RURAL CLINICAL PLACEMENTS FOR
DENTAL STUDENTS: AN ACTION
RESEARCH STUDY

Deborah Jane Cockrell

BDS, FDS RCPS

A thesis submitted in fulfilment of the requirements
for the degree of
Doctor of Philosophy

University of Sydney

2005
I hereby certify that the work embodied in this thesis is the result of original research and has not been submitted for a higher degree at any other University or Institution.
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<tbody>
<tr>
<td>ADA</td>
<td>Australian Dental Association</td>
</tr>
<tr>
<td>ADANSW</td>
<td>Australian Dental Association (New South Wales Branch Ltd.)</td>
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<tr>
<td>AHS</td>
<td>Area Health Service</td>
</tr>
<tr>
<td>AMS</td>
<td>Aboriginal Medical Service</td>
</tr>
<tr>
<td>ARIA</td>
<td>Accessibility/Remoteness Index of Australia</td>
</tr>
<tr>
<td>BDS</td>
<td>Bachelor of Dental Surgery</td>
</tr>
<tr>
<td>BDent</td>
<td>Bachelor of Dentistry</td>
</tr>
<tr>
<td>BH</td>
<td>Broken Hill</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CDC</td>
<td>Community Dental Clinic</td>
</tr>
<tr>
<td>CV</td>
<td>Curriculum Vitae</td>
</tr>
<tr>
<td>D&amp;C</td>
<td>Dentist &amp; Community Theme of BDent curriculum</td>
</tr>
<tr>
<td>EBD</td>
<td>Evidence-Based Dentistry</td>
</tr>
<tr>
<td>FWAHS</td>
<td>Far West Area Health Service</td>
</tr>
<tr>
<td>GIFS</td>
<td>Guild Insurance and Financial Services Ltd.</td>
</tr>
<tr>
<td>HAHS</td>
<td>Hunter Area Health Service</td>
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<tr>
<td>ISOH</td>
<td>Information System for Oral Health</td>
</tr>
<tr>
<td>LS</td>
<td>Life Sciences Theme of BDent curriculum</td>
</tr>
<tr>
<td>MA</td>
<td>Moderately Accessible (ref ARIA)</td>
</tr>
<tr>
<td>MAHS</td>
<td>Macquarie Area Health Service</td>
</tr>
<tr>
<td>MNCAHS</td>
<td>Mid North Coast Area Health Service</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum Of Understanding</td>
</tr>
<tr>
<td>MWAHS</td>
<td>Mid West Area Health Service</td>
</tr>
<tr>
<td>NACOHOH</td>
<td>National Advisory Committee for Oral Health</td>
</tr>
<tr>
<td>NEAHS</td>
<td>New England Area Health Service</td>
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<tr>
<td>NM</td>
<td>Network Manager</td>
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<td>NOHN</td>
<td>Northern Oral Health Network</td>
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<td>NRAHS</td>
<td>Northern Rivers Area Health Service</td>
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<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>OHB</td>
<td>Oral Health Branch of New South Wales Health</td>
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<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>OOS</td>
<td>Occasions Of Service</td>
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<td>PBL</td>
<td>Problem Based Learning</td>
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<td>PDO</td>
<td>Principal Dental Officer</td>
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<td>PPD</td>
<td>Personal and Professional Development Theme of BDent curriculum</td>
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<tr>
<td>R</td>
<td>Remote (ref ARIA)</td>
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<tr>
<td>RHSET</td>
<td>Rural Health Service Education &amp; Training program</td>
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<tr>
<td>RFDS</td>
<td>Royal Flying Doctor Service</td>
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<tr>
<td>RPP</td>
<td>Rural Placement Program</td>
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<tr>
<td>SDH</td>
<td>Sydney Dental Hospital</td>
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<tr>
<td>SWOHN</td>
<td>South West Oral Health Network</td>
</tr>
<tr>
<td>TPC</td>
<td>Total Patient Care Theme of BDent curriculum</td>
</tr>
<tr>
<td>UDRH</td>
<td>University Department of Rural Health</td>
</tr>
<tr>
<td>VR</td>
<td>Very Remote (ref ARIA)</td>
</tr>
<tr>
<td>WCOH</td>
<td>Westmead Centre for Oral Health</td>
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ABSTRACT

A Rural Placement Program (RPP) was developed in 2000 to address rural Australian oral health needs by providing opportunities for final year dental students to be located in rural communities and provide oral health care to residents. A total of 128 students participated in the RPP from 2000 to 2003. They were based in eleven community dental clinics in nine Area Health Services and provided additional clinical services on an outreach basis. Stakeholders were local practitioners, the Faculty, the Australian Dental Association (NSW Branch), the University Departments of Rural Health at Lismore and Broken Hill, the Oral Health Branch of NSW Health and the Dental Board of NSW. This action research study describes how the RPP provided a student-centred experiential learning opportunity, contributed to clinical care for local residents and resulted in positive attitudes to rural lifestyle and practice. The RPP had a highly significant effect on rural career interest scores for the 2001, 2003 and entire cohorts (p<0.001) There was however no significant difference in the percentage of the participating students who chose to work in rural areas in year one of employment compared with those who did not participate in the program (Odds Ratio 1.13). The pre-placement career interest score was a significant predictor for year one employment in rural areas. Recommendations for mandatory placements focus on practical aspects of program implementation, enhanced educational opportunity, cost-benefit analysis and professional collaboration. A research critique supports recommendations for future research. It is concluded that the RPP in itself will not address the current and predicted rural workforce issues. The research findings inform recommendations for future strategic planning for all stakeholders in rural oral health.
CHAPTER 1

INTRODUCTION: “WHERE IS COONAMBLE?”

PHASE 1

The beginning

This thesis describes the development, implementation and outcomes of an experiential Rural Placement Program for final year dental students of the Faculty of Dentistry at the University of Sydney. The results of this research inform specific recommendations for rural educational opportunities and provide evidence on which to develop professional workforce initiatives.

The thesis is presented in three separate phases, the components of each phase being intimately related and continually evolving. Each Phase contains distinct chapters for ease of reading however it must be stressed that the study did not proceed in such a rigid, structured fashion and that literature review, research methodology and reflection were continuous throughout.

Phase 1 describes the establishment of a thematic concern and the development of formal curriculum and research proposals. Phase 2 details the development, implementation and evolution of the Rural Placement Program from 2000 to 2003. Phase 3 discusses the outcomes of the RPP and makes recommendations for future direction.

The model developed for this study is described in Phase 1 and developed in Chapter 6. A brief overview follows to orientate the reader. The model demonstrates the role of reflection as being pervasive throughout the research. Models of both experiential learning and action research (please refer to Chapters 3 and 4) have represented reflection as being a discrete ‘stage’ in both processes. Throughout the Rural Placement Program and the associated research, it has been apparent that Schön’s concepts of both reflection-in-action and reflection-upon-action more accurately
represented the processes involved \cite{1}. Opportunities for, and outcomes of reflection were the central theme and by representing ‘reflection’ as the overall context for this model its pivotal role is emphasised.

**Figure 1: Thesis model**
PHASE 1

Phase 1 of this thesis describes the background to implementation of the RPP from several different perspectives. As previously mentioned, the different elements of Phase 1 took place concurrently and were continually revised as additional information became available. As an example, some of the cited literature did not become available until action research cycles 2 and 3. With reference to published action research in education [2, 3], agriculture [4] and management programs [5], I elected to amalgamate all references into a Chapter in Phase 1. While this does not accurately reflect the research process, it allows documentation of the research elements (Phase 2) without a continual need to re-refer to the literature. The reader is guided to the appropriate pages of Chapter 3 as relevant.

Chapter 2 provides a contextual background to the development of the RPP in light of innovative curriculum change at the Faculty of Dentistry. The rationale for the introduction of a graduate-entry, student-centred curriculum (BDent) is described and an overview of curriculum content is provided. This climate of change provided ample opportunity to introduce new student-centred elements into the Bachelor of Dental Surgery (BDS) curriculum. Additional input from curriculum development is referred to in Phase 2 as required.

As mentioned above, Chapter 3 provides an overview of the relevant literature and is presented as a distinct element of the thesis. With the introduction of the RPP, a review of the literature in several areas was required. In order that the experiential framework was appropriate, it was necessary to review the literature relating to experiential learning and the role of reflection in this learning. This informed the development of the RPP and allowed the development of the research model outlined above. It was also important to review rural attachments in other areas and determine the outcomes of such programs. This informed not only RPP development but also provided guidance for outcome evaluation and research. The oral health care needs of rural communities and the problems associated with the recruitment and retention of dentists to rural areas have attracted increasing attention within the dental profession. These
also required review as summarised in Chapter 3. As a consequence of professional and community interest and support, there was also a need to review existing community-based programs and enhancement of stakeholder support. Although scant, the literature provided guidance in developing a collaborative structure for mutual benefit. All elements of literature review are presented in Chapter 3.

At an early stage of RPP development it was evident that research associated with the program would be of value to all participants. Various groups of co-researchers were identified and these, described in Chapter 4, included students, involved staff and stakeholders. Action Research provided an appropriate methodology, allowing for ongoing reflection, modifications and actions, and was in alignment with the structure of the RPP. Use of both qualitative and quantitative methods allowed research into both anticipated and unanticipated outcomes. These outcomes enrich the findings from this research and have informed strategic planning and new initiatives. Reporting such outcomes has been a major element of this cooperative research and has provided opportunities for further involvement by all stakeholders.

As discussed in Chapters 3 and 4, experiential learning and action research at their most basic are based upon action and reflection. As this research has developed, the role of reflection has become more dominant and has been the major driver for change in both program and research. The development of reflective skills by the students is described throughout Phase 2 however the value of my personal reflections, as documented over the past three years, has been immeasurable. In alignment with the structure of the curriculum, Rural Placement Program and selected research strategy, each Phase has elements of reflective autobiography, the contents of which have been taken from my reflective journal and various written notes made from 1999 to 2003. Where possible these have been used verbatim however I have censored and made grammatical amendments on occasion. My personal reflections are therefore a key element to this thesis and are provided in italicised text throughout.

Chapter 5 describes the pilot project that informed development of the RPP. In 1999, a visiting general dental practitioner was providing clinical supervision at a metropolitan
dental teaching hospital. During conversation, one of his students unknowingly instigated this study of an experiential rural placement program by asking, "Where is Coonamble?" The initial pilot for a rural placement program aimed to provide four final year dental students with a positive experience of rural lifestyle and dental practice. Throughout the program, the students were interviewed on an informal basis and on completion their comments were used to inform the development of the rural placement program.

Chapter 6 of Phase 1 summarises Phase 1 and describes the development of the thesis model outlined above. This model is used thereafter to orientate the reader and provide structure for the thesis. Using the model, Chapter 6 also describes the development of the RPP proposal and the associated policies, procedures and protocol. The associated action research concept and the research methods are also described in anticipation of RPP implementation.

PHASE 2

Phase 2 of this thesis describes the experiences and outcomes of the RPP from 2000 to 2002. As mentioned above, autobiographical notes and reflective text are included throughout Phase 2. When student or personal quotations are used, in all cases the month and year of the quote are provided, however to maintain confidentiality, the authors (myself excluded) have been coded. Throughout Phase 2, student quotes are denoted numerically and staff comments are denoted alphabetically.

Chapters 7 to 10 describe the RPP and associated research from 2000 to 2003 respectively. Within each Chapter, the action research elements are described under sub-headings and a highlighted model accompanies each of these. This visual representation provides structure and guidance. The reflective paradigm continues throughout.
PHASE 3

Phase 3 is a meta-analysis of the RPP project and research. It reviews the data obtained from all RPP participants from 2000 to 2003.

In Section 1 of Chapter 11, a meta-analysis of the data is provided and results are discussed. Section 2 of this chapter compares the year one career choices made by RPP participants with those who did not attend.

Chapter 12 presents the overall conclusions from this study and makes recommendations for future rural placements. Recommendations for additional recruitment and retention strategies are outlined with consideration of academic leadership to this end.
CHAPTER 2

CONTEXT FOR THESIS

CURRICULUM DEVELOPMENT

"The Faculty’s decision to embrace student-centred learning provides lots of opportunities to expand dental education and take it out into the community. The goals and competencies etc that we have developed will provide the educational framework for any such programs and mean that community-based education can grow within established concepts. I guess reviewing the background to these developments will allow me to reflect on how best to integrate any program with the philosophy of the BDent curriculum."

DJC October 1999

Early in 1990, a committee appointed by the Institute of Medicine considered the future of dental education in the United States and in 1995, their deliberations and recommendations, were published in the text, Dental Education at the Crossroads – challenges and change (8). Although specifically addressing concerns in the US, many of the findings are applicable internationally and have influenced curriculum development within Australia. The need for new and innovative educational strategies, a broader base for dental education and the optimisation of learning opportunities stimulated dental schools to review their curricula for relevance to clinical and educational outcomes (9-17). In this light, in 1997, the Faculty of Dentistry at the University of Sydney commenced a comprehensive review of curriculum structure. With reference to the literature and in wide consultation the Faculty identified the need to address the changing roles of the dentist in the context of educational reform (18).

The roles and responsibilities of the dentist are continually changing. Recently, population demographics, professional development and societal needs, have stimulated an evolving role for the profession (19-21). The ageing of the population, with
an associated increase in chronic and multi-system illness and increasingly complex pharmaceutical management, requires the dentist to be able to diagnose complex oral health needs and provide advanced dental restorative treatment with an appreciation of the potential complications.

Rapid and continuing advances in biomedical and genetic research require dentists to be able to interpret information, evaluate data and apply prior learning to ensure relevancy of treatment provision. A comprehensive understanding of the underlying biomedical sciences causing disease could be expected to increase both clinical competence and confidence\(^{(22, 23)}\). Professional advances include new dental technologies and materials and the increasing application of information technology to dental practice. Practitioners must be able to communicate effectively, successfully acquire and utilise new skills, integrate realistic self-appraisal, and efficiently evaluate information to support evidence-based practice.

Educational links with medical and allied health practitioner education increase collegiality and professional awareness. There are also economies of scale. It is incumbent upon dentists to be involved in the education of medical and allied health practitioners to promote oral health at a community level and in the context of primary health care\(^{(18,24)}\).

**Changes at the University of Sydney**

In 1999, the Curriculum Committee of the Faculty of Dentistry proposed that from 2001, the Faculty would discontinue its five-year curriculum and introduce an entirely new, integrated, four-year program. The Faculty decided that admission to the program would be restricted to graduates who, through demonstrated academic ability, would be expected to have advanced study skills, a more mature approach to learning and self-knowledge, and high levels of professional motivation. It was anticipated that the broad range of previous educational experience would enable the students to contribute ultimately to different aspects of the dental profession.
Through its links with the Faculty of Medicine, the Faculty of Dentistry gained some support during the development of the BDent curriculum. This alliance between the educators of health professions provided an opportunity for information exchange, optimal utilisation of resources and access to experience and expertise. The University of Sydney Graduate Medical Program in the College of Health Sciences provided a model of a four-year professional program and review of program content revealed that many of the educational goals and strategies were appropriate for dental students (25). Much of the content of the first two years was relevant to dental education and, through joint staff appointments, IT support and shared infrastructure (26), some co-education of dental and medical students was considered to be appropriate and desirable.

Among other goals, the Faculty of Dentistry’s Teaching Plan identifies the need for collaboration within the College of Health Sciences to enhance learning “specifically in the target area of rural health” and states the Faculty’s commitment to providing rural placement opportunities for all students able to participate.

