peripheral Participation". This analytical view regards the newcomer to a

situated learning activity to occupy a peripheral position in a participatory learning situation. This peripheral situation changes gradually towards full participation as the student graduates and becomes a member in a community of practitioners. In the case of dental education, legitimacy of participation is based on the fact that a student, having gained entrance into an institute of dental education, has acquired a legitimate sense of belonging to a community of practice.

Furthermore, the most recent developments in the dental curriculum are primarily concerned with fast demographic and technological changes. This trend has been criticised as being inadequate, and critics argue that the emphasis should be redirected towards preparing students to become practitioners of the future, able to make judgements and deal with changes through maintaining current knowledge of their field (Neidle 1990). One way to address Neidle's criticisms is to examine the renewed attention to the evolution of the preceptor role of the clinical teacher in dentistry (Cohen, 1985), which has signalled a paradigm shift in dental education towards the concept of situated learning. This shift and its underlying principles are a fundamental principle in this discussion, which focuses on the views presented by the clinical teachers at a Faculty of Dentistry regarding their role as preceptors and their opinions about dental students' learning and professional development as a situated activity.

Resources for Learning in Practice

Dental students, as they engage in a practical setting in the school clinics supervised by experienced clinical teachers, represent the historical

form of "master-apprentice" relationship. The clinical teachers, who have no role in the students' accessibility to and legitimacy in being at the learning setting, assume their teaching role as members of a community of practice. This role is expressed in the interviews in this study as the teachers' relationship to students, in which the teacher is the professional role model, who, through actions and knowledge, guides the students in their learning experience. The teacher is also a "locus of authority" who evaluates the students' performance and maintains professional standards.

Teachers' relationship to students.

In contrast to the resources available in "situated learning" model of clinical learning experiences of dental education, the asymmetrical relationship in which the student performs the treatments and the teacher assumes a supervisory role is not the traditional master-apprentice relationship in which the apprentice actually engages in the work of the master (Lave & Wenger 1991). In the model described by the clinical teachers in this study, the apprenticeship relationship is represented by role-modelling. Effective role modelling, as it is described by these clinical teachers, offers students the opportunity to interact with their teachers, observe the teachers' rapport with patients, and develop a relationship with their teachers characterized as a relationship of "comfort and respect". This relationship was presented as central to effective learning: where comfort exists, a student can interact with teachers, observe their actions and learn from them. The single case in which a teacher expressed a preference for maintaining a distance from students, was a reaction to a particular negative

episode experienced by that teacher. The negative role models that some teachers have encountered during their student experience, also resulted in a strong expression of the value of role-modelling. Moreover, such non-exemplary behaviour is being consciously avoided in their role as teachers. While such negative behaviours as those reported represent a poor understanding of the role and authority that the teacher assumes, most of these teachers used their negative experiences to influence positively their teaching by a self-conscious effort to avoid similar negative practices.

Regarding the interaction with students, most of the views and experiences offered by the clinical teachers in this study were expressions of the teachers' estimation of their conduct. There were only two incidents in which teachers reported poor communication and mishandling of students, while there were four incidents in which teachers reported other teachers' poor behaviours. This pattern of observations may suggest that teachers' own behaviour might have been reported in a manner that reflects their beliefs more than their conduct. The consequences of such discrepancies, and the observed long term effect on students as evidenced by the lasting effect of these teachers' experiences as students, underlines the importance of carefully selecting clinical teachers and supporting their orientation to teaching responsibilities.

Locus of authority.

Authority, in apprenticeship situations, is drawn from a variety of sources. Lave and Wenger (1991), in their analysis of five different forms of apprenticeship, have observed that authority assumes a different meaning in

each situation, and those differences may be related to mastery or pedagogy in a particular situation. In the model described by the clinical teachers in this study, authority was expressed as "power of expertise". Such power was exercised by the clinical teachers in giving directions to students, and in evaluating the quality of their work and learning activities. These teachers have characterized authority as predominantly based on their own expertise and judgement, and on their role as representatives of a community of practice that has entrusted them with maintaining standards of practice. To a lesser extent there was also a duality of authority expressed in that, when teachers presented views regarding the problems of the weak student, their reference to authority was to that of the organization and the administration.

These observations demonstrate that the resources for learning in the model of situated learning described by these clinical teachers are part of an intricate structure of professional behaviours and attitudes, and of mastery of knowledge and expert judgement, in which authority is drawn from the community of practice.

Participation and Learning

The newcomers to an apprenticeship setting, having established their legitimacy as learners, will not only occupy an observational post, but will be in a position to begin learning by participation (Lave, 1989). This concept was expressed by the clinical teachers as the students' willingness and acceptance of the knowledge that teachers transfer to them. The newcomers were viewed by these teachers as believing and taking note of whatever the

teachers offer them. The teachers have characterized a change in students' attitude over the course of their study as comparable to the resentment and cynicism characteristic of adolescence. Such changes in attitude as students progress towards full participation, is worth further investigation to reveal insights into practices that precipitate such change. Other observations presented by the teachers that may contribute to understanding students' change of attitude include the perception that students are sometimes burdened by the overwhelming duties they are assigned and experience a feeling of being "helpless" in making decisions or choices about their learning. Such feelings may precipitate an attitude of resentment as the students progress through their studies. Therefore, this change may be a reflection of the teachers' actions, institutional rules and regulations, or may be an adolescent-like reaction to the anticipated change in role and responsibility, as the students prepare for full participation in the practice community. The students may value further involvement in participation over the current directive teachers' role that, in most cases, had been limited to supervision and correction.

The directive teaching role may unintentionally generate a limited form of participation and limited goals. The goal of complying with specified requirements may develop a learning practice different from that intended (Bourdieu, 1977). While learning through participation is still in the core of the learning practice that takes place, the target may shift towards complying with clinical requirements. Lave (1989) distinguishes the difference in the targets as a difference between a learning curriculum and a teaching curriculum. A learning curriculum consists of situated

opportunities, and is focused on development; while a teaching curriculum consists of structured resources and is focused on instruction. In the present research, the teachers' opinions about students' requirements contrasted: while some viewed the clinical requirements as a necessary tool for measuring students' ability and competency, others viewed them as a potential compromise for patients' best interest. As one clinical teacher expressed, when students are planning treatments, they will have "one eye on the patient and one eye on the requirements". In the case of the clinical teachers sampled, it became clear that the "full-time" academic teachers were concerned with the teaching curriculum, and viewed some aspects of the student learning they observed as fragmented. In contrast the "part-time" practitioners supported a learning curriculum, saw clinical learning as a true situated activity and viewed the clinical setting as offering students a better opportunity for learning. This difference in orientation between the "full-time" and the "part-time" teachers may leave the students in a dilemma about what is important for their learning.

A learning curriculum orientation also supports continuity in the profession. It is typical of professional education that a community of professionals reproduces itself by educating newcomers through an institutionalized schooling system. This form of learning is viewed by Lave and Wenger (1991) as a process of continuity in the profession that may contradict a concept of displacement where the newcomers displace the "old-timers". The concern that the teachers have expressed regarding professional ethics and quality of productivity of students, strongly suggests that they understand the reproduction and continuity of the profession to be

dependent on their role as clinical teachers. The concept of displacement, if viewed as that of introducing new knowledge to replace dated techniques (Christensen, 1986), becomes a valid concept. From the situated learning perspective, there will be no displacement conflict and the learning curriculum will be supported. When teachers reported that maintaining currency of knowledge was among their reasons for their interest in teaching, their views supported the notion that both teachers and students must maintain current knowledge as the community reproduces itself.

Participation and accessibility.

The matter of accessibility, on which the legitimacy of students participating in the learning activity is based, was a subtle aspect of the teachers' comments on the weak student. Tension around the issue of accessibility is not new to dental education. An editorial in the Dominion Dental Journal in 1894 suggested that "good preliminary education" is necessary for those who wish to become professionals, establishing a standard for the legitimacy of participation. A similar view was expressed almost a century later by Neidle (1990), who indicated that proper selection of good quality students is necessary to maintain established standards in dental education. The teachers in this study expressed concerns over the weak students, and the legitimacy of their participation in the professional community. Statements such as "students who should not be here", are indications that the issue of accessibility, which has persisted for over a century, continues to be a serious issue with no apparent solution.

Legitimacy of participation was argued as a status achieved as the

students are admitted into the dental educational institute. In the case of the students who display a poor aptitude towards becoming members of the profession, the issue of legitimacy and their future contribution to the profession may be questioned. Some teachers in this study expressed a concern that the institutionalized system allows weak students to be admitted and to continue in the system. While this concern relates to maintaining professional standards, it also manifests a teaching, rather than a learning curriculum.

In summary, the teachers' views on students' participation and learning as a process through which the professional community reproduces itself demonstrates a clear understanding of their role as clinical teachers. Within this role, the differences observed with respect to whether the target is the teaching curriculum or the learning curriculum, and issues regarding accessibility, need to be resolved before true situated learning can be realized.