**Aims of the BDent curriculum**

The aim of the BDent curriculum is to “produce dentists who will develop, and be committed to maintaining, the highest professional and ethical standards. The program is designed to encourage students from a diverse range of academic and personal backgrounds to develop the intellectual, technical and personal skills to practice effectively, rationally and compassionately” (27). In addition, it was anticipated that students would have a commitment to improving oral health within the community and a broad understanding of the interrelationship between general health, disability and illness and oral health.

It was agreed that the new student-centred curriculum would incorporate and promote various learning methods and strategies, many of which would be driven by students’ self-determined learning needs. The curriculum would be based on Problem Based Learning (PBL) (28) thus facilitating the development of clinical reasoning skills,
appraisal of information, communication strategies and both individual and cooperative learning skills (17,29-31). The problems would be based upon the curriculum goals and would integrate content knowledge and skills developed by the curriculum themes.

Curriculum goals

Widespread and diverse consultation was a fundamental element in developing curriculum goals. The Faculty compiled a list of draft goals and distributed this to professional and community groups. The Dean and Associate Deans made personal presentations to various professional bodies and additional input was sought through faculty publications. Professional and community input thus contributed to curriculum goals for the new Bachelor of Dentistry (BDent) curriculum#. These goals provided clarity and focus for the development of both curriculum content and delivery.

A framework, comprising curriculum themes to ensure constructive alignment of all elements of the goal-directed program, was established (32). The three themes were identified as being ‘Life Sciences’ (LS), ‘Total Patient Care’ (TPC) and ‘Personal and Professional Development/Dentist and the Community’ (PPD/D&C), and longitudinal integration was essential to the development of the curriculum. The theme structure was designed to ensure that the students’ knowledge and skills develop and build systematically over the four years#. The thematic structure has also facilitated the change from a discipline-based curriculum to an integrated approach supported by multi-disciplinary teaching and learning.

Theme chairs were asked to develop aims, objectives and outcomes for each theme, congruent with the identified goals#. Subsequently, the Curriculum Committee identified the need to articulate clearly the clinical skills that would be required of a

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* Full details of curriculum goals, theme goals, competencies and assessment policy can be found in Curriculum Planning Papers available from the Faculty of Dentistry, University of Sydney
new graduate from the BDent program. These skills, referred to as ‘Clinical Competencies’ were largely based within the TPC theme#12. The document guided development of skills in the first two years and formed the basis for planning the final two years of the program.

Information Technology

As dental practice is increasingly dependent on the efficient and effective use of Information Technology (IT), the use of web-based educational resources was seen as an opportunity to promote the utilisation of IT skills whilst providing a supported flexible learning environment for students (http://www.dentistry.usyd.edu.au). The web site was based on that of the Faculty of Medicine and was planned to provide students with timetables, communication networks, references, learning materials to support problem based learning and self-assessment opportunities. In addition, students would be encouraged to submit ongoing comments using an evaluation button. An associated staff review site would promote a collaborative approach to teaching and learning and access to peer support if required. This element would be particularly valuable during the development and implementation of placements for students. Videoconferencing facilities were available at both clinical sites and provided opportunity for distance education. The use of information technology by rural allied health practitioners was reported by Sheppard and MacKintosh (33). They outlined the various technologies available and concluded that these helped to “create a learning environment that maximizes interactivity and develops information literacy”.

Clinical Years of the BDent program

To support the documented goals, a need for clinical experiences in a range of settings (both dental and medical) was identified (1, 34-38). It was anticipated that extramural learning and clinical opportunities would assist in the development of an understanding of the nature and scope of dental practice. It was agreed that clinical placements for students would be an effective method for further integration of theme aims, objectives
and it was anticipated that both of these theme committees would be involved in
determining the structure, content and delivery of any clinical placements.

A conference week at the end of Year 4 has been planned. Students will be required to
present their research and to report on experiences from their elective and extramural
placements. This will facilitate shared learning and allow structured review of
extramural learning as well as providing an opportunity for discussions of career paths
and issues of professional development.

Assessment

Clearly articulated, criterion-referenced assessment strategies were designed to support
learning, provide feedback to both students and staff, and to ensure the maintenance of
appropriate standards. The thematic structure provided ideal opportunities for
integrated assessment, with the Assessment Committee assuming overall responsibility
for assessment policy, practice and evaluation of assessment methods#. The need for
continuous and progressive assessment was identified and the emphasis was to be
placed on reasoning and deep learning principles rather than on rote learning of factual
material. In order to encourage the development of self-appraisal skills, it was decided
that self and peer assessment would precede staff assessment wherever possible. The
importance of ongoing formative assessment that provides appropriate, sensitive and
timely feedback was stressed and it was determined that such opportunities should also
be available through the BDent website. The need for integrated summative
assessments, in alignment with the curriculum goals, was an essential element of
assessment policy.

With specific reference to clinical placements in Year 4, students are required to
complete a reflective portfolio and obtain “satisfactory reports from all rotations and
elective” *(39).*

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8 Full details of curriculum goals, theme goals, competencies and assessment policy can be found in Curriculum
Planning Papers available from the Faculty of Dentistry, University of Sydney
Evaluation

The Faculty of Dentistry determined that the progressive outcomes of the new curriculum would be continuously evaluated throughout the program with direct reference to the curriculum goals. Further, the processes of delivery would also be scrutinised by asking staff and students to reflect on their experiences. The Faculty recognised that evaluation is an essential component of reflective teaching and learning and that reflection is an integral component of the curriculum structure, specifically within the PPD/DC theme aims and objectives. By recognising the significance of the evaluative process the Faculty provided a model for an ongoing commitment to reflective practice.

The documented principles underlying Faculty evaluation policy determined that students should not be overloaded with evaluation activities and that the feedback provided should be acted upon in a timely manner. Student comments would be submitted through the BDent website. In the context of student placements, it was agreed that open and closed response evaluation forms would be available electronically and that the feedback would be used for ongoing development of the placements and reporting to those involved in the RPP.

Staff Development

As an essential element of curriculum reform, the Faculty identified the need for academic and clinical support for staff involved with the new curriculum. An ongoing commitment to support for teaching resulted in the implementation of a comprehensive staff development program, in the form of workshops, individual training and small group work, being implemented. In addition, participation in courses offered by the Institute of Teaching and Learning (ITL) at the University of Sydney was promoted and staff were encouraged to obtain the Graduate Certificate in Higher Education offered by the ITL.
Faculty interface with hospital/government services, the profession and the community. As noted in the Faculty’s Australian Dental Council accreditation submission, the Faculty enjoys good relations with the two Teaching Hospitals, Westmead Centre for Oral Health in Western Sydney Area Health Service and the Sydney Dental Hospital in Central Sydney Area Health Service. The organisational structure of NSW Health requires the Area Health Services to relate through the Chief Health Officer to the Minister for Health. The Chief Dental Officer liaises with the Area Health Services (AHS) on “matters of state-wide policy and funding” while the AHS are directly responsible for policy and protocol within their areas. Opportunities to develop community clinical placements would therefore require collaboration at both a local level with the Area Health Services (AHS) and with the Chief Dental Officer.

Summary

In consultation and collaboration, the Faculty of Dentistry has developed a goal oriented graduate-entry dental curriculum that, for the first time in Faculty history, requires fourth year students to participate in community based rural clinical placements.

The philosophy, goals, assessment and evaluation of placements are in constructive alignment with those of the BDent curriculum and aim to utilise the existing IT infrastructure. Close liaison with the Associate Dean (Curriculum) and reports to the Faculty’s Curriculum Committee are required to promote and support thematic content and to ensure that placements include the development of competencies. Opportunities for collaboration with the community, dental and other health professionals should be optimised. Staff development is an essential component of any preparation for placement.

Those students attending the Rural Placement Program were enrolled in the Faculty’s traditional BDS program. These students had little, if any, exposure to student-centred curricula and were therefore largely unfamiliar with teaching and learning strategies.
such as self-assessment, development of personal learning outcomes and reflective journals.

The transition from an undergraduate to a graduate curriculum provided a significant opportunity to develop optional placements for final year students of the old curriculum, prior to the implementation of formal, integral placements in year 4 of the new curriculum. As the Faculty embraces extramural educational opportunities, a new approach to de-centralising the curriculum will be developed. Academic rigour will be retained and the structure of the various placements will be in alignment with the goals of the BDent curriculum.
CHAPTER 3
LITERATURE REVIEW
EXPERIENTIAL LEARNING

"Thinking about my own learning experiences, particularly as an undergraduate student, there are lots of ideas that come to mind. Just being there and doing it was OK but chatting with mates, sharing ideas and experiences and getting a sense of perspective was probably every bit as useful. Having someone to talk things through was they key and I remember that the clinicians who took time after the session to talk, were the ones I learned most from.

If I am going to implement a credible program based upon experience I need to know more about the theory behind it rather than rely purely on my personal recollections and gut feelings. At this stage I need to find out what learning from experience is, whether it works or not and, if it does, how can I set up a program that promotes it."

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John Dewey (1859-1952) was the American philosopher and educator credited with driving education away from authoritarian methods towards learning through experimentation and practice. In 1938, Dewey (40) described learning from experience as having two elements; he defined these as "having", an immediate experience, and "knowing", an interpretation of this experience. He considered an experience as being not only the event itself but the attribution of meaning to the event. He suggested that "that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative". Dewey believed that there were two distinct types of experience that led to learning and he categorised these as 'trial and error' experience and 'reflective activity' that enabled effective problem-solving to
take place. Dewey (41) also discussed the role of reflective thinking in learning and considered reflection to be a conscious, controlled activity. He described reflection on experience as being a two-stage loop with the learner alternating between experience and reflective activities. Dewey considered that education was a tool that would effectively and usefully integrate culture and vocation.

Dewey’s criticisms of vocational education are pertinent in the context of dental education. The role of learning from experience has not traditionally been a primary focus of dental curricula, particularly in its clinical elements. Learning has largely been considered a passive process by which those with knowledge seek to transfer that knowledge to the recipient. The ‘expert’ has tended towards a ‘do-as-I-do’ approach, with dental educators on occasion referring to the ‘watch one, do one’ teaching technique. In the teaching of clinical techniques for example, students have traditionally watched a tutor or an instructional video, and then practiced the same procedure in simulation or supervised exercises. The focus of these exercises has been to reproduce the demonstrated technique, with those closest to the tutor’s demonstration being rewarded most highly. Structuring such education in an experiential learning framework and encouraging reflection on the rationale for, and context of, the activity have not been prioritised.

Models of experiential learning
Kurt Lewin (1890-1947) was an influential theorist who had a profound impact upon the theory of experiential (action) learning and action research (see Chapter 4). Lewin’s model for action research (42) has parallels with Dewey’s conception of learning from experience and the inter-relationship between action learning and action research is considered further in Chapter 4. Both Lewin and Dewey provided a psychological and philosophical base on which future educators developed and refined their theories and models of experiential learning.

There have been several suggested models constructed to represent the processes involved in experiential learning and since Lewin’s model (42), these have been
represented as cyclical models. Probably the best-known model of experiential learning is that described by Kolb and Fry (44). This model emphasises the important role of experience in the learning process. Experience drives the development of concepts that are then used to identify new learning experiences. The ‘experiential learning model’ expands on the two-way flow described by Dewey (41) and represents learning as a four stage cycle comprising concrete experience, observations and reflections, concept construction and testing concepts, and notes that learners require different abilities to optimize the learning achievable through experience.

Whilst Kolb and Fry described a model for the experiential learning experience, the role of reflection was not considered in depth and as discussed below, the pivotal role that reflection has in the experiential learning process has only gained popularity over recent times. The Kolb and Fry model has also been criticised for its lack of consideration of the nature of knowledge and its focus on learning within an individual mind rather than in context (45). Jarvis also expressed concern at the apparent formality of the model and challenged its sequential nature. The Kolb and Fry model does however remain a useful model on which to base the design of experiential learning programs. Kolb went on to develop a ‘Learning Style Inventory’ (LSI) based upon the four elements of the experiential learning model; developments in both experiential learning and LSI can be found at Experience Based Learning Systems (46).

In 1981, the British Further Education Curriculum and Development Unit (FEU) developed an experiential learning model with reflection as a central element (47). The model is based upon that of Kolb and Fry and was used in the United Kingdom to inform debate on curriculum initiatives and as a framework for National Vocational Training development. Again, the nature of the reflective process is not pursued other than to describe reflection as “organised” and of an “intentioned nature”.

A third model defined by Grundy (48) considers the reflective process within the experiential learning of a group. Grundy stated that learners need to have the freedom of choice, independent of the influence of the “teacher”, for self-reflection to take place. A key concept of her complex model was therefore the “equal power
relationships” that must exist within the experiential learning framework for autonomy in learning. The experiential learning models developed by Grundy and others, have also been used to provide frameworks for action research and this inter-relationship will be discussed further in Chapter 4.

Heron (49) postulated that experiential learning was based upon “multi-model learning”, outlining four modes of learning that are interdependent and in an “up hierarchy”. He considered the “doing” to be based upon and “nourished” by each of the layers underneath, the fundamental learning opportunity being dependent upon the emotional mode.

With a specific emphasis on the reflective process in experiential learning, Boud and Walker (50) developed a new model. They believed that the role of those assisting learning was to provide a learning stimulus, support the learner during the experience and facilitate reflection upon the process. They considered the model to be equally applicable to individual and group learning and acknowledged the role of Schön’s work (51) in advancing the theories of ‘reflection-in-action’.

Postle (52) and Mulligan (53) described personal variations on the models outlined above and stated that these promoted development of the internal actions required to encourage reflective learning. Both authors considered reflection to be the pivotal element of any experiential learning opportunity.

**Philosophy of experiential learning**

More recent work on experiential learning has been developed in light of Dewey’s original concepts. Boud et al. (54) noted that “there is an increased interest in .... acknowledging the autonomous learning which takes place outside educational institutions”. The role that experiential learning, either contrived or existing, has in the development of learning is considered in depth by the authors who stress the need for external interactions, direct or indirect. The authors highlight the significance of the educator’s previous experience and consider this an integral component of any
experiential program. The essential processing and reflecting that arises from individual experience are major factors in higher-level learning and should be considered to be as credible as de-personalised, or formal, learning. The authors debate the definitions of “experience” and emphasise that “continuing, complex and meaningful interaction is central to our understanding of experience”.

Usher (55) noted that the evolution of learning from experience requires an appreciation of the complexity of the learning process, a self-awareness and a reflective ability, and interaction with an external facilitator who can create meaning. Candy (56) described the desire for development of learning autonomy and emphasises the importance of conception of goals, rational reflection and pursuit of learning opportunities.

The personal and unique experiences obtained through experiential learning are considered an integral component of any defined learning structure and prior experiences are crucial to our interpretation of new learning opportunities (50, 57). Attempts to provide experiential learning opportunities must therefore consider past learning and its potential impact upon ‘new’ learning.

McAllister et al. (58) concur that learning from experience in the clinical setting must be based in a reflective paradigm and that barriers to experiential learning, such as adverse peer influence, reconciling clinical treatment needs and consideration of previous learning experiences, must be anticipated in developing experiential learning opportunities.

Boud et al. (54), made a number of propositions to highlight their perceptions of the issues relating to learning from experience. First, they proposed that experience and learning cannot be separated and that experience is both the “foundation of, and stimulus for learning”. They recognised the importance of experiential learning not as a static, isolated process but rather that the learning was likely to be revisited, reviewed and transformed over time. A second proposition was that each learner “actively constructs their experience” in that they bring unique qualities to the experience, have unique learning needs and have unique expectations from the experience. To attempt to
define the learning expected from the experience is to disregard the uniqueness of the participants. These authors also discuss the holistic nature of learning describing the balance between cognitive, affective and psychomotor learning. The authors support the need to integrate these different aspects of learning and note that affective learning has not been a focus of traditionally cognitive and psychomotor-based courses.

In the development of experiential learning opportunities, they describe the need for an appreciation of the social and cultural construct in which the learning is based and note that these influences must be recognised to appreciate changing societal values. The need to critically reflect on assumptions, boundaries and biases is essential in order to be receptive to learning opportunities. In addition, the authors propose that learning is influenced by the “socio-emotional context in which it occurs”. A positive context for experiential learning can thus help learners to overcome negative past experiences and assume a different role as learner. They note that there is a need for practical and emotional support to enable learners to develop self-confidence as a prerequisite for learning.

As noted by McAllister et al. (58), “clinical education is by its very nature experiential”. Clinical education requires the student to be self-directed, develop and refine problem-solving skills and have an ability to reflect upon the learning experiences before, during and after the experience.

Critical reflection

As noted, many educational programs involve experiential learning and as Boud et al. (59), noted that there is a need for such programs to promote awareness of the opportunities for learning to students and encourage them to take control of their own learning outcomes. These authors expressed a concern that students are often exposed to “inappropriate academically oriented learning under the guise of professional education and training”. The authors identified the importance of reflection in the learning process and noted that it is easy to ignore because reflection is unique for each learner and it is difficult both to observe and assess.
They went on to state that reflection is not a “single faceted concept” but that it is more generic, applying to a number of activities and ideas. They discussed the various stages involved in reflection and outlined strategies to promote such activities in learners. The need for a preparatory stage, or briefing, prior to the learning experience is stressed and they discussed at length the need for subsequent involvement in the learning program to “fuel” both intra- and post-experience reflection. They considered that this reflection should be pursued “with intent” and goal-directed.

The impact that negative experiences can have on reflection and learning outcomes has been described (57, 59, 60). These authors considered such negative experiences to be barriers to learning, capable of eliciting false interpretation and capable of undermining of the will to continue with both the experience and reflection upon it. The impact of positive experiences and consequent enhancement of the learning process is also well documented (3, 51, 61-63). In an attempt to minimize the negative influences the need for “external validation” is stressed (50, 60). Through ongoing facilitation, the learner can be encouraged to rationalize and contextualise previous experience and re-frame it within the current experience.

As previously outlined, Boud et al. (64) described a model that encompassed the affective aspects of learning and detailed methods for both promoting reflection and managing the potential barriers to reflection. They described the importance of the characteristics and aspirations of the learner in both the interpretation of experiences and the ability to reflect upon those experiences. They noted that prior experience, both positive and negative, influences the confidence, competence and level of interaction of the learner and stated that “reflection happens in the midst of the action, not only in the calm light of recollection at leisure”. They argued that dealing with past experiences is an integral component of any experiential program if true reflection upon learning is to be promoted. In addition to previous educational experience, the influences of cultural, social, philosophical and political should be considered in the development of reflective programs.
Schön (3, 51) described reflective practice as comprising two reflective elements: reflection-in-action and reflection-on-action. The former allows immediate responses to reflection so that the process or procedure can be revised as it is being undertaken. Reflection-on-action is the process that reviews the actions and outcomes after the event and promotes revision of theory and action for the next event. In this sense, reflection-on-action might also be considered as ‘reflection-pre-next-action’. Schön’s influence on the teaching and learning philosophies that integrate theory and practice is seminal. His concerns about “dual curricula” and the “theory-practice gap” led to the development of a “reflective practicum” that he considered bridged the worlds of university and practice. Schön (3) considered there to be a “crisis of confidence in professional knowledge” and stated that “in the varied topography of professional practice, there is a high, hard ground overlooking a swamp”, with the high ground being based on technical rationality and the swamp referring to more generic attributes. He used examples of learning in the practicum to construct a theory of reflection that offered opportunity for institutions and individuals to contribute to the education of students in “the indeterminate zones of practice”. Examples of reflective curricula are described in his text, Educating the Reflective Practitioner (2).

Greenwood (65) described initiatives in nurse education that were designed to promote “double loop reflective learning”. Her critique of the work of Schön described his model as being “flawed” in its failure to recognise the importance of reflection prior to action. She listed various benefits of reflective practice with direct reference to nursing and teaching colleagues. These colleagues (for example (66-68)) have constructed frameworks for reflection on action and Greenwood (65) discussed the relationship of these frameworks with the action research guidelines described by Kemmis and Mc Taggart (69) and Carr and Kemmis (70). This relationship will be discussed further in Chapter 4. Greenwood concluded that the double loop reflective learning promoted reflection on the “norms, values and social relationships which underpin human action” and advocated its use in nurse education.

As noted by Kolb (71), experiential learning should not impose artificial learning limits. Courses are designed to promote and stimulate reflection, with the consequent ability
to develop individual outcomes, however the need for integration with a pre-determined, goal-focused outcome has potential for conflict. Contributors to Boud (59) describe and reflect upon their experiences of developing and implementing experiential learning programs. There is a universality that reflection has a pivotal role in any experiential program and the various contributors to this tome describe models, frameworks and learning activities that promote reflection.

Whilst reflection in learning is based in the education literature, reflection and reflective practice have also been well documented in nursing literature. Clarke (72) described reflection on action as being the tool that could facilitate the integration of nursing theory and practice. Rich and Parker (73) however expressed concern that nurse educators had “jumped on the reflective practice bandwagon because it is claimed that it provides a rationale for practice”. Stockhausen (74) described reflective practice as an “exciting concept” and described reflection as promoting co-operative learning, information exchange and realistic goal setting. She considered the “clinical learning spiral” to be a model that integrated student and clinicians in learning.

Brookfield (75) expressed a concern that while much can be read and written about reflection, does this reflection actually result in increased student learning about their experiences? As noted by Green and Holloway (76), despite considerable interest in experiential teaching and learning there is little empirical evidence of its efficacy. Jarvis (45) considered that this was due to a lack of consideration of the complex inter-relationships that occur during “primary and secondary experiences”. He considered that the focus of the literature was on the “primary experience” that is, where learners “learn through sense experiences” and that the “secondary experience”, mediated through “language and visual communication”, had not been a focus. His perception was that there was a need to provide a rationale for the interpretation and influence on future direction, and that further research was required to determine the effectiveness of experiential learning and reflection in adult learning.

In their survey of nursing students, Green and Holloway (76) concluded that there was an awareness of experiential learning within the student cohort however the students
focus was on the primary, clinical experience. A number of the students identified the integral nature of reflection in experiential learning and recognised its value in future practice. They did also note that the facilitation of reflection often "left much to be desired". Hannigan (77) expressed concern that the idea of reflection has been accepted too readily and without adequate testing of its value. He concluded that reflection should be just one part of a comprehensive assessment strategy.

Lowe and Kerr (78) compared the learning outcomes of two paired groups with one group exposed to reflective methods and the second exposed to undefined "conventional" teaching methods. It was postulated that the reflective group would demonstrate superior 'deep learning' outcomes in an "assessment of knowledge, comprehension and understanding". Analysis of assessment results demonstrated that there was no difference between the two groups. Despite this, the authors were reassured that introduction of an entirely new teaching method over a short space of time had resulted in equal outcomes and considered that introduction of reflective strategies at an earlier stage with enhanced facilitation had "great potential".

Rich and Parker (73) discussed reflection in education in the context of nursing and midwifery. They stated that reflection on critical incidents could be a valuable learning activity but expressed concern that "in the absence of structure, these activities may be counter-productive or even harmful". They considered that inappropriate curriculum structure, incorporating free and unsupported interpretation of critical incident analysis, had the potential to cause students disaffection and even psychological disturbance.

**How can reflection be encouraged and recognised?**

Discussion papers commissioned by Nelson (2002) (79) made definitive comments that, "the repositioning of learning at the centre of higher education reframes conceptions, priorities and expectations of outcomes. Opportunities for enriched learning and fulfilling teaching are considerable, at a time when online, experiential, problem-based or collaborative learning are available methodologies in the tertiary
teachers repertoire". Whilst there are many “available methodologies”, the role of the “tertiary teacher” in student-centred curricula is one of facilitator, mentor and co-learner. As noted with specific reference to problem-based learning, by Little (80), “the path from lecturer to facilitator is often an uneasy one”. She noted the need for self-perceived “experts” to embrace methods uncharacteristic of traditional professional education and mimic the principles inherent in experiential learning.

The role of the facilitator

Schön (3) considered the essential role of the facilitator at length. He focused on the role of the facilitator and the nature of the dialogue between learner and facilitator in his “architectural studio” model and in other examples. He made suggestions for questioning strategies and comprehensively documented the interpersonal skills required for successful facilitation. His over-riding theme was of “coaching, counselling and communicating”.

Candy et al. (81) also focused on facilitated and subsequently independent “learning conversations”. They described the use of “organised talk back” following audiotaped learning in an attempt to encourage learners to ‘re-visit’ their experiences. They argued that effective facilitation required some form of record of the experience although they did anticipate that such records would become redundant as the learner developed internal reflective ability.

Knights (82) reflected on her experiences of reflection in peer counselling, a technique that involves two co-workers taking turn in counselling each other. She noted that “talking is common: what is far less common and far harder to obtain is good listening”. She believed that the value of co-counselling for students, with an emphasis on the counsellor’s listening skills, was the “best possible way” of including reflection in the learning process.
Pearson (83) referred to the role of de-briefing to promote reflection. Again, the role of the facilitator is the focus and Pearson provided useful information to support the development of de-briefing skills and the organisation of de-briefing opportunities.

The role of peers

Lincoln and McAllister (84) described peer-learning strategies such as brainstorming, peer assessment and shared analysis, and considered that these opportunities provided a safe and supported opportunity for reflection. They felt that the interaction with peers was more likely to result in empathic and frank discussion of positive and negative experiences. They also considered that peer learning may "assist students to develop their professional identity and sense of belonging to their chosen profession". Hart (85) described the benefits of peer learning amongst a group of clinical nurses and these included increased self-esteem and confidence, improved problem solving and information sharing. The group however, did not refer to increased reflective ability in this study. Further, Lincoln et al (86) stated that programs in which individual students were placed in individual units would not be conducive to peer learning attesting to the benefits of placing students with peers (84, 87-89).

Keeping written records

Powell (80) considered autobiographical learning to be an ideal method for reflecting upon previous experiences and rationalising future experience in this light. He summarised the use of autobiographical material with specific reference to diary-keeping and states that the purpose of such records was to "reveal, describe and interpret the past experience ..... in order to illuminate the present and make manifest the potentialities of the future". Powell used autobiography in an Adult Learning program and concluded that the students' autobiographies were more useful to the facilitator than the learner, remarking, "there is something bizarre about teachers learning more than students". Powell commented that the learner must determine the extent of self-disclosure so that reflections were made in a non-threatening medium. He believed that autobiography was an important element of reflection but found it of varying degrees of benefit to the learner.
Autobiography is one element that may be included within a written reflective record. Such a record has been variously referred to as a journal, portfolio, diary or log-book and these terms are often used interchangeably. Walker (91) described the portfolio and provided a detailed guide to the use of portfolios in reflective learning. He cited one student who had used a portfolio and who stated "it's like a mirror that reflects me to myself". He noted the advantages and limitations of portfolio usage and concluded that selectivity was required to prevent the exercise from being too time consuming. He considered that portfolios were not suited to all learners but stressed their role in promoting reflection, attributing meaning and integrating prior and current knowledge. McMullan et al. (92) summarised a portfolio as "a collection of evidence .... of both the products and processes of learning". In their meta-analysis of the literature relating to the use of portfolios in competency-based education, they concluded that "a holistic approach to competence .... seems to be compatible with the use of portfolios for assessment" and they observed that the "teacher-student relationship is crucial". Thorpe (93) described the use of portfolios in Open University distance education. Students were encouraged, but not required, to keep a portfolio throughout their education and it was stressed that this would remain entirely confidential unless the learner indicated otherwise. Thorpe considered that her decision to use portfolios was based upon reflection on her own learning and reflective strategies and she expressed disappointment in both the number of students electing to participate, and in the level of reflection exhibited by those who chose to maintain portfolios.

Lincoln et al. (86) stated that unless it is decided that personal writing is assessed, the right of the learner to desist from this activity must be respected. The issues associated with assessing personal writing, be it a portfolio, journal or diary, are controversial. Rather than assessing the writing itself, Lincoln (86) advocated the requirement for critical incident reporting that depended upon input from the learner's journal or portfolio.

The use of journals that promote reflection upon learning experiences has been documented (86, 94, 95). Stockhausen and Creedy (94) described journal use as allowing
the students to work with experiences in the clinical environment and reflect upon their integration with other aspects of their learning. The authors considered that the journal promoted reflection-on-action and self-discovery. They considered the validation of one’s own learning and the learning gained from clinical experience to be other key functions of journal writing. Lincoln et al. (86) considered that journal writing should be facilitated initially as the skills required were often underdeveloped in the learner. They suggested that prompting questions might be used to encourage writing. They also discussed the use of structured journals that provide learners with a template for their reflections and considered such journals to be helpful in empowering learners but they qualified this by referring to the need to include learners in determining the format of journals. The authors considered that an additional benefit of the journal was to the educator as it provided insight into student understanding, learning and experiences. Jung and Tryssenaar (96) used journals to explore the experiences of clinical educators involved with fieldwork experience. They performed a retrospective content analysis of the journals to determine common themes and thus inform staff development.

Assessment of reflection

While there are several methods for promoting reflection, each with its strengths and limitations, assessment of reflection is a vexed subject. Nightingale et al. (97) reviewed assessment strategies used in Australian Universities. Within the resultant text, Toohey (98) considered the assessment of journals and portfolios. She outlined strategies used by various colleagues to assess journal and portfolio content for assessment of reflective ability of the learner. She concluded that assessment of such records would inevitably lead to a less personal and more contrived record. She did however note that those students who had diligently and meaningfully reflected on their learning felt that failure to assess their records made them a pointless exercise. She described written assignments, interviews, group discussions and critical incident analysis, both oral and written, as being used in the assessment of reflective ability. While contributors to Nightingale et al.’s (97) work described many facets of journal and portfolio assessment, details of the exact criteria used to determine reflective ability were scant. One exception to this was a comprehensive and criterion-referenced
marking schedule used in Health Science Education. Students were required to submit a reflective report with reference to a reflective journal. The contributor (Everingham in (99)) noted that this method provided an opportunity to “provide a creative bridge” between private journal keeping and the writing of a ‘public’ report. She also noted that it was important for students to recognize the role that the journal would play in learning and assessment.

In a meta-analysis of the literature on the use of portfolios in the assessment of competency, McMullan et al (92) noted that there was general agreement that portfolios were of value in formative assessment however they were unable to obtain evidence of their value in summative assessment, citing problems with validity and reliability due to the personal nature of the portfolio. They stressed that this did not infer that the portfolio was valueless but indicated that there was considerable work required to develop appropriate assessment criteria. Westhorp (Westhorp cited in (93)) expressed similar concerns. She described the assessment of learning journals and opined, “the issue of grading reflective journals is a thorny one”. She noted that it was difficult to ‘intrude’ into, and attach a ‘value’ to an individual’s personal reflections but maintained that the process was of proven value in adult learning and as such, should be recognised through assessment. She therefore used journals as one component of case-study assessment. There was no detail of “grading” criteria provided however.