Transparency and Discourse

Lave and Wenger (1991) suggest that, for learners to become full participants in a community of practice, the inside workings of the community should be visible to them: if the black box can be opened, it can become a "glass box". Knowledge and ways of perceiving and manipulating objects in the clinical setting can be made more or less transparent to learners.

Clinical teachers and transparency.

For most students of dentistry, their clinical teachers are the only lenses of transparency into the profession. This transparency was reported by the clinical teachers in this study as students learning from them through observation of "how things are done", or through asking them questions about how a practice is run. One of the clinical teachers reported that his interest in teaching developed from the positive influence of one of his clinical teachers, as a result of the learning opportunities offered by that teacher. In these cases, there is reason to believe that a particular teacher can carry a student beyond the acquisition of conventional knowledge and manipulating tools, and into activities that develop a sense of belonging to the professional community.

Hershey (1986) states that the dental curriculum is preoccupied by "doing things right" as opposed to "doing the right things". This may contribute to understanding why the teaching curriculum occupies a more prominent place than the learning curriculum, with the consequence that the transparency into the profession is obscured. In this study, one teacher provided a contrast to Hershey's observation. In praising a recent curricular change, the teacher described it as a positive change because "students are able to see and do more things": the glass box is replacing the black box and the learning curriculum is offering the students more visibility into the profession. The clinical teachers may find themselves in a dilemma in choosing between a teaching curriculum that supports the need for satisfying requirements and maintaining standards through evaluation, but that may limit or even sacrifice learning opportunities; and a learning curriculum that

supports visibility and transparency into the profession but may sacrifice the systematic and structured design of student learning.

Participation and discourse.

Learning to use the language of a profession is also considered to be a component of the transparency into the profession that extends beyond knowledge and skills and has more to do with participation. Jordan (1989) argues that learning to become a participant in a community involves learning how to talk in the manner of full participants (professionals). In this study, the teachers strongly emphasized the importance of appropriate communication between the student and the patient, as well as the proper communication between the teacher and the student, particularly in the presence of a patient. In the opinion of the clinical teachers in this study, maintaining good rapport with patients and clearly explaining treatments to them, constitutes a professional obligation. Some teachers are of the opinion that learning to speak as a professional is mostly a unique talent and a personal trait. Jordan (1989) suggests that, while there is no special form of discourse that is crucial to the movement of a newcomer towards full participation, learning is frequently supported by conversations and stories. In the case of students of dentistry, stories may be a favoured form of discourse among peers exchanging information about cases that they treated, or analyzing problematic or difficult cases in a group discussion. Lave and Wenger (1991) support the notion that the circulation of knowledge among peers as they engage in practice may well be a condition for the effectiveness of learning, and that learning through communication occurs in

both formal and informal settings.

In this study, clinical teachers have reported on both aspects of communication, where students exchange their experiences through stories of some events they have experienced, or where teachers modelled communication with patients in the presence of the student. Such communication with patients was in the form of "talking to them to calm them down", or, more formally, in explaining the purpose of a treatment.

In summary, the transparency into the profession provided through the clinical teachers provides students with an opportunity to realize better the significance of their learning activity. Such transparency enhances the development of professional knowledge and skills, as well as the development of the language of professional practice and relating to patients. The degree of transparency required goes beyond role-modelling and includes clear explanation and reflective discussions of the teachers' professional experience.

Current Issues in Dental Education

Although the roots of dental education are embedded in an apprentice concept, a structured curriculum had evolved by early in this century. This structured curriculum has been the subject of restructuring over the last two decades, primarily in response to the needs of the modern dental practice (Tedesco, 1990). These needs include educating the dentist to deal with advanced technologies and changes in disease patterns. This current challenge to existing dental curricula may be viewed as a trend of a post-structuralist era in which re-examination of goals and practices is

emphasized. Neidle (1986, 1990) presented critical views about the current status of the dental schools and their limited ability to meet the challenge of today's and future practice needs. Like most writers of her era, Neidle has concentrated her criticism on the curriculum in dental schools and the need for a new paradigm and pedagogy. There was very limited attention to the important role played by the dental educator. Cohen, Cormier and Cohen (1985) were among the few that paid attention to the role of the dental educator. They initiated the preceptor model at the University of Pennsylvania, a landmark in the introduction of the situated learning concept to modern dental education in which the concept of apprenticeship is revisited. Christensen (1986) argued that the dental educator should be a practitioner and that the educational institutions and the practice community should continuously maintain a dialogue and exchange of opinions. O'Neil (1990) indicated that the modern dental educator should be supported with a strong faculty development program. Since his views were centred on curriculum renovations, this may indicate that the development activity is to support the new pedagogy rather than the specific role of the clinical teacher.

Professionalism and curriculum.

In the present study, the clinical teachers have articulated strong opinions about their role in helping the student develop professionally. The development of professional ethical values was a prominent theme in their comments about professional development. This trend did not appear to be curriculum or pedagogy driven, but rather a reflection of professional

responsibility. Neidle (1990) presents an opinion about the difference between ethics that are learned at one's "parents' knees", such as those drawn from the ten commandments, and the modern professional ethics which are related to patients' information, modern disease dilemmas or quality assurance that, in her opinion, are the responsibility of the dental school. Some of the teachers in this study indicated that students come to the dental school with a certain set of values, somewhat like Neidle's first set of ethics, learned at parents' knees. While it may be too late to teach those personal values in dental school, the clinical teachers in this study would argue that Neidle's second concept of professional ethics should constitute a component of role-modelling and growth into the profession.

In summary, when interpreted from a situated learning perspective, the opinions articulated by some part-time teachers represent a learning curriculum, emphasizing practical approaches to treatment and students' opportunity to experience different treatment modalities. This view is consistent with Christensen's views (1986) on the benefits of the exchange of opinions between the teaching and the practice communities. In contrast, the opinions presented by some full-time academic teachers represented a teaching curriculum, characterized by their concern for maintenance of standards and modern curricular innovations, and are consistent with O'Neil's analysis (1990) regarding charging dental educators with maintenance of quality standards of the new graduate. Irrespective of their pedagogical philosophies, the teachers in this study clearly view their role and responsibility towards professional ethics as a primary concern.

Recognition and quality of teaching.

With respect to recognition for teaching, Menges (1994) argues that research efforts are usually more visible and more rewarded than teaching efforts, and that teacher motivation through recognition of good teaching effort is desirable. This issue was represented in this study by the teachers' opinions that there are no "brownie points" in teaching and that the teachers' own satisfaction is drawn from students' learning and student acknowledgment of such learning. From a more positive point of view, the teacher who commented on the lack of communication among teachers in exchanging views and experiences related to teaching matters, signals a significant view about the value of a discourse among teachers, as a faculty development strategy and a means of building collective experience. Such collective experience should be of value and benefit to the student and enhances the teacher's role in supporting student development.

With respect to quality of teaching, the incidents of negative role-models that some teachers reported from their own experiences as students warrants examination. It was clear that such incidents have a long-lasting effect in the teachers' memories. Although they were reported as a teacher behaviour that should be avoided, the negative effect of such teachers on students' identity and self image was clearly very serious and must be avoided.

Conclusion

In overview, the teachers interviewed in this study articulated views that support the concepts of situated learning, and show a strong awareness

of their role in directing student learning towards becoming fully participating professionals. Collectively, their views reflected understanding of a participatory learning environment. This understanding was revealed through their reports on role-modelling and guiding students' learning experiences in developing the broad spectrum of professional knowledge, in contrast to the perceived inadequacy of developing only technical ability and knowledge in professional education. The teachers' concern for the students' development of professional values and ethics through cultural discourse as they move towards becoming full professionals, indicates understanding of educating the whole person. Furthermore, these clinical teachers held the opinion that the person, while engaging in activity, is developing professionally. All of these views are consistent with the concept of situated learning.

Not all of the views reported by clinical teachers were consistent with situated learning theory. The incidents in which poor rapport between certain teachers and students were reported, clearly violate the principle of situated learning. The teachers whose actions violated the student's developing identity, left a negative effect on the student's self-confidence, and consequently, created a poor role-modelling and learning environment. The fact that such problems were reported regarding "other teachers" leaves open the question of whether the teachers reported their actual practices or their beliefs about preferred actions. Can the teachers see their own shortcomings and can they remedy such faults? More open communication between the teachers may help resolve this issue.

A second violation of situated learning principles occurred with

respect to students with learning and attitude problems, who are allowed to continue in the system and become professionals despite their ineptitude. These reports raise questions of legitimacy of participants. Maintaining those students was characterized as allowing intruders into the profession and violating the "gatekeepers" role of the clinical teachers. Gatekeepers are expected to be vested with authority to stop intruders. Teachers reported lack of such authority and placed the blame on the administration. Regardless of where the blame is to be placed, the perceived illegitimacy of such students is a serious concern.