Woodman et al. (100) and Pee et al.(101), reported the outcomes of a content analysis of worksheets completed by 31 dental and dental therapy students as a component of a reflective learning activity. They found that students focused on negative experiences and problem situations. The research group used cue questions (after Johns (102)), Hatton and Smiths criteria for recognition of types of reflection (103) and “examination by peer judges”. They concluded that this method allowed objective assessment of reflection and provided insight into the process of reflection.

At a more fundamental level (104), the need for formal assessment of any experiential program needs further consideration. Boud (105) prompted educators to critically reflect on the assessment strategies available in order to align assessment with learning
outcomes. He provided a series of rhetorical questions that were designed to assist in the development of appropriate, valid and reliable practice. Nightingale et al. (97) maintained that assessment fulfilled the needs of the educational institution, the community and the students. They stressed the importance of constructive alignment with curriculum goals (refer Chapter 2), supporting student learning and based on desired outcomes.

Ramsden (106) considered that the amount and quality of assessment is “one of the most critical of all influences on their (students) learning”. Students tend to adopt “surface” or “strategic” (“achieving”) learning styles in an attempt to achieve high grades and marks. Students’ approaches to learning were first identified by Marton and Saljo and were subsequently reviewed and revised by Biggs (107) and Newble and Entwistle (108). Biggs noted that approaches vary depending upon the learning context, the perceived role of the ‘teacher’ and the criteria for assessment of learning. Ramsden (106) observed that, “unsuitable assessment methods impose irresistible pressures on a student to take the wrong approaches to learning tasks”. Students study what they think will be assessed. The content of educational programs and hence the work required for assessment also influence learning styles. Assessment can therefore be used as a tool to foster deep approaches to learning (109). Rowntree (104) also discussed the relative merits of summative and formative assessment and concluded that assessment methods should be varied and include both methods.

Boud (110) stated that “the development of skills in self-assessment lies at the core of higher education, and as teachers we should be finding whatever opportunities we can to promote self-assessment”. Self-assessment provides students with an opportunity to be reflective on their learning, develop learning standards and initiate an ongoing self-appraisal mindset. Students identify criteria to apply to their work and judge the extent to which they have achieved these criteria. This is particularly relevant for dental students who on graduation will work independently with only themselves as arbiters of standards. Heron (111) rationalised the use of self-assessment in professional development and experiential learning. Self-assessment is commonly used as an adjunct to other assessment methods and Boud (110) provides examples of applications
in law, engineering and architecture courses. Other examples and applications of self-assessment are reported by Brew (112).

Brew (112) provides examples of the use of self-assessment in summative and formative assessment and questions the reliability of this assessment. Students have been found to over-rate themselves when they are developing self-assessment skills and under-rate themselves at later stages of their education. Boud (1986, #108) described a validation exercise that involved the ‘teacher’ assessing the student and then the teacher and self-assessment compared with recognition for consistency. Third party mediation was considered a feasible adjunct. Woolliscroft et al. (113) provided medical students with a schedule against which to self-assess. They noted that some students had totally unrealistic self-assessments and advocated that such students should receive intervention and support from a clinical tutor who had the potential to become a mentor and role model. In 1986 Boud argued that this did not represent true self-assessment as the students had not determined the criteria for assessment, although in a later publication, Boud (114) considered that such schedules were valuable tools in encouraging students to reflect about their own learning needs. He defined the elements required for good self-assessment practice and these included students’ engagement with and reflection upon the learning material leading to increased understanding and justified judgment. He considered that teachers should encourage students to develop their self-assessment skills and that “this is most likely to occur when self-assessment is an integral part of learning activities and not an appendage or afterthought”.

Self-assessment in dentistry has been reported by Wetherall and Mullins (115) who used self-assessment in a clinical teaching program. One of the course objectives documented by the students was “accurate self-evaluation”. In addition to student self-assessment, a learning journal was a required element of assessment. The authors noted that students required and valued tutor feedback in support of their self-assessment and that there must be a relationship with the tutor based upon trust. They expressed concern about those students who consistently over-rate themselves and noted that self-assessment was influenced by culture in that some of the students did
not believe that it was their position to grade themselves highly. They conclude that it is the responsibility of tutors to encourage students to develop and value self-assessment skills.

**Evaluation of experiential learning programs**

Thorpe (93) interviewed participants in an experiential learning program and reported that the students valued experiential learning and reflection. Details of the evaluation methodology are not described. McLeod et al (116) defined four stages to experiential program evaluation. They described these as; a) evaluation of the outcomes of the program, b) evaluation of applicability to other areas, c) evaluation of program “end” (i.e. where the students go to and what they take with them) and d) implementation of evaluation findings.

Guba and Lincoln (117) described the evolution of evaluation practice and coined the term “Fourth Generation Evaluation”. They described this as being “evaluation that moves beyond mere science – just getting the facts – to include the myriad human, political, social, cultural and contextual elements that are involved”. They advocated that evaluation must allow for the different value constructs that individuals bring and take from a program and considered that “traditional” evaluation was based primarily on the values of the person who designs and implements the evaluation. They considered that evaluation must have an action orientation that involves negotiation with all of those involved in the program to ensure that there is no disenfranchisement. They also noted that, “stakeholders can be empowered or disempowered through the selective dissemination of evaluation findings”. The need for responsive focusing through inclusion of all stakeholders in the development of the evaluation methodology, and a “constructivist” approach that unites the interdependent participants is advocated. The authors discussed the inter-relationship between ‘Fourth Generation Methodology’ and Action Research, acknowledging, “positivists reject all relativist views ...... as not only seriously in error but pernicious and repugnant”. Guba and Lincoln provided examples of such evaluation and defined the product as being an “area for negotiation of claims, concerns and issues”.

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Boud (118) described three elements of evaluation of self-assessment. He considered these to be essential, and that they should comprise: evaluations of effective establishment; improvement in learning processes; and overall, outcome-focused benefits. He noted that the first two elements were readily evaluated and that positive outcomes were measured, but noted that there had been few long term evaluation studies making it impossible to comment on the third element of the evaluation.

Rural Oral Health

"I reckon I'm in a position to rationalize and defend an experiential learning framework with reflection as the central theme. All of the self-assessment work I did last year will help develop this bit but in view of the potential to take students out to the bush, I really need to work out how I can best recruit others ie. the profession, stakeholders etc etc. Actually need to review potential for rural program – is there a need? What have other people done? Hard to work out which bit I need to do first. I am sure that the key to any rural program will be getting everyone to 'own' it. I'm sure there must have been stuff written about this too".

DJC November 99

Oral health status in rural communities

The Australian Health Ministers’ Advisory Council report, Oral Health of Australians: National planning for oral health improvement" (119), noted that “poor oral health is evident in the Indigenous community, Australians on low incomes, rural and remote area dwellers and the dependent elderly”. The report stated that rural placements for undergraduates, was one of a number of innovative programs for delivery of dental services. The National Advisory Committee on Oral Health (NACOH) established as a consequence of this report, continues in its work to develop a draft national oral health plan.
In 1998, the Senate Community Affairs References Committee \(^{(120)}\) published a report on public dental services. In submissions to the Committee, there was “widespread acknowledgement” that Australians living in rural and remote areas were subject to “particular disadvantage”. Similarly there was general support for targeted groups, including those living in rural and remote communities.

Slater \(^{(121)}\) examined completed courses of dental care provided in the existing public dental sector in Queensland over a two-year period. Oral health status or needs of those unable to access such services were not considered. Slater reported that more oral surgery services, primarily dental extractions, were provided in rural areas and that indigenous people and rural residents were more likely to attend for emergency treatment only.

In a review of the experience of dental caries experience in the indigenous community, Martin-Iverson et al. \(^{(122)}\) noted that the majority of indigenous communities are isolated with limited access to oral health services and are therefore defined as an ‘at risk’ population for dental caries.

Brennan et al. \(^{(123)}\) investigated the relationship between services provided in the public sector and geographical location. They observed that public dental care provided to non-metropolitan residents was more likely to include “restorative, oral surgery and prosthodontic services” and less likely to include preventive care. In this descriptive study, it was also noted that rural residents eligible for public care, had higher mean numbers of decayed and filled teeth than metropolitan residents. Their study identified the “uneven geographic distribution of oral health and disease”. A more recent report from the AIHW \(^{(124)}\) noted that despite a considerable improvement in oral health of adults in Australia, such improvements do not extend to public patients living in rural areas. In 2001-2002, the percentage of edentulous patients was higher in rural areas (9.2%) than in urban areas (5.5%). Rural patients had more missing teeth, fewer filled teeth and a higher number of decayed teeth than their urban counterparts. The AIHW also reported in 2002 \(^{(125)}\) that there had been “slightly improved” availability of public dental care to eligible rural and remote patients from
1994-96 to 1999. The report noted, “geographic inequalities in access to dental care continue to exist in Australia”.

Steele et al. (126) describe the population and service provision data relevant to oral health care in West Australia (WA). Using postcode analysis, the authors reported that more than 85% of dentists in WA worked in Perth or the major urban areas and 15% worked in rural and remote areas. Of a population of 1.7 million, 13% lived outside these major areas and the authors reported that 65% of Aboriginal people resided in rural and remote areas. They made recommendations to address this disparity in service availability for Indigenous communities and amongst these, briefly described a “pre-graduation internship year” that would provide rural placements for dental students. These placements would allow students to provide direct care (under supervision) and enhance their understanding of rural practice to “enhance the movement of dental practitioners to rural practice”.

Rural health workforce

There is a well-documented shortage of medical and allied health professionals in rural and remote areas of Australia (127-137). The Australian Medical Workforce Committee report published in 1996 (138) was commissioned in response to the problem of attracting and retaining an adequate supply of medical practitioners to rural and remote areas of Australia. The resultant report highlights several areas for consideration and includes a review of the disincentives and attractions of rural medical practice.

There have been several reports documenting the advantages and limitations of a rural medical career (139-141). Quality of life factors are documented as exerting a dominant positive influence (142). Consistently, issues such as restricted procedural work, professional isolation and lack of cultural and social facilities are perceived limitations of rural medical practice. While there are undoubtedly many common areas between medical and dental practice, there are also fundamental differences, such as the absence of an internship for the dental graduate and the predominance of procedural work.
In June 1998, a Rural Health Information Paper (No. 2) (143) published by the National Rural Health Alliance stated that, "Dentists' reasons for not taking up rural practice parallel those of doctors". The report specifically referred to "lower earning capacity, lack of professional support and lack of employment, health and educational opportunities for spouses and children". It is not unreasonable to assume that measures introduced to address the shortage of medical and allied health personnel in rural areas would be of benefit to the dental profession.

One of these initiatives provides medical and allied health students with opportunities to work in rural areas of NSW during their education. A review of undergraduate rural programs is detailed below.

A second pertinent and related initiative is the establishment of University Departments of Rural Health (UDRH) throughout Australia. The UDRH were initiated by the Commonwealth Department of Health to provide a multi-disciplinary educational opportunity for students (144). As noted by Humphreys et al. (145), the role of the UDRH is to "contribute to an increase in the rural and remote health workforce through education and training programs, as well as a reduction in the health differentials between rural and urban people and between indigenous and non-indigenous peoples". The importance of supporting dental student placements is specifically highlighted in the current work of the UDRH and, as a co-author of this paper, Lyle described the successful relationship with the Faculty of Dentistry in the early development of such placements (145).

Dalton et al. (146) described the development, implementation and evaluation of a common rural primary health care model in which medical, nursing and pharmacy students participated. The intention of this study was to encourage cooperation and collaboration in the rural workforce and the authors considered the program in terms of impact on teamwork, practicalities of administration and development of a cohesive and cooperative interdisciplinary team. They recommended that, "true interdisciplinary education must be achieved through an experiential framework".
Oneha et al. (147) described a multidisciplinary collaborative community-based educational program in which students identified three program components as having the greatest impact on their learning. These were listed as (1) the "multi-professional" approach to healthcare, (2) the community setting and (3) an understanding of the community culture. The authors concluded that the community-based experience had a "profound" impact upon student learning and future career direction.

McAllister et al. (148) discussed the experiences of 156 undergraduates from 14 health disciplines of the University of Sydney. This report included one of the dental students who participated in the pilot program described in Chapter 5 of this thesis. They stated that rural attachments increased student awareness of the strengths and limitations of a rural career, indigenous health issues and the value of teamwork. They observed that the majority of students, independent of their anticipated future career direction, found the rural attachments to be a positive experience that they would highly recommend to other students. The authors recommended that funding for rural attachments should be increased to allow increased undergraduate participation and that opportunities for postgraduate rural attachments needed to be developed.

**Rural oral health workforce**

Authors of recent publications about rural oral health have reviewed adult access to dental care in rural and remote areas of Australia. Stewart et al. (149) reported that in regard to general oral health outcomes, "persons from rural and remote locations were found to generally have less favourable results than persons from urban locations". They suggested that the differences in dental service provision may reflect barriers to oral health such as "inappropriate labour force resources or uneven geographic distribution". The problems of health care provision associated with analysis of the medical workforce apparently also extend to the dental profession found by the Australian Institute of Health and Welfare (AIHW) (150) which has stated that "in Australia, the availability of dentists is considerably lower outside of major urban locations".

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Szuster and Spencer (151) reported that in 1994, there were 2,733 dentists practicing in NSW. Of these, nearly one in five (19.9%) were approaching retirement and 17.5% (477) were female. The University of Sydney provided 2,153 (78.8%) of dentists working in NSW. Nationally, there were 51.2 dentists per 100,000 Estimated Resident Population (ERP) in capital cities and 28.7 dentists per 100,000 ERP working outside capital cities. In NSW there were 54.8 and 29.6 dentists respectively. The authors used statistical divisions to describe locations within NSW and noted that the Central West had 25.4 dentists per 100,000 ERP (44 dentists) and that the Far West had 28.9 dentists per 100,000 ERP. The total number of dentists working outside Sydney was 341, including dentists working in regional areas such as Newcastle.

These authors discussed the availability of dental services as a determinant of dental care and oral health. Using postcode analysis to define rurality they report that on a national basis in 1991 there were fewer dentists in rural areas, with NSW having one of the lowest rates of public practitioner supply. They reported that there are approximately 6.1 private dentists per 100,000 ERP and 1.8 public dentists per 100,000 ERP in rural areas compared with 41.6 and 7.2 respectively in major urban areas.

The inequitable distribution of oral health practitioners in rural and remote areas of NSW is of concern to the dental profession in this state. The lack of detailed substantive evidence for this concern is however evident and the profession in NSW has relied on the anecdotal experiences of practitioners in these areas.

In 2002, NSW Health commissioned a dental workforce review to inform future direction. Although this report has not been released for general distribution, the authors defined the distribution of dentists throughout NSW based upon statistical divisions and in terms of dentists per 100,000 ERP. They reported that the rate was 58.4 in the Sydney division compared with the lowest rate of 17.3 in the Central West division. A total of 2384 dentists worked in the Sydney division (76.3% of practicing
dentists) and 742 dentists worked outside Sydney, including 11 dentists who worked in the Far West division.

In parallel with the current project, funding was obtained through the Commonwealth Department of Health and Aged Care, through its Rural Health Support, Education and Training (RHSET) program, to undertake a definitive study of the rural dental workforce. The project resulted in the development of a Rural Dentists Database (RDD) that facilitated the collection, collation and analysis of data from dentists practicing in regional, rural and remote areas of NSW (152).

The RDD contains details of all dentists practising outside postcodes 2200 in NSW in 2000 and was constructed using data from the Dental Register, the local knowledge of Regional Research Officers and the Australian Dental Association (NSW Branch) (ADA NSW) membership lists. The RDD also relates practice details to ADA Divisions and to the Accessibility / Remoteness Index of Australia (ARIA) (153). The construction of a web-based Rural Dentists Distribution Map (RDDM) was based on the data from the RDD and the map is available online (http://www.timemap.net/epublications/2001_rural_dentists (password and log in: dentfac)).

The RDD used a postal survey of all dentists in regional, rural and remote areas of NSW and showed that the existing dental workforce will be further depleted within the next 5 years. 93% of respondents indicated that they intended to leave their current positions within the next 5 years and 60% of this group would be retiring from dental practice. It was recommended in the report to RHSET that rural practice should be promoted to new graduates as older practitioners characterize the rural workforce with only 5% of respondents graduating within the previous 5 years. In addition, there is a need to determine existing and potential support strategies for female dentists, their spouses and children. 21% of respondents were female and there were no female respondents in those areas with ARIA ratings of Moderately Accessible (MA), Remote (R) and Very Remote (VR). Approximately 50% of the current student population is female. It was also noted that the professional benefits of ownership of rural dental
practices and the personal benefits of a rural lifestyle are the primary reasons for working in rural areas and should be included in any promotion of rural practice within the profession. The report concluded that "it is apparent that there are numerous factors that influence career direction and with such diversity there can be no panacea". It was stressed that whilst strategic planning would be required at a professional level, the need to support dentists at an individual level required emphasis. Suggested strategies to improve both recruitment and retention included, "increased exposure of students to rural dental practice". The outcomes of this project were disseminated within the profession and are supporting strategic planning at both a State and National level.

"There is obviously a need to address the rural oral health workforce issues as they have a direct impact on the differences between city and rural oral health status. Want to have a student-centred positive experience for the students so what have others done? What works? How do we know it works??"

DJC February 2000

"Too much information!! Keep finding more references and they all kind of relate to each other. Not sure how I can fit this lot together to make sense...really sits well with the whole reflective thing though. Had to actually go with it (the rural program) and then review more information. True to action research theory really. Things like how to manage all of these students all at once. This will be the key to taking this forward but its hard to get your head around. Think that I will have to structure all of the information under categories and then add as I go along."

DJC October 2000

RURAL PLACEMENTS

Rural placements in medical and allied health education

Kamien and Butfield (154) noted that medical student education was "heavily skewed towards urban tertiary-referred practice" and lamented the lack of rural exposure for
students who were beginning to decide future career opportunities. They called upon medical schools to provide leadership in this area.

In 1997, Norington (139) provided a historical overview and detailed developments in Federal Government education initiatives to address rural general practice workforce needs. She stated that the thrust of Government initiatives was to increase the number of rural students entering medical school and increasing the curriculum content and experience for all students. She reported that, “focusing on undergraduate education is considered to be vital in view of overseas research”. A Rural Undergraduate Steering Committee (RUSC) was established as part of the Commonwealth Government’s General Practice Strategy and this group identified three main priority areas for change. One such area was “Curriculum” and RUSC opined that rural health should be integrated into the mainstream medical curriculum while allowing opportunities for enhanced rural learning experiences.

Laurence et al. (155) reviewed the progress of RUSC in 2002. They noted that $1.74m was allocated by the Government for the implementation of RUSC initiatives and they reported that the medical curriculum at Adelaide had undergone “real changes to the curriculum in favour of rural health”.

The merits of rural attachments for undergraduate students have been well documented (137, 139, 147, 148, 156). The evaluation of such rural placements and attachments generally focus on the short-term outcomes in terms of positive impact on students’ attitudes and intentions. There has been little documented evidence of the impact of such programs on practitioner recruitment.

Piterman and Silagy (63) surveyed 192 doctors who had participated in rural training positions. While 72% stated that they had enjoyed the experience, only 28% felt that their experience had influenced their future career direction in favour of rural practice. Rolfe et al. (137) reviewed graduates of the University of Newcastle Medical School and stated that those who had participated in rural attachments were more than three times as likely to work in rural areas on graduation. They noted that students may have
already selected a rural career prior to participation in the program but commented that many medical students remain uncertain about their future careers until a late stage of their education. Hays et al. (136) interviewed doctors in rural Queensland and determined that those who had experienced rural practice through attachments, internships and locum appointments, were influenced to stay and practice in rural areas.

Azer et al. (157) surveyed 100 first year medical students (97% response rate) and found that 86% of the respondents intended to complete their internship in a rural area. While this seems a very high proportion, they also noted that up to 70% of students from non-rural backgrounds based their perceptions of rurality on media portrayal while all of the rural students used personal experience as a basis for decision-making.

Talbot and Ward (158) described a four-day rural program for self-selected fourth year medical students that was evaluated using pre- and post-questionnaires. The aims of the program were to develop rural role modelling opportunities, provide early exposure to rural practice and to allow students to compare rural and metropolitan practice. After the program there was an increase in interest in a rural career (48% expressed interest before and 81% after the placement) with 2 participants expressing less interest after the program. The authors noted that, “there is no real knowledge at an undergraduate level as to how doctors really live their lives in rural areas”. They stated that there was a need to provide undergraduate experiences to stimulate students’ interest in rural practice and that repetitive exposure is required to reinforce the positive attitudes developed during such placements.

Culhane et al. (159) evaluated the effect of a four-week rural placement on medical students’ self-perceived procedural competency. While the overall competency level achieved was lower than expected, the authors concluded that rural attachments also play an important role in practical skills training for medical students.

In 2002, the Centre for Health Research and Practice at Ballarat University (160), compiled a comprehensive, evidence-based literature review entitled ‘Recruiting and
Retaining General Practitioners in Rural Areas’. Chapter 2 of the report reviews the predictors for recruitment of GPs to rural areas and specifically considers “Rural Preceptorships”. The authors note that, “the link between rural placements in training and later working in rural practice is more tenuous than that between rural background and rural practice”. However the authors noted that rural preceptorships are one of only two major predictors for rural careers based upon their evidence-based ranking of the literature. They also noted that the predictive association between preceptorships and future rural career is much greater in the international literature and they postulated that that this was due to less powerful statistical methods being used in Australia. They acknowledged that the two factors (rural background and rural preceptorships) are not mutually exclusive and that exposure to rural life is the “cornerstone of attracting doctors to rural areas”. Finally they concluded that the “focus on such initiatives is well warranted and should continue and expand”.

Delaney et al. (135) described a students’ perspective on rural medical education and noted that the positive work and study experiences gained in rural areas would “help students to choose a future rural medical career”. They also noted that the geographical distances can be a barrier to teaching and learning and advocated educational support through videoconferencing and the Internet. Kamien (161) acknowledged the concerns of educators that students in rural areas are not educationally disadvantaged. Using logbooks of experience, interviews and assessment outcomes as comparators, it was suggested that there is “a strong academic argument for greater medical student exposure to rural specialty practice”.

Several authors have described rural placements for students of nursing. Hegney et al. (162) for example, examined the factors that influence nurses choosing to work in rural and remote areas of Queensland. They stated that previous exposure to rural or remote professional life was the “most compelling” reason for nurses choosing rural and remote practice. An analysis of the reported data however suggests that specific undergraduate exposure was not a major influencing factor for these nurses working in rural or remote areas.
Barritt et al. (163) surveyed rural general practitioners who had supported undergraduate medical student placements. 81.1% of those who had hosted a student perceived this as a positive experience for their professional development however over 50% described a negative impact upon income generation. 95% were willing to maintain involvement with the program advocating quality assurance points, remuneration and academic status as incentives. Couper (164) noted that attitudes to students vary from “unnecessary nuisances” to “necessary evils” to “missionaries”. He discussed the practical elements of placement development such as accommodation, length of stay, program content and supervision. He concluded, “rural doctors should work constructively with universities to ensure as much exposure as possible, in the most effective way”.

**Rural placements in dental education**

Whilst not specifically prioritising rural components of dental education, the need for dental schools to embrace community needs has been reported in the North American literature.

Formicola et al. (165) in their review of the role of dental schools in the provision of population-based care, described the need for schools to identify “those population groups in its environment that are receiving inadequate care and determine how it (the dental school) can help solve the problem”. They described the need for the medical and dental professions to have community responsibility and to endeavour to develop awareness of, and become more proactive in, social awareness in dental curricula. The authors described an educational project at Columbia University that has identified community needs, which involved collaboration at all levels and has resulted in patient-centred education.

In a special edition of the Journal of Dental Education, the problems and feasibility of such programs were discussed and examples provided. The over-riding need to develop collaborative programs and recruit professional and community stakeholders is identified throughout. Hardigan (166) discussed the cost of dental education and
commented on the lack of focus on productivity and also the lack of desirability to increase productivity. He advocated consideration of partnerships with organised dentistry that would “entail moving portions of clinical education beyond the walls of the school to community practices and facilities”.

Dodge et al. (167) provided a cost benefit analysis of extramural programs and questioned whether such programs actually generate net savings. The authors provided a model for savings involved when relocating student training to extramural locations. They concluded that for there to be any net gain, “a significant proportion” of students would need to undertake their training off campus and there would be the potential for additional costs dependent upon the existing infrastructure and support.

Jacobson and colleagues (168) explored the curriculum issues involved with community-based programs. They described three different types of program and outlined the need to determine student competency prior to placement. They noted that students who have not achieved competency levels might be required to forego their community placements and remain in the University clinics. The community programs at the University of Michigan for example, have been developed as an integral component of curriculum re-structure and comprehensive care educational models precede the final year of community-based experience. The authors outlined the general curriculum changes implemented and described the need for development of presentation skills, treatment planning, behavioural sciences and principles of evidence-based practice. The variation in actual experience is described and the authors advocated, “core links” between faculty and community-based educators. They considered the fundamental elements to be control of the educational content, ensuring that clinical supervision and quality of care are maintained, and determining the cost effectiveness of the program. In discussing both staff development and student support, the authors noted the importance of an “asynchronous learning network” to deliver “any time, any place” support. The use of Information Technology to facilitate group and peer learning was also advocated.
Marshall and Formicola (169) described the management issues involved in community-based education. As multiple sites are developed, they considered that administrative support was pivotal to the success of community-based programs. They discussed the various management models that can be used and described location, staffing and organizational relationships, largely from an administrative perspective. They suggested that “community-based dental education is an idea whose time has come” and that “sound management is critical” for success of such programs. They considered that community-based education would be considered successful when schools were able to “demonstrate that students are receiving quality education, that patients are satisfied with their care and that access to care is improved for a given population”. They considered data collection essential as community-based education develops.

Litch and Cameron (170) analysed the significant legal issues relating to community-based education in North America and highlighted strategies to manage risks. They produced a checklist of obligations on the stakeholders and advocated the establishment of an “affiliation agreement”. In their comprehensive article, the authors discussed patient care provided by students, malpractice insurance, local protocol and policy, and occupational health and safety. Interestingly, the authors described “private practice” placements and note the potential legal ramifications of these.

Henshaw et al. (38) described the role of community-based education at Boston University Goldman School of Dental Medicine. They noted that extramural education opportunities feature in every postgraduate course provided. The authors referred to “externships” in the fourth year of undergraduate studies that allowed students to work in various community settings, including private practice. A total of 22 community settings were used and community dentists served as non-salaried program mentors, with academic support from within the school. The authors noted that the involvement of the profession had “helped considerably” and that there had been community benefits such as increased access to care and involvement of the community mentors with dental education.
Berg and Berkey (1) provided an outline of community-based education at the University of Colorado. They noted the importance of rural settings for such education and they mentioned various practicalities, such as accommodation and transport, associated with such placements. In an evaluation of their program, Berg and Berkey used “service logs” (to quantify experience), written assessments by students and mentors and post-graduation questionnaires. They estimated the market value of treatment provided as being ~US 60,000 per student (up to 10 weeks per placement) and reported that “about 80% of respondents” evaluated the program positively in terms of clinical experience and personal development.

Community-based dental education programs are integral curriculum components at the Universities of Columbia (171), Connecticut (172), Florida (36), Marquette (35), Michigan (173), New Jersey (34) and Pennsylvania (37). The importance of site selection for both educational and community needs are recurrent themes and all authors provided practical advice, based upon experience, for the implementation of community-based education. It is evident that there is a high level of financial support for these programs, all of which involve collaboration at all levels with the community, state registration boards and local service providers. Administrative and senior academic support have been prioritised by the various institutions. Courts et al. (36) and Cinotti et al. (34) provided examples of guidelines and implementation models. The students of all of these schools have been educated in a clinical competency framework and the authors described the need for assessment of student competency prior to placement. These studies are descriptive in style and formal program evaluation was under development in most schools described in the studies.

Jacobson et al. (172) refer to a student survey that indicated that students “strongly support continuation” of their extramural program. The students stated that the community-based education program built self-confidence, promoted knowledge and understanding of the factors that affect oral health behaviour, enhanced the application of foundation knowledge and skills in a “real world” setting and facilitated “positive attitudes, behaviours and professional career responsibilities about serving underserved populations”. The authors also noted that the evaluation included financial and public
relations components. They stated that there was a net cost to the community centre as a consequence of involvement and described the need for cross financing with other clinical areas in the centre. There was no detail of the public relations evaluation.

The extent of community-based education in Pennsylvania is described by Galbally et al. (27). They anticipated that by 2003, a total of 13,500 staff would be involved with their program, supported by 35 Full Time Equivalent academic staff. They also estimated that the program would generate "in excess of $US1.5m".

In summarising the issue of the Journal of Dental Education devoted to community-based dental education, Bailit (174) described the major findings and recommendations of the Macy project, a 24-month study of the feasibility of community-based dental education programs. It should be stressed that the described community-based education programs involved student placement in a multitude of clinical settings and that there was no formal consideration of rural programs. He considered the advantages of community-based education as being; more and broader clinical experience, greater opportunity to develop self-confidence and better understanding of how to manage practices, while "caring for the underserved".

Bailit (174) outlined the issues facing schools that elect to provide community-based dental education. He commented that such programs are "more effective if they are fully integrated into the curriculum". Staff development and assessment of student competency prior to placement were recurrent themes and the need for both formative assessment of placements and an ongoing evaluation process were emphasised. Numerous practical details and guidelines were discussed with an emphasis placed on "clear lines of communications to the clinical and academic leaders of the school". In summing up, Bailit stated, "there is no one best model of community-based education, and each school must design community programs that make sense in its local environment". Tennant and McGeachie (175) described a new model for dental education that resulted in the role of the dental school evolving to "be like an orchestra conductor". In an attempt to address some of the issues facing dental education they advocated that the University could be responsible for establishing a core curriculum
and outsourcing "a significant proportion of the educational component" to supported professional colleagues.

There are few references to rural educational programs for dental students. In a paper by Shreve et al. (176) an extramural rural dental education experience in Florida was reported. The authors described a collaborative project that allowed dental students to provide dental care for a "previously underserved population". They reported that this had resulted in "valued contributions to the education, research and service components of the dental school's mission" however the impact upon the learner was not specifically discussed.

**Australian experience**

Since the first round of accreditation visits in 1996, the Australian Dental Council (ADC) (177) has established guidelines for dental school assessment and accreditation. One of these guidelines required curricula to be responsive to the oral health needs of communities and "to work with a wide range of dental health professionals and other agents". The accreditation documents for each of the Australian Dental Schools (178-182), indicated that the schools generally enjoy good relationships with key stakeholders and as a consequence, community-based education has been integrated into dental curricula to a varying extent. At the time of the accreditation four of the five Universities detailed rural practice opportunities and a commitment to expanding such opportunities. The fifth University documented its intent to expand an existing "Outreach Program" to optimise rural opportunities.