The collective positive views of teachers' experiences and beliefs in their roles, at times differed on certain roles and aspects of student learning and with respect to the renewal cycle of the practice community. Reconciliation of such differences may be achieved through a forum to exchange teachers' opinions and experiences relating to the student learning and identity needed to transform the newcomer into a full participant in a professional community.

The findings of this research identify areas for further investigation. The issues of change in students' attitude over the course of study and development of cynicism among graduates require further study to explore the factors that precipitate such a change in attitude. To a lesser extent, the differences in views between the full-time and the part-time faculty, and the gap between the teaching curriculum and the learning curriculum perspectives need to be addressed. Such efforts may necessitate a broad-based communication between the teaching community and the practice community, rather than a limited representation of the practice community

through the part-time teachers.

Recommendations

Based on the interpretation of these research findings, the implications of this study for the dental education environment examined may be summarized in the following recommendations:

1. That a communication forum be developed among the teachers to enrich their collective experience and understanding of their role.
2. That a communication forum be developed between the clinical teachers and the practice communities to close gaps between the teaching curriculum and the learning curriculum.
3. That the students' perspective, as participants in the learning activity, be explored regarding issues of role-modelling and learning, and growth towards professionalism; development of professional ethics; and the student identity in the participatory learning environment.

CHAPTER SEVEN

Personal Reflections

A quarter of a century ago, I immigrated from a middle eastern culture to the North American culture. This immigration was an experience of change in language, climate and social interactions. Recently, I have immigrated from dental materials research to educational research. This immigration was an experience of change in methodology, where the power of measurements was replaced by the power of words and thoughts. In the first immigration, I maintained a "dual citizenship" status where the heritage blended into everyday life and activities in the new environment. In the most recent immigration, I hope to maintain a similar dual citizenship in order to blend the outcome of this study into the teaching and learning in the dental education environment.

Early in my studies towards the degree of Master of Education, I enrolled in a course on Development of Higher Education in Canada. My focus in that course was the development of dental education; this was my first encounter with the practices of apprenticeship and the development of an institutionalized system in the education of dentists. More recently, I encountered Lave and Wenger's book on; *Situated Learning: Legitimate Peripheral Participation.* This book has stimulated my interest in the present study, in that it expanded my perspective of the daily activities we conduct in the field of dental education from a limited view of teaching the proper material and acquiring skills, to a wider perspective of integrating a whole person into a community of practitioners.

I approached this research project with interest and caution. The interest was in exploring the views and beliefs of my colleagues about

how they view their role in student development. The caution was my familiarity with the informants as colleagues and the concern that familiarity would create selection biases or limit exploration of their opinions. My caution was not warranted, since the literature supports familiarity as a strength in selecting good informants. My colleagues offered me their time with great generosity; all those who were approached had agreed to participate and were extremely cooperative in arranging the interview schedule. An atmosphere of mutual comfort and respect prevailed over the interview sessions. Such an atmosphere was conducive to producing a rich mountain of data to ascend.

My experience in conducting interviews was limited and the question-guided interview method was new to me. In the first interviews, I felt that the time was at a standstill and I was trying to adhere to the guiding questions. As the interview process progressed, it became much easier to explore the ideas presented and follow the strengths in each informant's opinion. At times, the post-interview "chat" was also valuable, and in one interview, I resumed recording to capture an important opinion that was presented in that chat. In another case, the informant frequently requested a pause to collect and organize some thoughts. It was generally felt that the informants were quite sincere in presenting their opinions as the best of their thoughts and judgement. In most interviews, responding to the questions regarding students' growth into the profession was difficult; the teachers' views supported situated learning, but they did not view such day-to-day activities as growth into the profession. Although the involvement of part-time teachers in the clinical teaching is sometimes viewed by full-time faculty as a secondary teaching role since, in most cases, they were not directly involved in the

planning of teaching activities, the views presented by part-time faculty were supportive of a very central mission: the learning curriculum. That role is very important to students' growth into the profession. The interviews reached saturation at approximately the seventh interview, but it was still interesting to hear similar views presented with a variation in intensity. Overall, it was a fascinating experience to interview colleagues whom I though I knew very well, and to find that I am exploring many of their thoughts for the first time. The thoughts and experiences they presented were worth knowing, and the interviewing process was stimulating.

The qualitative analysis methodology presents a very innocent outward appearance. That appearance is deceiving. The process is very demanding, almost unlimited and without definitive rules. For a person who was only familiar with quantitative methodology, it was a new challenge. Quantitative measurements and reliability were replaced by walking into peoples' minds to discover their world. Once again, it was a worthwhile experience that could not have been learned by reading books; it had to be experienced.

The excitement about the statements made by the interviewees has initiated the data analysis process. Listening to the audiotapes of the interviews, I heard themes start to emerge as agreements and diversities of opinions were presented. And, lest we forget, field notes have to be done, or the sea of material will get too deep, and too difficult to navigate. Now all this mound of written material has to make sense! The analysis and condensing the analyzed material was another challenge. Finally, the results are summarized in short statements that should deliver the message... and do justice to the entire effort.

The privilege of unlocking the internal perspective of colleagues, in a comfortable climate, opened new depths in already good relationships; as one colleagues expressed after the interview that, "if this interview was with somebody else, I wouldn't have said what I said". If there is a weakness felt, it was that individual thoughts work in isolation within this dental school, and that we lack a common goal and lateral strengthening bonds. Such bonds, if encouraged, will certainly benefit our central mission: reproduction of a community of practitioners.

The role of faculty development should benefit from the information revealed in this research, to support existing understanding of the role of the clinical teachers, and to enhance communication in order to provide a stronger global support for our central mission. Of particular importance is the development of professional and ethical values among the students as they progress towards full professional participation.

My experiences are well summed in the words of Michael Patton (1990, p. 359): "It is a grave responsibility to ask. It is a privilege to listen. Blessed are the listening questioners, for they shall gain perspective".

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Appendices A, B, and C

Letters and Ethics Approvals

THE UNIVERSITY OF MANITOBA

FACULTY OF DENTISTRY
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APPENDIX A

Dr.
Dept.
Faculty of Dentistry
University of Manitoba
Winnipeg, Manitoba

Dear Dr. :

I am conducting a study examining the concepts of clinical teachers in the dental school. I am interested in tracking the understanding of clinical teachers of their role in transferring their experiences to the students. This study will involve full-time as well as part-time faculty members representing different levels of experience. I have enclosed a description of the study which was submitted to The Faculty of Education, Ethics Committee as wellas the Ethics Committee approval.

This letter is to request your approval that the study may be conducted in the Faculty of Dentistry, University of Manitoba that will involve members of your Department. If you have any further questions about the nature of the study, I will be glad to meet with you to discuss the study.

Thank you for your consideration.

Yours truly,

Amazis N. Louka
Dept. of Restorative Dentistry

ANL/clo

Enclosures

APPENDIX B

Faculty of Education
ETHICS APPROVAL FORM

To be completed by the applicant:

Title of Study:

Clinical Dental Education As A Situated Activity: The Teacher's Role

Name of Principal Investigator(s) (please print):

Amazis N. Louka

Name of Thesis/Dissertation Advisor or Course Instructor (if Principal Investigator is a student) (please print):

Jamie-Lynn Magnusson

I/We, the undersigned, agree to abide by the University of Manitoba's ethical standards and guidelines for research involving human subjects, and agree to carry out the study named above as described in the Ethics Review Application.

Signature of Thesis/Dissertation Advisor or Course Instructor (if required)

Signature(s) of Principal Investigator(s)

To be completed by the Research and Ethics Committee:

This is to certify that the Faculty of Education Research and Ethics Committee has reviewed the proposed study named above and is satisfied that it conforms with the University of Manitoba's ethical standards and guidelines for research involving human subjects.

Name of Research and Ethics Committee Chairperson

Signature of Research and Ethics Committee Chairperson

APPENDIX B2

The University of Manitoba
Faculty of Dentistry

COMMITTEE ON RESEARCH INVOLVING HUMAN SUBJECTS

Date: July 14, 1995

Committee Reference EC 35/95P

Name of investigator: Dr. A.N. Louka

Your project entitled:

Clinical Dental Education As a Situated Activity: The Teachers' Role,

has been approved by the Committee.

PLEASE NOTE

Any significant changes in the approved protocol must be reported to the Chair of the committee for the Committee's consideration and decision, prior to the implementation of the changes in the protocol.

Yours sincerely,

Colin Dawes B.Sc., B.D.S., Ph.D.
Chair, Committee on Research
Involving Human Subjects

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APPENDIX C

Dr.
Dept.
Faculty of Dentistry
University of Manitoba
Winnipeg, Manitoba

Dear Dr. ::

I am conducting a study examining the concepts of clinical teachers in the Dental School as part of my study at the Faculty of Education towards the degree of Master of Education. I would like to interview full-time as well as part-time clinical teachers. The interview will be quite informal, and will be completely confidential. Individual participants will be assigned codes that are known only to the principle investigator. Every effort will be made to maintain the identity of the participant confidential. The recorded data will be accessible only to myself and my thesis supervisor, Dr. Jamie Magnusson at the Department of Educational Administration and Foundations. You may contact Dr. Magnusson (474-9235) or Dr. Lynn Taylor (474-6894) if you require more information on the research study.

I have enclosed letters to show that both the University of Manitoba, Faculty of Education and Faculty of Dentistry Ethics Committees have approved the process of data collection. The study has also received the support of the Dean of the Faculty of Dentistry and your Department Head. If you agree to participate in the study, the recorded interview will be kept confidential, and will be deleted from the study should you decide at a later date to withdraw. There will be no penalty if you wish to withdraw from the study. The audiotapes will be destroyed at the conclusion of the study.

I am simply interested in hearing about how you view your involvement in clinical teaching.

The interview will take approximately 1 hour. I will follow-up this letter with a short visit, approximately 10 to 15 minutes, at which time you will let me know if you would like to be involved in this study.

A copy of the findings of the study will be available to you at the conclusion of the study. At that time, I will be willing to meet with you to discuss the major findings of the study should you request such a meeting.

Thank you very much for your time.

Yours truly,

Amazis N. Louka
Faculty of Dentistry
Department of Restorative Dentistry
789-3324

I, _____ agree to participate in the study. The time of the interview will be arranged by mutual agreement between myself and the investigator.

_____ _____

Signature Date

Appendix D

Guiding Interview Questions

APPENDIX D

Interview Questions:

1. What attracted you to take a teaching role (career) in clinical dental education?

   Probes
   - clinical vs didactic teaching
   - clinical teaching and practice
   - the effects of demographic shifts on clinical teaching
   - clinical teaching and student growth and learning

2. What are the factors that shape the clinical education and experience of the dental student?

   Probes
   - practice and experience related
   - social-cultural aspects of the profession
   - interacting with colleagues

3. What in your opinion are the important factors that influence and shape the student-instructor interactions?

   Probes
   - elaborating on certain experiences
   - anecdotal situations

4. How do you view the balance between telling a students "what to do" and role-modelling practice in affecting the development of students' skills and judgement in the clinical settings?

   Probes
   - the place of role-modelling in student development
   - how teachers conduct themselves to be effective role-models (examples)
   - elaboration on particular situations

5. How do you view your role in directing and controlling the balance between role-modelling and direct instructions to students?

   Probes
   - effective clinical practices
   - correcting errors
   - guiding in procedures

6. Do you think that the structure we work in influences the way you perform your role?

   Probes
   - evaluation
   - appeals
   - practices of colleagues
   - physical environment
   - personal development

P: Well, thank you for taking this interview, if we can start by asking you about the interest developed in dental education, why did you decide to become a dental educator?

R: I was I guess an inverse relationship, I became an educator and then became interested uh when I was married we were looking to move to Canada and there was an opportunity for a job here and we were going to stay one year travel to Alberta and go into private practice and that one year extended into a couple decades now uh my rational and I guess getting interested real simply is probably an emotional thing Mary described it when we wanted to go back to grad school and her opulent statement on the issue was the best days are the days when you come home and somebody who's struggling has learned something and has taken another step forward and your face shows the joy on their face I think that's why I've stayed.

P: That's a very interesting concept. How do you view the relationship between

TA : infl

C: stage

clinical teaching and actual practice of dentistry

R: From the point of view of the teacher or the student or both

P: From your point of view as a teacher

R: As a teacher uh well I feel that it is one of my greatest weaknesses from the practice point of view because I have never had a lengthy full time private practice so I don't have that experience to draw on and I mean to state that limitation in my response as far as the relationship I think it's very important for those who teach to do uh I believe it's so important that I've spent about half the price of a house building a lab in my basement so that I would be able to do my laboratory work or a portion of my practice most of my practice actually through the years and keep my skills up so I think if one is to teach effectively I think you can go for a short period at the end of a career or something and taper off if one wants to be an effective clinical instructor one must be doing those things in one's own practice uh

T: link

where the economic benefits and talent is applied to be able to effectively address that body of material didactically technically spiritually and emotionally so that can be passed along to the students and I fully convinced that students don't miss the sanction of those who practice and teach and those who teach it's the latter I have so much put in quotes pretty strong but not noted good

P: You just mentioned the didactic teaching and the practical teaching can you elaborate on the relationship of those two a little bit more.

R: From my prospective I think they are very closely intertwined I think that one certainly has to share didactic information relative to the practical I've bounced around through my career thinking that one needs the knowledge before the skill and vice versa I'm not sure that that there is a real answer to that one any longer uh I think probably some blend of actual use and didactic understanding is very valuable uh I like

T: link

the idea of an introductory of clinic kind of program the program is existing first year I don't know the details of that program but the idea is important in my mind and students get to see experience and be a part of the things about which they are learning so I think there is a very tight interplay between the two I don't know if you want to go this far with it but my own personal experiences in that regard I think I am a relatively weak didactic teacher see myself to be a reasonably strong clinical teacher and I think I do my best didactic material with a play when I'm actually in the clinic I find it much more of a struggle to be aroused emotionally to a sufficient degree in lecture to deal with all the details and I've said this to you before I think you are exceptional in ability to deal with the details of the didactic level and get all the pieces together coherently I don't think many people are gifted with that talent.

P: Oh thank you first comment that's directed to me

T: link

R: I think it's true I've said it before this is not the first time I've said that to you.

P: How do you view the student growth towards the profession during their clinical years in dental education

R: I am a bit of a subscriber to a colleague's philosophy from another faculty in university who states that it is impossible to teach anything it's only possible to inspire people to learn and that teaching is an emo education is an emotional experience I increasingly come to believe that the maturity towards the profession is a spiritual process and I don't speak now in religious terms although I am quite comfortable with those as well but that one develops a spirit of a professional and that spirit can be a spirit that's well focused around economic benefits personal ego status two fancy cars and a cottage and winter holidays and those kinds of things with very little substance about serventhood that person would fit Allister MacIntire's concept of the

T: learn

E: develop

demoralized self where there is not much social content to that person one sees oneself as an individual I think those kinds of spirits develop in faculty uh I would wish to be a part of a different kind of system where spiritual self develops and students see themselves as an ever-growing creature who is focused on servanthood it is an over simplification but if that's well taken care of the details of the educational process take care of themselves I think personally as a spiritual servanthood of excellence will seek out the technique for finishing margins on a crown I don't know whether I talked around it rather than at it but

E: dev

P: Well there are certainly different positive views there.... In your opinion what are the factors that shape the dental students learning and development of experience during the years of clinical learning and practice within the faculty clinic

R: I'm going to have to think about that a number of things bounce at once and

I'll have to sort of think about it
P: It's definitely a multi faceted view
R: I would probably answer this one much differently if I had to time to think and more detail about it but I think there are a number of factors that play into this uh I think students arrived here with social image of the health professional and what that person is supposed to be I think they have images of professional people whilst the lay social personal pictures first as a professional social patterns may represent only one dentist or a variety of people depending on their particular circumstances so I think they're waning to the issue of their professional development format in which they address this material I expect that we can modify but we can't substitute it so I think that they bring something with them and of course even shows in their background is their basic social ethical religious cultural whatever package so there's alot that comes into the picture to start with so we only have the potential to deal

c: stage

with a modest in a modest way with what they are but they could in a very minimal way and I think it could be reshaped but not replaced the shaping process in my mind would be based on what happens among their peer group I think peers probably have a reasonable effect on them I don't think it dramatically shapes them but I think it affects how we shape them they can define for each other what kind of people we are and if there happens to be a person who finds a very positive view of us despite our weaknesses a student can be shaped in part by that interpretation so we've moved from this way far background to a closer background in society to peers making the change I think secondly the professional academic milieux here makes a difference we keep them far too busy in my judgment and so there very busyness shapes what they become we tend not to be reflective we tend to be active it's a western characteristic not a dentistry but perhaps extreme in dentistry that we deal with the busyness of life and I think

c: stage

cc: coll

that shapes them in a great way what I think in fact is the core of our effect on them is who we really are not who we think we are and not who we pretend to be I think we see each other very well for what we really are over such an intimate relationship as we are standing in front of them hour after hour day after day our real core comes out and so my guess would be that the shaping of the student is a real moulding of their package which was brought to the university system modulated by peers and the general system of the faculty focally altered by those of us who they particularly find negative or positive and I think there are both models in most student situations and characteristics that we bring forward serve as ghosts if you will whispers across their shoulder that certainly in my own professional life is contingent for several decades now to remember what this wonderful prof did when I was a dental student or what the guy did that I didn't like so I think we mould them by our real personalities to reshape their