Further detail may be gleaned from internal reports and documentation from the Schools. The School of Dentistry, University of Adelaide, and the Faculty of Dentistry, University of Western Australia provided details of rural programs for final year students of these institutions. In both cases, students were rotated through various rural centres throughout their final year, although the University of Adelaide has established a partnership with the South Australian Centre for Rural and Remote Health that provides dental students with the opportunity to spend two weeks in Whyalla on an
ongoing basis throughout the year. This initiative is reported by Wilkinson et al. (\textsuperscript{183}) in the context of the establishment of the South Australian Centre for Rural and Remote Health.

Richards [, 2002 \#22] reported that, "the crisis in recruiting and retaining staff is as serious in dentistry as it is in other areas of health care. In general the public dental services have not been able to attract staff to rural and remote positions". In 1998, the Clinical Services Delivery Working Unit of the SA Centre for Rural and Remote Health supported arrangements for undergraduate dental student rotations to Port Augusta. Two final year students attended for 9 days per fortnight and were supported by a visiting academic mentor one day per week. The South Australian Dental Services dentist supervised the students for 2 days per week and the students spent one day per week with the Royal Flying Doctor Services and the Aboriginal Health Liaison Unit. As a consequence of the program, patient waiting lists have been reduced, routine dental care is delivered in a cost-effective manner and an analysis of student responses provided "very positive feedback about the program and evidence of a significant change in students attitudes to rural practice".

In 2002, Richards et al. [, 2002 \#162; , 2002 \#22] reported on the costs and benefits of the rural program. They stated that the primary objective of the rural undergraduate program was to influence the attitude of students to rural practice and they noted that the service benefits complimented this primary objective.

Final year students in WA completed a similar type of program. Peachey (\textsuperscript{184}) described the work being undertaken at the Centre for Rural and Remote Oral Health (CRROH) to improve oral health in Western Australia. She stated that CRROH had worked with the School of Dentistry to develop a "Rural Oral Health Outplacement" program that provided final year students with the opportunity to spend time in three different private and public dental clinics in rural areas of WA. Peachey noted that, "reports from both supervisors and students have shown positive results" and that the CRROH plans to develop similar programs in the Northern Territory. A report on outplacements (\textsuperscript{185}) provided guidance for establishment of such outplacements.
Summary

Until 1994, the Faculty of Dentistry at the University of Sydney, provided students with an opportunity to spend two weeks in regional community dental clinics. The students attended in pairs on a rotation basis. The program was not independently evaluated however brief comments are available in the Faculty’s review of final year students (186) and year 1 graduates (187). While the student feedback was generally favourable, in response to open-ended questions, the students and new graduates expressed concern at the lack of educational structure of, and the variable support received during the rotations. In the absence of clear academic responsibility for the placements, the program was discontinued in 1995. This thesis describes and evaluates the Rural Placement Program offered by the University of Sydney since 2000.

Collaboration in Learning

"Excellent conversation – lots of common ground but different takes on how to go about it (running rural placements). Need to work through EXACTLY how I can evaluate the outcomes - need more than just enjoyment. Need to show that they are learning through reflection, making a contribution, that it’s a collaborative thing. Reflecting on this, it seems that the central theme of both the program and my research on it is actually the reflection. There is lots of common ground between me and the students – we are all learning and reflecting and there must be a way that I can draw this all together so I can document it all”.

DJC March 2000

In 2002, the Minister for Education, Dr Brendan Nelson, released a series of discussion papers under the title ‘Higher Education at the Crossroads’. In the first of these papers it is stated that, “The obligation for community involvement is one that rests with all higher education institutions, but regional institutions and campuses clearly have a special responsibility to their communities”. It is noted that higher education institutions can achieve community involvement in a variety of ways, and specifically describes the “tailoring of specific courses for regional needs”.

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It is further stated that, “Engagement needs to become an integral part of what the regional university does, not an adjunct to its existing function”. In the absence of regional dental schools it follows that the metropolitan based institutions should seek opportunities to engage the community through extra-institutional educational programs as an essential element of metropolitan-based education.

The problems associated with the “dual orientation of the professional school” are acknowledged by Schön (3). He considered that a central “reflective practicum” provided a bridge between theory and practice and therefore between the University and the profession. He provided examples from business, architecture and medicine to describe curriculum reform that had resulted in a greater mutual understanding of this dichotomy. He noted that the education provided by professional schools is often blamed for the problems affecting both individual practitioners and the profession as a whole. Through curriculum review and collaborative input to a reflective practicum, Schön believed that the opportunities for community engagement, institutional revitalization, increased participation in teaching and drive professional evolution.

In Australia, there is an increasingly evident ideological view of higher education as a one-stop shop for buying education, with the discussion paper noting the emerging view that “universities are places where consumers purchase educational commodities”. Within this concept is the expectation that students should be educated to the highest of professional standards with little awareness of the real constraints of funding, policy and protocol. As noted by Schön (3), professions are willing to devolve responsibility to academic institutions although there is an expectation that academic outcomes are in alignment with professional expectations.

In order to reconcile ideals and practicalities, community involvement in experiential learning must incorporate orientation to academic and bureaucratic constraints (188).

Taylor (189) described “shifting professional boundaries” and the implication that these, along with efforts to influence, control and prioritise professional education, have on
the traditional roles of professional teaching and learning. She noted that there has been a huge expansion of the “stakeholders” in professional education and that the “development, validation and accreditation of professional courses are subject to diverse powerful influences”. The need to balance the outcome-focused interests of employers and government with an emphasis on reflective learning and practice are examined by Taylor and she advocated the establishment of professional education as a distinct element of tertiary education. The need for collaboration and partnerships with professional colleagues is framed in the context of the development of inter and intra-personal self-directed learning. Taylor described the “uneasy partnerships” between the various stakeholders in professional education and recommended that professional education must be based upon partnerships in curriculum design, implementation and evaluation.

Watson (190) considered professional educators as being “presented with a complex pattern of pressures of demand, supply and quality in designing, delivering and managing professional education”. He suggested that the stakeholders in professional education comprised a triad of sponsors (government, profession, employers), providers (higher education institutions) and “clients” (students, consumers of professional services). Taylor (189) drew attention to the definition of students as “clients” and considered that Watson’s decision to refer to students rather than “learners” failed to recognise the significance and importance of an ongoing commitment to learning. Bines suggested that a triad of stakeholders may be an overly simplistic representation and considered that the intra-professional differences in view may in fact be greater than those between professions (191,192).

Barnett et al (193) compared the control of professional education in nursing, pharmacy and teacher education in the UK and observed that there were varying degrees of control by regulating bodies and professional groups. It was their opinion that the partnerships between these groups and the “host site” of professional education should be strengthened and that this could be achieved through collaboration and active participation.
Beresford and Croft (194) suggested that the recipient of the professional service should also be considered as a key stakeholder in professional education. In the context of social work education, they considered that this role should not be restricted to direct receipt of care but in the “design and delivery of professional education in the classroom”. Taylor (189) considered that there were confusing and conflicting perspectives on “client” involvement and concluded that this was one of the greatest challenges involved with professional education. She considered that “negotiated partnership”, reflecting a “power sharing” agreement, was central to professional education and described the opportunities for empowering communities and individuals in the community care arena.

Collaboration and partnerships in professional education have additional benefits. The role of individual professionals, acting as mentors, facilitators or clinical supervisors, facilitates the development of “professional socialization” in the learner (188). This term, as described by Ewan (195), refers to the process of becoming a professional, with the associated skills and abilities to practice. She considered that this exposure to “professionalism” as being part of a “hidden curriculum” rarely taught or assessed within the curriculum. She further stated that “professional socialization” was developed purely through interaction with others, advocating that opportunities for such exposures be optimised. Pickering and McAllister (196) considered that changes in population, higher education and professional practice provided an opportunity for innovative responses in a clinical teaching and learning context. They consider “social responsibility” to be a major focus of education and advocate collaborative approaches to the development of appropriate curricula to fulfil this responsibility.

The establishment of partnerships in professional education serves to empower, improve quality assurance, de-mystify the setting and boundaries of professional education and actively engage stakeholders in curriculum development. In order that dynamic and mutually rewarding involvement in professional education is attained, educational collaboration should be encouraged and respected. As Boud noted (59) “people and collegial relationships directly affect the quality of what we produce”. 67
CHAPTER 4
RESEARCH METHODOLOGY

Since the 1960s, educational research has been divided between two different basic methods. These are the scientific-empirical tradition and the naturalistic-phenomenological mode (197). A traditional positivist approach would, by definition, exclude any consideration of individual thought, interpretation and action (198). The outcomes of this research project, in which I aim to investigate the response of the learner to an experiential rural educational program, cannot be solely measured in terms of numbers or probabilities. The importance of the individual and his/her construct of meaning cannot be scrutinised using control groups, probabilities or statistical analysis.

In the realms of experiential learning, replication of learning experiences, and the response of the individual to these experiences, is virtually impossible. Whilst the strengths of the positivist approach lie in precision and control, teaching and learning are unique experiences and it is essential to allow for interpretation and construction. It was important therefore to consider a methodology that allowed elements of both the qualitative and quantitative approaches: triangulation allowed both methods to support each other for enrichment and insight.

As noted in the NHMRC report ‘Ethical aspects of qualitative methods in health research’ (199) participatory action research, with its roots in educational research, has become increasingly prominent in health research and the methodology and epistemology of such research stress the importance of reflection as “part of normal research practice”. This research methodology is readily integrated within the teaching milieu and provides an opportunity for a constructive and practical solution to the teaching/research dichotomy that characterises some aspects of tertiary sector education (200). As noted by Kember and Kelly (201) action research aims to “promote change in specific circumstances” and in the context of clinical teaching in an
increasingly student-centred curriculum, provides essential input to the development of appropriate assessment strategies.

**Action Research**

As the name implies, Action Research is intended to result in change ("action") and understanding ("research") or in general terms, action research provides the flexibility and responsiveness that are needed for effective change at the same time that it provides an opportunity for data collection, analysis and conclusions (69, 201).

A more formal definition of Action Research is "a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which these practices are carried out." (69) This methodology allows the essential qualitative research components to be integrated, the use of quantitative data to be incorporated to enrich findings and it has its basis in reflection and critical enquiry. In the context of this thesis, it provides a method for thinking systematically about what happens during the rural placement program, implementing critically informed action where improvements are desirable and monitoring and evaluating the outcomes of change for continued development. This methodology, incorporating both qualitative and quantitative methods, provides the most appropriate structure to evaluate the program for its reliability, validity, efficiency and effectiveness.

Using the spiral process, as first described by Lewin (42), the process of implementing the program could be broken down into achievable steps and was easily translated into the rural placement program environment. The integral involvement of students and clinical teaching colleagues as co-researchers provided multiple opportunities for critical reflection and action, whilst providing a means of validation of outcomes. The cyclical approach allowed flexibility and promoted critical analysis of both methods and outcomes at every stage, thus fuelling future developments. Whilst described as four separate stages, planning, acting, reflecting and re-planning, during the course of
this research it became apparent that the process cannot be so clearly defined. The use of a variety of data-recording methods ensured that reflective activity was continually documented prior to any formal reflective process and assisted in the final evaluative process.

The Action Research and Action Learning Dynamic
The similarities between Action Research and Action Learning provide a reflective template for this research and also for the participants (students) and co-investigators (rural clinicians and mentors) in the project. Action Learning can be defined as a method by which groups of learners collaborate to optimise experiential learning and Action Research as a method by which groups of researchers collaborate to investigate a common theme (4). There has been considerable debate on the distinction between the two processes and this project has led to the realisation that both are inextricably linked. Both action learning and action research have their foundations in experiential learning and have action and reflection as fundamental components. Action research and action learning may be compared to experiential learning in that both action research and action learning involve learning from experience. Action research, action learning and experiential learning all involve action and reflection on that action. It can be considered that experiential learning is the basis for the learning component of both action learning and action research and that reflection is the central paradigm for such learning.

A teaching and research symbiosis
The analysis and evaluation of new educational strategies is an integral component of educational development and various evaluative techniques have been used to determine the relative merits of change. Action research, through a systematic approach to record keeping, demonstrates a commitment to addressing the problems associated with an element of education and strives to define the changes from the perception of the researcher. The cyclical nature of the research allows the participants continually to deliberate, interpret, negotiate and disseminate the acquired information and results in “a new and enhanced status for the activity of teaching” (201). Involved
educators are able to provide a clearer rationale for what they do and this is based upon personal observations and experience.

In the general context of the evolving tertiary sector and the specific curriculum changes within the Faculty of Dentistry, action research provided the ideal research methodology to combine curriculum development and administration with the implementation of a rural placement program. As defined by Carr and Kemmis (70), there are three conditions that are required for action research to take place. They described these as:

- the determination of an area in which improvements may be made
- the systematic and self-critical implementation of change with successive cycles progressing through the stages of planning, acting, observing and reflecting
- the need for a collaborative approach and widening participation in the project.

This method of research was particularly pertinent in combining teaching in the clinical environment with research activity. As research colleagues in the project, students were fundamentally involved in developing an appropriate action learning strategy while conducting their own action learning within the project framework. In effect, each student’s clinical experience was an action learning spiral; they planned their program, acted, observed, reflected and planned for future learning.

Professional colleagues expressed considerable scepticism about the rigour, validity and reliability of action research during informal conversations.

"It is so hard having to defend my pitch with all these scientists – I’m surprised that they are so blinkered. How do I get the importance of this across to my colleagues when all they are concerned about are null hypotheses, controls and stats."

DJC March 1999
It was apparent that I needed to be able to progress my position in order to achieve acceptance of reform and change. I therefore elected to use action research methodology (4, 69-201-204).

Kember and Kelly (201) noted that action research had "become an accepted approach to both developing and improving courses and to research in education". They noted that this methodology allowed the integration of teaching practice and research through critical reflection and subsequent modification of the strategy under review.

**Action Research methods**

Many methods for data collection to support action research have been described (see for example (4-6, 205)). The final choice of methods for this project was based upon the literature and practicalities such as time available, administrative support and infrastructure. As an integral component of the reflective process, and in addition to reflection upon the project outcomes, methods of data collection were continually modified and refined. It has been noted (see for example (203)) that one of the major limitations of qualitative research and evaluation is the time required for data collection, analysis and interpretation. It became apparent as this research progressed, that the data collections initially selected were inappropriate, inefficient and cumbersome.

Methods of data collection have been identified as falling into three major categories by the NH&MRC (199) and in this project I aimed initially to include various clinical and personal records, feedback from students and diagnostic devices to ensure a broad and comprehensive analysis. All data were recorded within a paper- and computer-based research portfolio.

**Analysis of Research Portfolio**

The original structured, tidy and disciplined personal teaching portfolio evolved into a miscellany of loose papers, pictures and notes. Although an extremely time-consuming and sometimes irritating exercise at the time, the reflections contained within the
portfolio have ensured that this thesis is a factual account of a series of action research cycles. As outlined during each research cycle, the composition and value of the teaching portfolio was reflected upon, amended and restructured, mirroring the research process itself. On completion of the project, the portfolio contained items such as; records of staff meetings and discussions, regular personal diary entries after clinical teaching sessions, correspondence from students, University and Faculty policies and guidelines, relevant literature, copies of assessment records and student logs of experience. Review of the portfolio at the end of each cycle resulted in pertinent material being recorded as computer-based documents.

**Questionnaires and interviews**

Open and closed response questionnaires were used to evaluate the rural placement project, the students' reflections on their experiences and the validity of the research project. Questionnaires were developed in consultation with the staff and students involved and with direct reference to the literature (117, 206-208). External validation was sought and obtained and is detailed throughout this thesis. In addition to questionnaires, students submitted letters, notes and reflective statements as the project progressed and the methods became more sophisticated and aligned to the development of the project. Group discussions had a dual role in promoting student learning and supporting the research methodology.