TA: us

TA: infl

structure

P: You mentioned quite a number of interesting points let's try to take them apart in a few of those points you said the students who view us who we really are I think that brings into play the student/instructor relationship

R: very much

P: and if you want to elaborate a little bit about the student/instructor relationship and it's appropriate if you want to mention anecdotal instances

R: Well I seem to be at a middle age stage of life where I focus most often on my failures I think I believe from observation that's more fact than my state of life than anything else right now so my first thought is a negative I'll try to produce a positive one as well but in my own life experience I recall in the second year crown and bridge course having a student present what he thought was a very creative idea that I think in fact was most inappropriate when we were trying to teach an initial preliminary technique it

TA : wkn

L: Comm

wasn't time to be expanding with new ways to do it it's more just a basic thing and go from there and his effort was I think a conscious effort of a pessimist directed youngster and the evil that I wreaked upon him was that I really embarrassed him publically in front of the class and I later that day caught him in the hallway after recognizing it and made an apology I don't think that person has ever forgiven me for that and it's tough for me to deal with his forgiveness or not forgiveness what it is for me to deal with is in fact my relationship with the student and I've denied myself the opportunity to mould him in a positive way by putting such great distance between us over what was in many ways a trivial issue and I just recently spoke to that person who is now a practising dentist in hopes of attempting to recover some of that relationship so I think we can put a distance between that completely eliminates our ability to have a meaningful positive influence maybe I certainly think we can wipe out the

L: comm

R: comf.

potential meaningful positive influence on the positive side however that relationship I think is best on and unlikeably I've had a few of those situations where faculty member demands intense excellence from a student in a way in which that student is made to address their own weaknesses in many aspects of their professional life not just a technical weakness but weakness of spirit and determination or whatever and to see that person move through that valley to a positive experience in which we have been the guiding force the pillar that is cloud by day and fire by night to get through the dessert I don't know why I'm picking that Judeo-Egyptian example at this point but I think those are ones in which our influence our personal influence is great and I believe some very isolated moments like that can leave us where we transfer to them that which is essentially good in us and I don't think that has very much to do with specific technique or knowledge although they certainly are important to the

L: exp

practice of dentistry and to the personal development of that relationship is probably terribly critical and for myself I think there have been too few of those positive instances; one's life to pass along

P: Is that because you are modest or....

R: Others will have to judge that but I feel that I have denied myself that opportunity seeking rightness before love I'm working on that

L: comm.

P: Well mentioning the point of authority I think that opens another field that we need to discuss how do you view the balance between let's leave the word authority aside a little bit and translate into day to day action as it's done on the say on the clinical experience that little grading card that has to go in at the end of the day as commonly referred to as evaluation between your actual intensity in teaching and seeing that the student has learned and this formal part of that relationship that's translated into a grade card how do you view the relationship between

those two.
R: If I may be permitted I'll pick up on the word authority just for a second if I can
P: I tried to mask the word authority
R: in terms of the word authority and I don't want to play just semantic games but I think it is pertinent to this discussion I think that authority in the richest sense of that word is probably a wonderful thing I author I author something I write it I bring the thing forward and share by authoring I don't just think about it I share it I get it down somewhere so others can have and so the sense of authority where my authority exists because I am good as a human and good as a prosthodontist is possibly the best authority there can be and that's that ghost I spoke about or the pillar of cloud that leads looking over the shoulder whispering always I think that's very important in terms of the evaluation system verses teaching I wasn't supposed to mention any names but if I may I'll mention a positive one I don't know if

A: exp

that is good or bad but one of the first people that I had come in and look at our program was a prosthodontist from London, Ontario some years ago and his biggest criticism of our program was we didn't separate teaching from evaluation an I try to be fairly careful to do that in the didactic in the technique portion of our program om there is any sense and that's really nice because you can separate the two you know we're budding it today and then we will stop somewhere and sort of see how well we learned it and I think that is a very nice situation in the clinical sitting I found it much harder to do it's very difficult in my mind to contrive good evaluative stages in a clinical setting which are meaningful in evaluation and which are not so contrived that they don't really test anything so we've ended up still going through and having a day to day evaluation everything counts I think an argument can be made for that in practice everything counts I think there is a reason to argue for that but I think what

T: learn

A: eval

we do is weaken ourselves as educators as we increase evaluation I think however we also weaken ourselves as evaluators to be gatekeepers as we separate ourselves for evaluation for education and it's a very difficult I would suggest perhaps a team level may make this a possible task we strive to be both the advocate for that student's growth into the profession and the gatekeeper to deny society the penalty of having incompetent people graduate I don't have any answer my own experiences I veer far too much on the side of gatekeeper through my career and I would suggest that most of my colleagues have veered far too much as advocates.

TA: gate

P: You've mentioned earlier that the students tend to shape themselves after the models they see in us and dental educators during the clinical years of learning how do you feel the clinical teachers in general conduct themselves as being role models for the students do you see that positive image imminent or the gatekeeper image more imminent or you can

see a reasonable blend between the two
R: I don't have a terribly positive view of the majority of clinical faculty I hate to say that I was asked so I'll be honest...
P: Well I think the theme is to be honest that's why the process is confidential
R: That's what I'm doing so I don't have a terribly positive view of most of my colleagues in that regard and I think that my lack of regard is based on the lack of discipline that I see in my colleagues in keeping themselves focused about the topic they're teaching and secondly the lack of attention to the patient and the student I think what they model is a person who is taking care of paper work and neither teaching nor evaluating to a great degree I see very few times when my colleagues sit down and I'm not now speaking of my crown/bridge colleagues I'm speaking of my colleagues in general but I see far too few occasions in which people sit down and demonstrate and I guess it leads me to

TA: wkns

question how much can those people sit down and demonstrate and in terms of evaluation I see far too few times in which there's feed back from students reflecting the basis for the evaluation whether it was a quiet note on a card in the corner or a silent note on a card in the corner instead of candidly facing the students saying based on these criteria I've judged this to be a discalibre for these reasons and so I would have to condemn my colleagues fairly generally in that category and I was supposed to be positive and I'll go and question humility I won't be humble very much right now but I think I may do that one better than alot of people do well I hope I do again I'll be honest I think that's one of my strengths that I can demonstrate and I can look them in the eye I'm also scared.

A: eval

P: Ok we've been speaking about the student and their experiences and the instructor and their abilities and what they can do and what they cannot do there is an area in between that links the two

together which is the patient who is receiving treatment as this kind of experience development what is your view on the interaction between student and the clinical teacher regarding the patient and the patient's welfare who is receiving the treatment

R: I find myself condemning my colleagues again but I think that there's a general tendency to treat the patient as an object and to treat the patient relatively unpersonably I don't find many occasions in which I see colleagues sit down and introduce themselves to the patient deal with the patient and model a relationship for the student that reflects respect for that patient and I believe that exact duty to model for the student a relationship with the patient which reflects not so much the sense of autonomy the sense of value neutrality and those kinds of things that are typically talked about that is the underpinnings of professional health care ethics the four kickers that they talk about in medicine two of which are

TA : wkn

C: needs

autonomy and value neutrality and I don't see that as being the problem with modelling rather I see a goal being one in which one interacts with the patient in faithful relationship such that one does not necessarily need to try to be value neutral or to try to leave autonomy to the patient and that doesn't mean that one dominates the patient but that one has such a relationship with the patient that one can share one's position one's guidance one's beliefs one's ideas about treatment very clearly including values you can't not share them anyway but that we can do that follow the student in enough of a relationship that we can model that I should defend my colleagues briefly by saying that the discipline of which I am a part of probably lends itself best to that because we have people for repeated appointments and it's easy to build that relationship under those circumstances so I recognize that there is some differences in the disciplines in that regard but I think it's important that we model that and I

c: needs

don't think in general it's been done as well as it should be
P: You mentioned earlier the point of keeping the students far too busy at times and you also mentioned lately the relationship between the student instructor and the patient and the patient almost if I read your comment correctly might be at a disadvantage situation because of being an object for the treatment in your view how do you see this relationship could develop to a positive relationship where the student can learn more about how to respect the patient and deal with the patient in a more human way because your earlier comment seems to be negative on that view how do you see the road to making this relationship a more positive relationship that has the student develop professionally as a member of the profession
R: The question started with busyness in relation to this issue and I think it's an element that's very important in that regard and I would suggest that we should

have the students less busy I think we should probably not have them occupied more than 80% of our week they should not be busy more than four days a week now that spread over five but that they have a day in which their agenda is not set by us or they have an agenda that they can set an opportunity to set an agenda which now they do not have that would in itself permit them the opportunity to think and balance with that there needs to be a discipline on our part to be available at times in which they can come to us and deal with their specific needs regarding that particular patient as they perceive them to arise or we can call them to see us to see us as we perceive patients to arise as you are aware our group makes a point of being around on the lunch hour in the laboratory so that students can come and see us during that time period and that is the only time that they have that they can get to us not so much that we're busy but that they're busy so I think that would be significant I think secondly we could do more to discipline

c: stage

ourselves in the way we bracket our clinic time we've attempted to do this most unsuccessfully although I think it's been much better than not having tried is to bracket the time available in clinic for them to help them set that agenda and we've attempted to have 2½ hour clinic for our students we've attempted to have them patients seen at a quarter after the first hour and dismissed at quarter to the end of the last hour we've now got it so they are down within the hour rather than 3½ hour clinics and by doing so we have I believe to a minor degree shifted the focus so that two things have happened one they do take a bit more time to interact with the patient and it also has made it more realistic for us to sit and communicate with them about the experiences of that day I do believe it's been modestly successful it certainly is not wonderfully done yet but I believe if the faculty in general offered them that way that would be a narratively enhance the ability to respect the patient and with that reduction in busyness with the

To learn

c: need

staff student ratio to permitted time to interact with students I think we may be in position where we could offer that our group again has been pretty fortunate with staff student ratios which I believe might change but where as typically happens in your discipline there are six or seven students and patients per staff member the staff member busyness is also a detriment to taking the time to interact with the student in that regard and lastly I guess we maybe should be a little bit more socially interactive with our students so that they get a chance to see us in a non-formal staff student relationship there have been some administrative criticisms of times when those have attempted by individual faculty members and that being the case one tends to back so I see those in ways in which we might help them see the patients differently and all of that of course blended with those earlier comments of us modelling pattern sit down with the patient sitting above me face the patient and talk to them introduce

C: needs

myself to them before examining them ask them about their desires something I would like to hope that I do and I believe for the most part I do as a jones I was asked to look at this upper tooth in the front I am aware of that but I like to hear about that or any other concerns that you have before I look at the mouth often the patient is so unused to that question that they don't know how to answer and I have to explain I'm not asking anything unusual I just want to be sure when I look at your teeth I'm looking at the things that are important to you I do believe that sort of modelling will make a difference in how the student perceives the patient and their responsibility toward but can't be busy

C: needs

P: You mentioned the social image of the profession and the social interaction with the students that you just mentioned lately how do you see those aspects as part of the student development while they are learning in the school here can you elaborate a little bit of that point

R: I don't think I have alot to offer in that regard I intend to avoid associating with dentists not that I'm anti-dentist it's just that I think life is far too rich to restrict oneself to one professional group and since I have the joy and it is a joy of being around a number of dentists a great part of my waking hours when I have the option socially I usually elect to mix with other people that's not meant in a condescending kind of way just the fact that I would like to blend my life more broadly than that so I don't have alot of social interaction with the dental profession myself outside of the professional environment although there is some but I do believe that to the degree that we interact with the students we serve as role models and I think we can even do it in the faculty in an informal kind of way where we find out something about their personality is their boyfriend in Thunder Bay their mom's house or whatever and draw out from them the sense that they are bigger

cc: peer

E: dev

people than that we had a little program that is a very weak way of doing it almost but fun for me we have students read a novel in a third year course and get a bonus credit for it it's an optional thing some years we've had 100% subscription and this year we have 30% subscription and tomorrow I'll be talking to a student about Dicken's Bleek House last week I talked to a student about The Crucible and the week before Gapler it whispers to them that life's bigger than dentistry but it's not an area that I've been very successful in I have very little that I can offer in terms of technique it's important I just haven't developed it

P: Do you feel the importance of ...

R: No question about it and I have worked at it and as you know I used to have students in my home but I've been chastised for that because I didn't have everybody in my home and I didn't have them in equal quantities and therefore I was told that I was not so fair

P: Social discrimination

cc: Coll

R: Yes and of course I favoured the weak students and I was told that wasn't fair to favour one student and so I haven't been doing maybe I won't comment further

P: You just opened a very important point here you said you favoured the weak student would you like to elaborate a little bit on that from certain actual experiences and anecdotal situations

R: Well all through most of my career here I would deal with students who were having a personal struggle I would often have them into my home for a meal my wonderful partner was very good about that and she's very user friendly and warm mom kind of person and so we'd have them in for a meal and have them in my lab and do the work in my own laboratory and I think with my circumstances as one of the most intimidating faculty members I think it broke a barrier to find out that I did not eat children for meals and those kind of things you know I was reasonably normal at home that I had a good family in spite of how they had perceived me previously and I was able to

cc: peer

I think transfer the strength of my personality to be their defender rather than their enemy and so forth yeah I mean I've had experiences like that and I did that for a number of years and four or five years ago I had a number of encounters with administration suggesting It was an inequity in that and I should not pursue that further and I choose to respect it I don't know if they can tell me what to do on my own time but I did choose to respect that because I want to be a part of the system and team player and I found it more difficult since then to deal with that so to get back to the original question I did that for the weaker student the student who had a support system outside the school the student whose father was a prominent dentist in town and had plenty of financial resources and all these other kinds of things I did not pursue all other kids when I spent time I can think of one of those people who is struggling as well I had to do it in the summer session one year and following through

W: corr

the summer not out to get those people either this particular people need that and did it but for the most part it's people who were socially disenfranchised in this environment and that combined with struggles in either didactic or technical portion and I simply try to offer to them a gift of my spirit to say my spirit goes with you and this struggle and I thought that maybe I was levelling the playing field but according to other interpretations I was not so I suggest there is a place for levelling the playing field how faithfully one does that I wouldn't tend to judge I'll let other people judge but I think that's a very important thing to do a native access program is an example that people who are coming from incredibly different cultures I think they deserve some favour they also need to be made to meet the standard of both so I help in getting there.

T: Supp

P: This is the parent aspect and the gatekeeper aspect together

R: It's caught again you can't get away

from it I don't think in this environment I wish we could

P: Well speaking of the environment and speaking of the gatekeeper and the helper and the protector aspect we live in a world that everything has measurements and has to meet certain measurements and we know the regulations in the university that every grading system has to have certain components in it and has to be introduced in a certain way and then this is protected by an appeal mechanism for any situation that seemed to be unfair could be appealed what are your views of those administrative protectors and administrative structure in relationship to your duties personalty and performance as a role model and a clinical teacher do you feel those mechanisms enhance control improve barriers wherever that takes you.

R: As you know southerners usually are anecdotal in their responses I'll respond first and I hope meaningfully by saying a little line from a little bit of stuff from an old top southern comedian a fellow by the name of Brother Dave

Gardner and he was kind of an eclectic off the wall quasi trashy most deeply reverend human philosopher or something if that mix of things can go together and I think it can as southerners we are pretty straight creatures Brother Dave was telling a humorous story one time something about this guy was running around making interviews and having interviews and he interviewed this guy and says what do you do for a living and he said well I work on Volkswagens he said well how do you do that he said well I work on them in the nude he said you work on them in the nude? Volkswagens you work on in the nude he said that's immoral he said no if we were all moral we could all go around in the nude and the point I wish to make from that is that if we were all moral we could all go around in the nude and if we all were faithful to each other students as they address faculty and faculty as they address students and students and faculty to each other and all to society we wouldn't need the rules so I recognize

R: conf.

that there's a need for rules and I respect that need and I recognize that because of those kinds of things there is a need for quantification that portion of the question I think we suffer from a litigious society I feel most strong feelings about the fact that we do very much to protect ourselves in comparison to serving a patient and our students I believe that's increasing I have fear that society will have to deteriorate substantially before that pattern is changed I greatly wish that it could be and so we do much that is based on self protection as a part of a litigious society and should be expunged from society in its entirety if one could the second aspect of it that I would perceive would be the need for quantification as a means of measuring our performance and I do believe that there's a place for numbers in that kind of a process where I have an opportunity to look at how well I taught by observing the response of my students collectively on a given questions and also individually and try

AD: prot

TA: us

859 to balance that relationship against
860 other standards and I may even be brave
861 enough that I might back up on this on
862 another day but as I sit here now I would
863 suggest that maybe the goal standard is
864 how I feel about the student and I always
865 feel about the student the intuitive
866 sense and to be able to match the numbers
867 of that relate to students that reflect
868 student performance against my intuitive
869 sense gives me an ability to judge how
870 well I'm doing as a faculty member and
871 how well those who prepare the student
872 for me in a prior to faculty do their
873 jobs those are just that's a valid way of
874 dealing with it but I would suggest that
875 that is a reference point which should be
876 set against their goal standard their
877 goal standard being intuition and I would
878 define intuition as a dictionary does
879 Intuition is not some depreciating
880 feminine characteristic of unrealistic
881 behaviour Intuition I believe in
882 Webster's consulted will be to arrive at
883 a conclusion without being consciously
884 aware of the reasoning process and