At various stages of the project (refer Phase 2) interviews were used to obtain data. These varied from one on one interviews with staff and students through group de-brief sessions to large group discussions, and full details are supplied at the relevant points in this thesis. Although taped transcripts formed a large component of the project in its initial stages, the analysis of the transcripts was impractical and the data from them was readily collected in alternative ways.

**Quantitative data**

As previously mentioned, the need for 'hard' data to support qualitative findings was important for triangulation and reporting outcomes to stakeholders. The need to
evaluate the learning outcomes against the actual experience gained required analysis of student logs to determine the numbers of patients treated and the breadth of experience obtained over each cycle of the spiral.

As the rural placement program evolved, inclusion of validation data provided additional objective data to supplement the qualitative findings. Specific detail is provided where appropriate.

All data was analysed using software (SPSS and NuDIST) initially, supplemented with Excel spreadsheets and customised databases as the project progressed.

**Ethical aspects of Action Research**

In selecting a research methodology comprising a predominantly qualitative framework, the suitability and rigour of methods must be considered. In addition, there is a need to be aware of the impact and influence of the project on the research subjects themselves. As this project was an identified Faculty and curriculum initiative student feedback was essential for program development. Advice from the Human Ethics Committee of the University of Sydney was sought and granted. It was imperative that NH&MRC guidelines (199) were adhered to and all students involved with this project were assured of anonymity and impartiality, advised that participation in feedback was entirely voluntary and provided with written information about the project. Students were able to withdraw from the project at any time and Phase 3 provides further detail in this regard.

**Establishing a thematic concern: Table of Invention**

In 1969, Joseph Schwab claimed that any educational situation could be better understood in terms of the different interactions within it (69). In an analysis of the educational setting for the Rural Placement Program, these interactions can be summarised using Schwab's Table of Invention as a framework to establish a thematic concern (Appendix 1). This table was constructed following group discussions with faculty and professional colleagues, professional bodies and associations, members of
the community, and students. The opinions and reflections of these stakeholders were essential to inform the planning process. Opportunities for formal and informal contribution were provided and encouraged and the outcomes of these, contributed to the modification and detail within the Table of Invention.

As noted by Lewin (42), “planning usually starts with something like a general idea” and as the idea evolves, the need for a systematic approach becomes evident. Throughout this research, the thematic concern evolved into more structured research questions with associated refinement of data collection and analysis. Mindful that the thematic concern is not synonymous with the proposed method for change, the thematic concern was identified as “the need to provide a rural educational program for final year dental students”.

Reflective statement

In alignment with the central theme of ‘reflection’, I spent considerable time reflecting on both the development of the Rural Placement Program (RPP) and the research protocol.

"The action research methodology means that an apparent connection between actions and outcomes can be found and this can then be used to effect change. In a project like this there are so many variables/confounders/biases that a direct causal relationship would be impossible to determine. Student groups vary in many ways, the staff involved will be different and will inevitably change, the teaching and learning emphasis may be different, the types of treatment being provided are highly variable. The quantitative data is important if I can get it and make it meaningful but the reflective issues - briefing, de-briefing, providing structure etc - can’t be measured with numbers. The only way that I can investigate this is with qualitative methods”.

DJC January 2000
In line with the observations of Boud et al. (64), I needed to have some sort of structure for these reflections and the questions listed in Dick’s (209) work provided such a structure.

"1a: What do I think are the salient features of the situation that I face? need to develop experiential program that will have time for reflection etc and work with the community plus give students good time in country and need to integrate research with program and work out ways to do it 1b: Why do I think those are the salient features? What evidence do I have for this belief? program has to be academically sound and won’t work unless it is in collaboration with other folk, giving students good experience may influence them to work there later, research will give info. to others and help me!"

DJC February 1st 2000

Through this more structured reflection and with appropriate research, a strategy to integrate the RPP and the action research strategy became more apparent.

"Don’t want this to be “mechanistic and reductionist”. Qualitative or interpretative methods are definitely required. An inclusive view would be that this project has both qual and quan methods to allow a comprehensive study of the program and the students taking part. In fact this project seems as though it will always be evolving based upon what I’ve written/reflected on so far – rural program will too so there is the link. Both the program and the action research have reflection as central theme so I can work out how to use this to bring the ideas together. I need to be happy with the fact that the research may not necessarily provide definitive solutions and hard facts but if I can support the reflections/observations etc with facts that will be a bonus. Other people have done valid research without lots of numbers – must be able to defend this. OK – so I have action research methodology and I use different methods to collect information. Next thing is to work out the methods”

DJC April 2000
Developing an integrated model for the RPP and the research project

In light of the literature relating to experiential learning (please see Chapter 3) and a decision to utilise an action research methodology, it became apparent that the proposed experiential learning program and the associated research could be incorporated into one model. The students' experiential learning and the author's action research/action learning paradigm have a common theme of reflection. Reflection supports and enhances learning (in experiential and action learning) and research (in action research). This thesis incorporates reflection by the students involved in the experiential learning program, reflection by those mentoring the students and reflection by the author as both the coordinator of the learning opportunity and the developing action researcher. In view of the various terms and phrases involved in the literature, a decision was made to use the term “experiential learning” in preference to “action learning”.

In order to provide structure, it was necessary to develop a model that incorporates the two elements of reflection central to this thesis; the reflective structure of the students’ experiential learning program (the Rural Placement Program) and the reflective action research paradigm. At their most simple, experiential learning models (see Chapter 3) describe in various ways, cycles of ‘experience’, ‘reflection’, ‘outcome’ and ‘experience’. Boud et al. (210) consider reflection as being integral to all stages of the experiential model. Action research models also describe a cyclical pattern of, ‘action’, ‘data collection’, ‘reflection’ and ‘action’.

Several possible models were developed and subsequently rejected as they were felt to represent ‘reflection’ as a single isolated stage of the cycle. The central role of reflection was represented in the final model (see chapter 6) and it was decided that this model most accurately represented the interdependence of the RPP and the associated research, and their reliance upon reflection. Prior to formal Rural Placement Program development and research protocol, a pilot program was undertaken. Details of the pilot project can be found in Chapter 5.
This model has been developed to demonstrate the role that reflection has had in the development, implementation and research associated with the Rural Placement Program. Reflection is therefore also seen as providing a basis for the entire thesis and is entirely congruent with Schön’s theories of reflecting-in-action and reflecting-on-action \(^{51}\) (refer Chapter 3). Selected reflections from all participants in this study are included throughout the thesis and enrich objective data obtained.

‘Reporting’ is represented as being outside the reflective milieu as these reports were considered to be factual recounts that contained measured outcomes without the benefit of personal reflection. In reality, reflection did occur during the ‘reporting’ phases in verbal presentations, professional meetings and liaising with individual stakeholders throughout the project. Such presentations inevitably contained reflective observations and impressions. For the purposes of this thesis, ‘reporting’ relates to
dissemination of information to stakeholders to ensure continued commitment and ownership.

All other elements of this research are encompassed within the reflective framework. Student learning from the RPP is embedded within reflection and in this context, the action researcher is also considered to be a “student”. The development of the RPP and the Action Research methodology are based in the reflective paradigm and the pervasive representation of ‘reflection’ indicates that the outcomes from the project are constantly re-visited and re-reflected upon. There are inevitably direct sequences of program and research development however the need to continually reflect in a more abstract fashion is represented within the model without the need for numerous arrows. The ‘Research Cycles’ are represented as being contained within the RPP thus stressing that the RPP is the research theme under consideration but that the research is an integral component of the program. ‘Data collection and analysis’ is generated from, and used to support future RPP and research strategies, however it is also used for reporting purposes. ‘Student learning’ is identified as a discrete entity primarily to facilitate outcome evaluation. As will become apparent, student learning was not limited to the RPP and many of the learning outcomes had identifiable impacts upon continued learning. The inclusion of ‘student learning’ within this final reflective model was as a direct consequence of research findings demonstrating longer-term benefits of reflective teaching and learning (refer Phase 2).
CHAPTER 5

PILOT PROGRAM

As described in Chapter 4, a pilot RPP was undertaken as part of the experiential model. Four final year students participated in a pilot program during the mid-Semester break in July 1999. The aim of the pilot was to provide a positive first-hand experience of rural dental practice and rural lifestyle. The students spent two weeks in the small rural town of Coonamble, observing a local dentist at work. Whilst the students were not able to provide direct patient care they assisted with laboratory procedures and practice administration. Visits to the local Aboriginal Medical Services Dental Clinic provided additional opportunities for observation.

The students travelled to Coonamble by private transport at their own expense. The local Hospital provided accommodation and as a consequence, the students were able to socialise with other health care providers resident in Coonamble at that time. There was considerable community interest in the students’ visit and as a consequence of an article in the local newspaper, unsolicited offers of support were forthcoming. The community provided access to local Information Technology and library facilities, information about the local area through the Shire Council and numerous social opportunities. Through interviews on local radio, the students became ‘celebrities’ and as a consequence were welcomed and embraced by the community.

On completion of the pilot program I interviewed members of the community, the local dentist and the student participants to determine whether the pilot program had provided a positive experience of rural dental practice and lifestyle. The pilot program is described in terms of community impact and both clinician and student experiences.

Community comments

Those community members who had had direct contact with the students valued the opportunity to be involved with the student placements and offers of continued support
were spontaneous. Specific suggestions were made about developing additional elements to supplement any future programs. Visits to the local hospital and a local medical practice, as an observer, were suggested. Community members were unaware that legal requirements prevented students from providing treatment; it was suggested that the students could have made a valuable contribution to the oral health of the community by working with the dentist to supplement access to care. Community leaders suggested that the dental students could have spoken to local community groups about their education thus increasing the awareness of career opportunity for younger residents. Local schoolteachers advised of their willingness for dental students to become involved in providing oral health education to their pupils and local health providers suggested that opportunities for incorporating oral health education into community health programs should be discussed.

In general, the community was strongly supportive of further student placements and suggested that other small towns may also choose to participate.

**Local clinician**

The local dentist (L) involved in this pilot program invested considerable time in supporting the students during their placements but considered this to be a stimulating opportunity rather than an intrusion. He noted that often, rural and geographically isolated dentists do not have occasion to discuss aspects of oral health care and the presence of the students was invaluable to him in this regard. L also commented that the students had no pecuniary interests and were therefore in an ideal position to promote oral health care and provide oral health education to local residents; he suggested that school visits and community talks would be mutually beneficial.

The dentist also valued the opportunity to support students during their final year of study and established ongoing support links with the participating students. He noted that the ability to provide patient treatment in a “safe” environment might assist in the development of self-confidence and enhance skill acquisition.
From a practical perspective, L suggested that any students wishing to attend such a placement should be encouraged and supported to do so. He stated that the costs to him had been minimal however he was concerned that the self-funding arrangements did not reflect the value that the placement had for the students and the local community.

Students

All of the students reported that they had valued the program as an additional learning opportunity and suggested that all students should have the opportunity to spend time in rural practice. They particularly valued the input and support of L as evidenced by their subsequent and ongoing written communications. They appreciated the opportunity to participate in the practice administration and reported an increased awareness of the role of the oral health team members as a consequence.

The students were overwhelmed at the community response to their visit with one student noting for example, “I felt really important. People kept stopping me in the street to talk to me” (Student 01). Before the pilot commenced, all students reported that they had had concerns at visiting a rural community with two of the students specifically mentioning pre-conceived notions of bigotry and racism (01 and 02) that they attributed to media portrayal of rural life. During the pilot, their experiences were to the contrary with all students noting the support, interest and enthusiasm of residents for their visit. There were no adverse incidents reported.

The students all agreed that the opportunity to provide treatment and oral health education for local residents would have enhanced their visit. Student 04 commented, “I wish I could have actually done something rather than just watched”, and student 03 stated, “There are so many people for one dentist it’s a shame I couldn’t do anything to help”.

The students generally thought that their placement should be recognised as a component of their education and that there should be travel bursaries supplied to avoid the need for out-of-pocket expenses. Student 03 stated, “We would all come
again tomorrow but it has cost us quite a lot to get out here. Maybe we could get grants from the Uni or something?" There was unanimous agreement that the program had been successful and had provided them with a positive experience. Of the 4 students, two subsequently moved outside metropolitan Sydney to practice.

**Consultation**

On return to the Faculty of Dentistry, the students informally discussed the program with their peers. Five additional requests were made for visits to Coonamble and all of these were accommodated during vacation time. Discussions with Faculty colleagues and presentation of a brief initial report resulted in the determination by the final year director, that opportunities to expand the rural program should be investigated and would be supported as an additional component of final year studies.

The outcomes of the pilot project, the justification in light of educational reform and the identified oral health needs of rural communities formed the basis of an initial report to inform the development of a collaborative rural placement program. The need for integrated research was apparent and the contextual analysis, literature review and qualitative data from the pilot program, supported the development of a thematic concern on which to progress an action research project.
CHAPTER 6
RESEARCH MODEL

PHASE 2
Development and Implementation

On review of Phase 1, it is important to reiterate that, as inferred in January 2000, the research was a far less structured process than is suggested in this thesis. This will be evident from the dates of the various extracts from personal notes however the need to structure this descriptive study has necessitated such a structure.

"Really have to get on and organize this if I want to offer in July 2000. Lots to do and not much time. Think its best to go with what I know and carry on fact-finding as I go along. This sits nicely with the action research methodology – I’ve got my thematic concern (exposing students to rural dentistry) and I think I’ve got the links etc etc. Need to be reporting as I go along but need to make a ‘things to do list’".

DJC January 2000

On reflection, and in alignment with references to qualitative research, this has been a more complex and demanding process than documenting a positivist research project. Having been educated and subsequently employed within a positivist mindset, working within a relativist framework required new skills, understandings and methods.

"If I have to look up epistemology one more time I’ll scream. Interesting how we all develop our own languages to make the subject/profession our own. Kind of makes it mysterious and a bit scary. Really struggle with the way that some of the education refs. are written – lot of language to describe something..."
really very simple or maybe I’m making it too simple? This is the mystery I suppose. Makes me feel a bit stupid but realistically I can’t be. Would be awful if I wrote all this up and really had missed the point completely.”

DJC August 1999

The model described previously is used to introduce each Chapter and thus orientate the reader. Blue shaded boxes indicate the action research cycle involved and the red shaded boxes indicate the stage within each cycle.

In January 2000, an academic position as Senior Lecturer in Rural Dentistry was approved and an appointment made. A formal agreement with the University Department of Rural Health at Broken Hill was established and a position paper compiled to generate interest and stimulate debate. On the basis of this paper and a subsequent verbal presentation, the Final Year Management Group approved the formal concept of a Rural Placement Program for final year dental students in February 2000.

Based upon the findings of Phase 1 of this project and the success of the Pilot Program, initial, and largely informal, approaches were made to interested ‘stakeholders’ to determine the level of support and identify the potential barriers to program development.

In the light of the recruitment and retention issues facing public sector dentistry in rural areas and the consequent effects on the oral health status of the residents of these areas, initial discussions with the Chief Dental Officer (CDO) focused on ways by which final year students might contribute to patient care in such areas. Discussions with the President of The Dental Board of NSW confirmed that opportunities for student contribution to patient care were dependent upon recognition of any host Community Dental Clinics as clinical teaching facilities of the University of Sydney. A neodot evidence demonstrated that the existing rural dental workforce had concerns about succession planning and as a consequence, the NSW Branch of the Australian Dental
Association (ADA NSW) had an interest in supporting initiatives in the area of 'rural dentistry'.