TA : 45

interestingly I think when we do intuit and judge students on that basis our judgments are remarkably alike across the faculty there are marked exceptions because somebody has an unusual experience but for the most part they are true so I think there is a place for quantification in that sense the last piece in that regard I guess maybe two more is that in terms with my relationship with student in the job of teaching I think it mostly gets in the way and I think if we can do it where the evaluation was of me and the system and the student were not evaluated in that setting I think I would do alot better job I'd conclude by quoting John Sully who was Dean at Maryland when I was a student there he once wrote an article on tripartite system of evaluation and discipline of the profession in essence what he talked about was that we teach and the dental association assesses and that those two walls are rather distinctly separate and that we might do a formative process to assure ourselves

A: eval

that the students are prepared to face the dental association but the dental association would do the actual testing some do testing I think there's alot of virtue in that we become very different kinds of people we become very true advocates evaluating only to help not to judge

P: Evaluating to help not to judge tell me more about that

R: Well I mean I think we do that all the time we do that with our children constantly and we don't make judgments about whether or not they get to stay in the family and we constantly evaluate them and that evaluation is to make them better creatures and it's so overwhelmed with love and caring and security that they're allowed to go through their adolescence and rebel viciously against us and probably literally hate us at moments and not be rejected in that process however if there's anybody who's every dealt with (name) as a child or (name) as a child will know you make standards clean the kitchens for one of

A: eval

a: stage

two ways well or over and there is not alternatives there is one chute to get out and so the evaluation is to help them read the standard of excellence but not to be a judge in the harsh sense of the word but to be an evaluator as a loving advocate that still means that there somewhere has to be an end point but it might well if that were separate from us it also would change our responsibility our national board may be doing that already but us doing it may be a matter of discussion I'm on the line where the dental association evaluates my student very much like an advisor is to a student who is completing master's degree the advisor is on the line as well as the student.

P: How do you see this evaluation process helping the student to develop professionally is it an appreciated process or students might have negative feelings as you mentioned about the growth of the children and how that they might hate us as parents for it but you're sure as a teacher that that helps

963 them develop how do you see the
964 relationship between their professional
965 development and the process of evaluation
966 R: I think that the last few years at
967 least it has occurred to me and I've
968 spoken about it in formal ways I've
969 thought about writing about it and I
970 believe that we all go through
971 adolescence and any experience of subsidy
972 lengthy growth form of adolescence our
973 children are very malleable when they're
974 tiny they don't have any choice they do
975 it exactly the way we say without
976 questioning they go and mature they begin
977 to show fascination and running off with
978 out ideas but not challenging us and then
979 they move to an adolescent stage where
980 they challenge us fight us be against us
981 resist us and also they become very much
982 like us I think for my children's sake to
983 their detriment but none the less that's
984 what happens I don't think it very good
985 for dentistry they come in first year
986 they are afraid they're helpless anything
987 you say they do it without questioning as
988 they progress through in these stages and

c: stage

e: stage

there are some repeated aspects of that of course when they get a client for the first time but in essence they accost us and mature and all frequently through the years I've heard people talk about fourth year students and they were such a nice class last year why'd they all go on the pile what's gone wrong and there is a fairly negative feeling often about fourth year students and their attitude about dentistry tell them the last few years they believe that that's their adolescence that they are then beginning to separate themselves from us to take the dental experience the dental professional traits whatever but might be described as and making them their own and in the process they have to challenge me I'm the only thing they've got is us in this case that's all they've got is to challenge us and to address their relationships by trying things differently than us and fighting us and disagreeing with us I think we should accept that with some ecronimity we should think it's okay for them to fight

c: Hafe.

but as we do we should do just as we do with our children we should have an inner confidence based on our own abilities such that we can stand that and be just like your basic Egyptian and German mother you clean it one of two ways right or over and then we don't back off our resolve recognizing the stage of which they are going we don't need to cater to all their little desires we can let them beat against us but we need to stand it still needs to be this good while you're here it still has to be this good while you living in the house you still want to clean your room while your working in crown and bridge in dental school you still have to satisfy me to get your mark and that resolve needs to be there with gentleness and acceptance of that need to rebel I don't if I've got to where you want to go or not

P: As a closing remark how do you describe the idea for the most effective clinical teacher in our setting at the school here

R: The most effective clinical teacher

c: Hafe

is the person who has developed their technique knowledge their skill and their knowledge to such a degree that it is operated at a relatively low level of consciousness they don't have to think to do it and who has such joy in dentistry and love for the student that they infect the student with that joy and I'm not supposed to name anybody but there is one very senior person who's been around this faculty through the years that I think models that as well as anybody probably the toughest guy to get a crown seated under is the guy that's most loved he can do it very well and he is determined to love every student I've heard him many times say I had a fight with a student I have to make myself like him I have not succeeded in that as well in the past but I confirm to myself that I am now working and I think making progress to be more like that in the future in essence I guess I have decided to sacrifice evaluation for teaching

P: Thank you very much

Appendix F
The Coding Grid

Category	Definition and Prototype Example(s)	Code
Role Modelling (GLOBAL)	The clinical teacher acts as a professional role-model for the student; interacting with patients and students.	R:
Specific Categories		
Rapport with Patients	The clinical teacher demonstrates the importance of rapport with patients. **Prototype Example:** "We should also get to know them (the patients) better and relate to them" (FSDP 700-702)	R:rap
Sets example of good practice pattern	The clinical teacher sets an example of good treatments provided to patients. **Prototype Example:** "... from the point of view of practicality, I think that somebody who works in the trenches in the morning and comes and teaches here in the afternoon, ... will instruct clinically the proper and straightforward and the simple way of a successful treatment." (FDRP, 431-438)	R:treat
Developing comfort and respect with students	A comfortable relationship between the teacher and the student is essential for a positive learning environment. **Prototype Example:** "If there is (...) a (...) you know, a great deal of comfort... just feeling comfortable, they will be able to ask you for help (...) ask you for guidance..." (FSDA, 194-208)	R:comf

Category	Definition and Prototype Example(s)	Code
Effective learning environment (GLOBAL)	The clinical teacher shows concern for student learning and for the quality of treatments provided by students.	L:
Specific Categories		
Enthusiasm	The clinical teachers' enthusiasm is reflected on the students' learning. **Prototype Example:** "I feel that the best thing, the thing that I have to offer, is enthusiasm for knowledge and life-long learning, and if I can instill that in them, then I think I have probably done the best..." (FDST, 50-55)	L:ent
Effective student-teacher communication	Student-instructor communication is focused on providing good patient treatments. **Prototype example:** "... maintain an emotionally cool relationship and just deal with nuts and bolts of things, going (to the student) and saying: you know what you want to do today?... your response is okay ... make sure that such and such is okay ... make sure you look for those things..." (FDST, 652-668)	L:comm
Clear and high expectations	The clinical teacher sets clear and high standards for treatment and learning. **Prototype example:** "... if reasonable clinical procedures are carried out recognizing that this is an educational institution where perfection or a high standard is professional ... then clinical experience is well done ... and patients' best interest is still served..." (FDRA, 116-128)	L:exp

Category	Definition and Prototype Example(s)	Code
Teaching Style (GLOBAL)	Teachers describe their views on how they perform certain aspects of their teaching role.	T:
Specific categories		
Individual attention and support	Direct observation and help for students while performing a procedure, giving them support. **Prototype examples:** "... I really mean time for more practical experience ... time I need to be sitting with the student in the clinic ... just work with one ... show and do ... for the struggling student or the unique case ... " (FDSP, 80-94) "... you have to be interested in what is going on, ... I think you have to be there not just to take responsibility, ... to make sure that both the patient and the student have a good experience ... " (FDSH, 721-734)	T:supp
Link classroom and clinical teaching	The teacher links what is taught in the classroom, to what is performed in the clinic. **Prototype example:** " ... I think they are very closely intertwined, I think that one certainly has to share didactic information relative to the practical ... " (FDRP, 67-70)	T:link
Stimulates students' learning and thinking	The teacher uses strategies for working with individual students' learning needs. **Prototype examples:** "... realizing that the clinic is a research environment, ... because you don't have all the answers, and you do your best ... with an enquiring mind." (FDST, 707-727) " ... I would like to tell them what the problem is and let them try and correct it, ... I like to think to try and balance out dealing with problems ... " (PDRP, 379-389)	T:learn

Category	Definition and Prototype Example(s)	Code
Avoid style of negative *role-model*	The teacher uses personal learning experiences to avoid negative instructor behaviours. **Prototype example:** "... he'd just tell you keep trying and keep trying ... and at the end it was really no help ... in the back of my mind I think of that and I wouldn't like to duplicate that .. wasn't a role model to aim for, that's for sure ... " (PDRP, 166-187)	T:neg

Category	Definition and Prototype Example(s)	Code
Authority (GLOBAL)	The clinical teacher uses professional and administrative authority to guide and evaluate students.	A:
Specific categories		
Power of expertise	The teacher derives authority as an expert in a clinical field. **Prototype example:** " ... I bring something forward, I share it ... I bring it down so others can have ... the sense of authority exists because I am good as a (specialty) is possibly the best authority there can be ..." (FDRP, 347-354)	A:exp
Handling conflict and giving directions	The teacher handles confrontations with students and gives direction.. **Prototype examples:** "... if I find hostilities like that, and this happened not too long ago, I have to move back because otherwise I find myself wearing myself through..." (FDST, 227-231) "... students don't like to be asked questions, I say that is crap, because you have got to find out what a student really knows, or why did he do this ... you've got to be careful with your choice of words, you've got to be sensitive to the patient, but there is no reason why you can't grill the student ... " (FDRA, 826-835)	A:conf

Category	Definition and Prototype Example(s)	Code
Evaluation	The evaluation process can contribute to or conflict with learning. **Prototype examples** "... I like to think it is easier toaccept a grade if they've got an explanation for it ... and think back and say well, yeah, I had this, that's true I'll have to make sure that doesn't happen next time." (PDRP, 353-365) "... I find the grading quite a demeaning process, either the individual has done the job adequately, or done it very well, or you share the blame ..." (FDST, 355-358)	A:eval
Requirements	The teacher views clinical requirements as support for learning or a compromise for patient care. **Prototype examples** "... It goes a little broader than that, a little deeper than that, not just by the mere fact of setting numbers, I think it goes to the fact that it is the standard of care..." (FDRA, 390-394) "... it seemed that a person (student) has one eye on the requirements, and that is the big eye, the small eye is the patient care ... " (PDRA, 815-817)	A:req

Category	Definition and Prototype Example(s)	Code
Dealing with weak students (GLOBAL)	The teacher comments on the weak students' need for guidance, for more time, and the consequences of these needs.	W:
Specific Categories		
Correction and guidance	The teacher attempts to help the weak student to become interested in the learning process. **Prototype example:** " ... they are here, this is a learning institution ... that is your job as a student ... you are charged with a responsibility ... all I can do is to be like the server and offer my platter, ... and say these are the things I am excited about, to you want to try a piece? ... " (FDST, 250-264)	W:corr
Time for student learning	The teacher is discontented with the effort required to help the weak student. **Prototype example:** "... you are spending all the time remediating, helping a poor student, I believe that we would be better off to put our emphasis on improving the standards of ten students than trying to push through one... " (FDRA, 514-518)	W:time
Dealing with incompetence	The weak student is made aware of the consequences of incompetence. **Prototype example:** " ... I think they should be told that for their sake as well as for the sake of dentistry and the public ... we should not be turning people out who don't have the ability ..." (FDRT, 60-66)	W:inc

Category	Definition and Prototype Example(s)	Code
Ethical and professional growth (GLOBAL)	Developing professionalism includes developing concepts of service and values.	E:
Specific Categories		
Developing Professional ethics	Professional growth is a process of internalizing professional values. **Prototype example:** "... the maturity towards the profession is a spiritual process, and I don't speak now in religious terms, although I am quite comfortable with those as well, but one develops a spirit of a profession ... a spirit of servanthood ... " (FDRP, 117-122)	E:dev
Values and economic benefits	Students may develop negative ethical values related to economic benefits. **Prototype example:** " ... that spirit could be focused around economic benefits, personal ego status, two fancy cars and winter holidays, with very little substance ... " (FDRP, 124-128)	E:val

Category	Definition and Prototype Example(s)	Code
Developing self-confidence and communication skills (GLOBAL)	The teacher reinforces and supports the professional development of students to enhance self-confidence and skills in addressing patient needs.	C:
Specific Categories		
Supporting students' development	The teacher gauges the students' ability and helps them as needed. **Prototype example:** " ... there is no point in saying get in there, unless you find out first if they have a good hand, ask them first if they have done one of these before..." (PDRA, 386-391)	C:dev
Stages in development and attitude	The students' attitudes change as they are developing. **Prototype example:** " ... they (the students) come in first year ... anything you say they do it without questioning, as they progress ... they mature, and all frequently you hear people talking about fourth year students, and they were such a nice class last year ... and there is a fairly negative feeling ... that is their adolescence ... " (FDRP, 982-998)	C:stage
Development of communication skills	The student develops the skill to address people's needs to help provide good treatment. **Prototype example:** " ... I would ask them about their desires ... I would like to hear about that and any other concerns that they have ... I look at the things that are important to you ... " (FDRP, 623-633)	C:needs

Category	Definition and Prototype Example(s)	Code
Developing a concept of a community (GLOBAL)	The students are a group of peers, developing moral support and learning collectively, as they grow towards the professional community.	CC:
Specific categories		
The class as a community of peers	The students, as a group, develop a sense of friendship and offer one another support. **Prototype example:** " ... for the most part it seems (the students in the clinic) to be a fairly friendly atmosphere and students always seem to know what their class of friends are usually doing ... I see them quite often giving each other moral support ... " (FDSH, 385-389)	CC:peer
Collective learning	Students learn together to develop a sense of dealing with success and failure. **Prototype example:** " ... if the learning process is seen as a collective thing between you and your colleagues to do things together ... pat each other on the back when it is good, and support each other and say okay, we've got to do it again when you don't succeed ... " (FDST, 600-607)	CC:coll

Category	Definition and Prototype Example(s)	Code
Teachers' views on different aspects of teaching (GLOBAL)	Teachers indicate aspects of their interest in becoming teachers, their views about weaknesses and responsibilities towards the profession.	TA:
Specific categories		
Developing interest in teaching	Teachers indicate influencing factors in making a decision to become clinical teachers. **Prototype examples:** " ... I found that I learned a lot from part-time people ... when I say a lot, I mean the practical aspect, ... the reality, so I decided to be that type of person ... " (PDRA, 11-20) " ... sharing information, I mean, I enjoy doing that, ... I think the idea of explaining yourself is a real challenge ... and especially at a level you can communicate that ... (FDSH, 14-20)	TA:infl
Awareness of weaknesses	The clinical teachers express opinions about their weaknesses and those of their colleagues. **Prototype examples:** " ... I think of my own failures that from which I have been able to go back and assess well what is my motivation for doing things, ... what is the process, and why I wasn't able to accomplish it .." (FDST, 98-103) " ... I find myself condemning my colleagues again, but I think that there is a general tendency to treat the patient as an object, and relatively unpersonally ... " (FDRP, 474-478)	TA:wkns

Category	Definition and Prototype Example(s)	Code
Peer support	The clinical teachers express opinions on peer support among colleagues. **Prototype examples:** " ... there isn't that easy a place to meet with people and just talk about whatever is happening in your life ... " (FDSH, 821-823) " ... I was in an unusual set of circumstances and nobody was going to stand up and say that we have a problem ... " (FDST, 289-291)	TA:peer
How do students see us	The clinical teachers express views on how their role is seen by students. **Prototype examples:** " ... I don't know if it would be necessary if somebody to come up to you and say ... Oh, this has been a great session ... " (PDRA, 229-230) " ... who we really are and not who we think we are or who we pretend to be ... I think we see each other very well for who we really are ... " (FDRP, 210-213)	TA:us
Professional Gatekeeper	The teachers' role is to protect the public from incompetent practitioners. **Prototype example:** "... we serve to be both the advocates for the students' growth into the profession and the gatekeeper to deny society the penalty of having incompetent people graduate ... " (FDRP, 396-400)	TA:gate

Category	Definition and Prototype Example(s)	Code
Teacher and the administration (GLOBAL)	The teachers describe their roles as administrators and their relationships to the faculty administration.	AD:
Specific categories		
Protecting yourself	Teachers' activities may be dictated by self-protection. **Prototype example:** " ... we suffer from a litigious society ... we do very much to protect ourselves in comparison to serving a patient and our students ... I greatly wish that this could change ... we do so much that is based on self-protection ... " (FDRP, 834-844)	AD:prof
Recognition of good teaching	Teachers' views on the recognition of good teaching. **Prototype example:** " ... I think good clinical teachers are not recognized the way they should be ... a good clinical teacher does not get any brownie points..." (FDRA, 967-970)	AD:recog
Reflection on curriculum changes	Teachers' views on curriculum changes and their effect on student learning. **Prototype examples:** " ... It's a new concept, and I think there is a lot more of the practical things being shown to students in the clinic right now, than what there was before ... " (PDRA, 115-119) " ... I am looking at it (inadequacy) from our current system, if we could re-institute in our educational programme some form of discipline orientation back into the senior year, ... I think we could improve the quality of education ... " (FDRA, 365-371)	AD:curr