**Initial development of the RPP**

With an anticipated start date for the RPP of July 2000, there was a need to initially focus on the structure of the program and collaboration with the identified stakeholders. The initial concept was to provide dental undergraduates with a range of clinical activities in rural NSW. It was planned that the students would receive a rich educational experience, provide additional dental care for the rural communities in which they were based and develop an informed and positive attitude to rural lifestyle and dental practice.
The formally documented aims of the Rural Placement Program were:

- To develop a positive attitude to rural lifestyle and dental practice,
- To generate a student-centred learning experience, and
- To contribute to dental care for residents of rural areas of NSW.

Discussions with Faculty colleagues confirmed that any rural attachment would need to be on an 'elective' basis as there was inadequate time available during semester time. The obvious concern was that students might not be interested in giving up their vacation time to visit country areas, particularly as the program was planned as an educational opportunity with attendant learning requirements. The University of Sydney had also decided to move the vacation dates in 2000 to allow for the anticipated disruption due to the Olympics in September. Thus the only opportunity for students to participate in the RPP in 2000 was during September and October while the Olympics were in progress.

With support in principle from key personnel in the Far West and Macquarie Area Health Services, it was hoped that students could be based in the regional centres of Dubbo and Broken Hill. It was decided to offer 12 student places for 2000.

It was critical that all members of the rural dental community in Broken Hill and Dubbo were invited to become involved in the development, implementation and evaluation of this program. As the dental community in Broken Hill was small, all dental practitioners working in Broken Hill were canvassed. It was interesting to note that my initial review of the local Yellow Pages indicated that there were seven general dentists working in Broken Hill and that there was a visiting specialist orthodontic service. It transpired that of the seven listed dentists there was only one full-time private practitioner resident in the town, the others working in the public sector or on a part-time visiting basis. Whilst one semi-retired practitioner elected not to be involved, three private practitioners enthusiastically offered their practical support and provided valuable input to the RPP development. The dentist working with the Royal Flying
Doctor Service, who has considerable experience in student supervision, similarly offered her unqualified support for the project.

Dubbo and its surrounding towns have a larger dental community and individual approaches were not always feasible. Following a request for support and subsequent discussions at a local professional meeting, there was actually an over supply of interested dentists. In consultation with the local Division of the ADA NSW, it was decided that four private dental practitioners in Dubbo and two practitioners in small towns would support the RPP in 2000. These practitioners were selected to provide a diverse experience of rural dental practice. Other members of the Division elected to coordinate a range of social and educational activities for any students attending. In addition and as a consequence of the professional grapevine, several unsolicited requests to become involved were received from throughout rural NSW. Four practitioners from Orange were recruited for the project to optimise the opportunities for the students and to develop links for future extension of the Rural Placement Program. Links with additional ‘volunteers’ were nurtured in anticipation of future developments of the RPP.

A key element of the RPP was the opportunity for dental students to provide oral health care in the Community Dental Clinics in Dubbo and Broken Hill, thus increasing the level of patient care for local residents. The Chief Executive Officers of the Far West and Macquarie Area Health Services and their Principal Dental Officers were supportive of the final year dental students providing dental treatment under their direct supervision. In order that students could participate in extramural clinical education, the Placement Institution had to be formally recognised by the University of Sydney and a Memorandum of Understanding signed by both parties. Following consultation and with support from the Legal Departments of the University of Sydney and New South Wales Health, and in collaboration with the Chief Dental Officer, Student Placement Memoranda of Understanding between the University and both Far West Area and Macquarie Area Health Services were established. It was decided that these should be valid for 5 years to demonstrate ongoing commitment from both parties.
In addition, the Dental Act required that any placement institution be recognised by the Dental Board of NSW as a training school for students in dentistry. The Board resolved to approve the Dubbo Dental Clinic and the Broken Hill Town Clinic in accordance with Section 57(4)(b) of the Dentists Act 1989.

All students who participated in clinical placements were provided with insurance indemnifying the supervising body for liability arising out of any negligent act, error or omission on the part of the students. The University of Sydney has in place a personal accident policy that covers students’ participation in any Faculty-approved attachment.

Of paramount importance to the success of this program was the decision of the ADA NSW and Guild Insurance and Financial Services to generously provide $10,700 for student travel bursaries. Macquarie AHS identified a car for the Dubbo-based students to use and many of the clinicians involved with the project provided transport for the students. Accommodation was offered with clinicians and in the local Base Hospitals at no cost to the students.

"It all sounds so easy now! The hours of driving, frustrations of unreturned calls and battles with bureaucracy have faded into the past. The only reminder is the lists and lists of names and numbers with exclamation marks and red scrawl all over them. On reflection, I'm not sure that I could have done it any more efficiently. People are allowed to take holidays and committees decide their own meeting schedules!! I have learnt a lot about steering things through the path of least resistance and have had the benefit of some great mentors in this regard. It is like the whole of this Phase of the write-up though – things sound so sequential, organised and as if they all just followed on from each other. The thing that I found with a project like this was that you need to have a few balls in the air and be flexible in what you do and when you do it. The unexpected is always unexpected and you have to have contingency plans."
While I've been focusing on my development and learning as a researcher, I have perhaps failed to recognise my developments as an administrator, communicator and novice politician!"

DJC January 2003

Prior to further development, an initial request for expressions of interest in the 12 Rural Placement Program (RPP) places on offer was distributed to 62 final year students. 20 students expressed a desire to be involved with the program and a briefing meeting was held with these students. The main purpose of this meeting was for information exchange. Practical details and possibilities were outlined and the students were invited to contribute to program development. As has been described in the literature review, students are generally reluctant to assume a co-developer role. Thus an open and closed response questionnaire was distributed to all of the students and the feedback from this was used to inform program content. This issue is discussed further in Chapter 7.

After this meeting, four Year 4 students expressed a strong desire to be involved. These students had all been actively involved with the University Multidisciplinary Rural Health Club, MIRAGE. In consultation with faculty, it was decided to offer these students a place on the RPP but to restrict their participation to observation only. A total of 24 students were therefore offered places on the first RPP.

An essential academic component of the Rural Placement Program was the Broken Hill orientation program coordinated by the staff of the University Department of Rural Health (UDRH). Data from the student questionnaires informed the content of this orientation and further details are provided in Chapter 7. With the benefit of a wealth of experience gained from supporting multi-disciplinary student placements over the last five years, a comprehensive and intensive two-day orientation program was developed at the UDRH. The staff members of the Department provided academic support in the development of an appropriate general orientation for the dental students and dental specific elements were integrated within this orientation.
Details of the RPP were forwarded to the Associate Dean (Curriculum) at the Faculty and the Curriculum Committee ratified these in April 2000. Details of all elements of the RPP are discussed further in Chapter 7.

Initial research concept

Having established a thematic concern and outcomes for the RPP, the need to determine a research protocol for the first spiral of the action research was apparent.

In order that appropriate research methods could be determined it was determined that the documented aims for the RPP were based purely upon 'hunches'. The aims of the RPP have been listed previously. Strategies to evaluate these outcomes were essential but the methods needed to be flexible enough to allow for unanticipated outcomes.
An open and closed response questionnaire was selected as an appropriate method to collect information before the first RPP. Students were also required to submit reflective statements and complete learning contracts. Full details are provided in Chapter 7.

As described in Chapter 3, involvement of various professional associations and bodies placed certain requirements on any evaluation and research. An example of this can be found in Chapter 7. Individual participants also expressed a desire to be involved with research in this area and assisted in the preparation of an appropriate tool. Initially, this was a specific and goal-focused questionnaire however after considerable debate and input from many colleagues, it was decided to use a reflective method to obtain input from those involved. While everyone agreed that oral feedback and discussion was the ideal reporting method, it was appreciated that while such feedback may be appropriate for small groups of participants, expansion of the program would result in it becoming unmanageable. The consensus was that the RPP 2000 would culminate with oral feedback and that analysis of this would inform a semi-structured questionnaire for future use.

The research methods used for each cycle of research are described in the relevant Chapters in Phase 2 of this thesis. It was however decided to identify clearly the groups who would directly or indirectly participate in the research. The feedback of the students was of course essential and in addition, individual clinicians, mentors and academic staff were identified as a collective group of ‘staff’. In order that this group of people would identify with this term, honorary appointments with the Faculty of Dentistry were offered. Submitted curriculum vitae were reviewed and an appropriate level of appointment was determined in line with University policy. The third ‘study group’ comprised the professional stakeholders who had varied involvement in the project. This third group was referred to as ‘stakeholders’.

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"Honorary title notion has been received well – recognises the contribution made by all and gives an ownership of RPP. Not everyone is bothered though – suspect that being involved is actually enough. ‘E’ said he was just pleased to be helping to teach as he had done it years ago and couldn’t now that he lived so far away. Another benefit of RPP maybe”

DJC July 2000

Reporting

Having ‘sowed the seeds’, the need to establish formal lines of communication and a reporting protocol was apparent. Again, each of the three identified groups of participants was considered and input was sought from all staff and stakeholders to define the level of detail required. Reporting was a key element of the project as it allowed all participants to review the outcomes, identify changes required and facilitate future support. As 2000 represented the first year of the RPP, a detailed report was both required and expected. Details of this report are provided in Chapter 7.

As an integral element of the action research, the reporting methods and structure were re-visited and reflected upon. This process resulted in modifications of reporting and
the various formats adopted are considered in Chapters 8 and 9. By the end of June 2000, the RPP had support and commitment from all of the professional stakeholders, an excess of staff and 24 students. Phase 2 describes experiences and outcomes of the RPP from 2000 to 2003.
In consultation with staff of the University Department of Rural Health (UDRH), who had the benefit of previous experience of student placements, and with reference to the literature, overall aims for the RPP were constructed. The rural attachment based at Broken Hill was planned to allow students to develop their professional skills further, learn about rural dentistry, experience life in an outback town and broaden their
horizons. It was anticipated that the RPP would enable students to develop “a mosaic of snapshots”\(^*\) that revealed the true character of rural lifestyle and dental practice.

"Interesting to think about what I expected – not this! While dentistry is pretty much the same wherever you do it (clinical skills, techniques etc) there are things that are done differently because of the distance (eg ‘M’s dentures, RFDS etc etc). Patients seem to be more tolerant/less demanding – guess that they are happy just to have someone here to treat them. Would have thought that they would be fed up with having to wait so long but it seems to be generally accepted – degree of resignation I think. Lots of ways to skin a cat but suspect that the students think there’s only the way that they have been taught. Was like this myself. Remember being horrified that ‘C’ didn’t do things the same way as ‘Prof S’ when was in ‘G’. Just being out here and watching would enlighten but would be great if students could actually treat – might help a bit anyway”.

DJC January 2000 (on plane returning from Broken Hill)

It was planned that during the placement, students would visit small rural towns such as Coonamble and Walgett, and remote communities such as Menindee, Tibooburra and Ivanhoe (refer Figure 2).

They would accompany dentists based at the Town Dental Clinic in Broken Hill on outreach programs, provide practical assistance to the Royal Flying Doctor Services dentist, participate in school screening assessments, observe private practitioners and provide patient treatment in both the Town Dental Clinic at Broken Hill and the Dubbo Community Dental Clinic.

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\(^*\) Quoted from Student Handbook: Welcome letter from Professor David Lyle, Head of University Department of Rural Health, Broken Hill
Figure 2: Map indicating locations for clinical placements for RPP 2000 students

In order that the RPP was a positive experience, considerable efforts were made to ensure that the students were accommodated in excellent facilities and that the staff selected to support their learning were motivated, enthusiastic and positive role models. The UDRH at Broken Hill provided excellent student accommodation and those students involved in outreach programs were provided with motel accommodation. Local staff provided additional accommodation and transport support. It was decided to use the travel bursaries provided by the ADANSW/GIFS to pay for all students to fly to and from their placements. Hazelton airlines assisted by providing subsidised tickets and the final travel budget for all 24 students was $10,700.

Social programs were an essential element of the RPP. Champagne at the Broken Hill sculptures, trivia night quizzes, barbecues, bush walking, lunch parties and picnic races undoubtedly enhanced the bush experience.
In alignment with experiential learning theory, RPP 2000 comprised A) a pre-placement briefing workshop, B) the program itself and C) a post-placement debriefing.

A) Pre-placement briefing

The pre-placement briefing with the students had three major functions. The need for trusted facilitation has been discussed in Chapter 3 and the pre-placement briefing provided an opportunity for initial contact with the RPP coordinator and a 'getting to know you' discussion in an informal setting. Up until this time communication with the students had been through e-mail and this proved an excellent means for information exchange and one on one discussions. Prior to any group work during the pre-placement briefing, the students completed a pre-placement questionnaire (as described in the research section later in this Chapter).

A series of activities was developed for the pre-placement briefing. The students were asked to consider the situations in which they had learnt well in the past and what it
was about those situations that had enhanced their learning. They were also asked to consider negative experiences and the factors that had led to such experiences. The concepts and importance of reflection on learning were therefore introduced. With a view to promoting reflection throughout the RPP, the pre-placement allowed initial peer exchange and as such provided an excellent introduction to the theory of reflecting upon experience. The students appreciated the need for individual reflection supported by peer reflection. At this first meeting, students were asked to write reflective statements in anticipation of the RPP experience. These were submitted prior to the RPP and were used to inform both program and research developments.

Mindful that the participating students were enrolled in a traditional-style curriculum, the concept of student-centred curricula was introduced through a series of reflective activities. Many of the participants had been involved with various self-assessment strategies (see Chapter 3) during their education however few had had any input into the determination of curriculum goals and outcomes. In commencing development of learning outcomes, students were asked to list the motivating factors leading them to apply for a place on the RPP. The 24 students listed a total of 56 motivating factors and these are presented in Table 1.

Table 1: Motivating factors for students attending RPP 2000

<table>
<thead>
<tr>
<th>Motivation to attend RPP</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>To experience rural lifestyle</td>
<td>17</td>
</tr>
<tr>
<td>To learn about dentistry in a different environment</td>
<td>16</td>
</tr>
<tr>
<td>To have a new life experience</td>
<td>12</td>
</tr>
<tr>
<td>To assist in career decision-making</td>
<td>9</td>
</tr>
<tr>
<td>To learn about dental health issues in the country</td>
<td>1</td>
</tr>
<tr>
<td>To learn more after being involved with MIRAGE</td>
<td>1</td>
</tr>
</tbody>
</table>
This shared list of motivating factors prompted students to consider how these could be used as a program outline. The students recognised shared elements but they also considered that such an outline was not necessarily relevant or specific to them as individuals. The students were therefore encouraged to use the RPP as an experiential framework in which they learned more about the issues that concerned or interested them most. In order that the various activities and experiences were constructive, students outlined their individual anticipated learning outcomes from the RPP and identified methods by which they would achieve these outcomes. The students exchanged ideas on a small group basis and started to develop methods for shared learning from the RPP.

Each student also identified individual learning outcomes for the RPP. Further discussion resulted in an appreciation of the need to review, refine and reflect on these outcomes throughout the learning experience and students agreed that use of individually structured and confidential learning journals would be a valuable component of the RPP. As the RPP was an elective component of their education, the students were fully aware that there was no requirement or necessity to complete learning journals. They were also aware that the Faculty was not formally assessing the RPP.

The grouped learning outcomes assisted in development of the orientation component of the RPP. They were also used to inform discussions with stakeholders (see below). Categorised and grouped learning outcomes can be seen in Table 2.
<table>
<thead>
<tr>
<th>Grouped themes</th>
<th>Learning outcomes</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional factors</td>
<td>Is the range of treatment provided the same as in the city?</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Is it easy to refer patients for elective Specialist care?</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>How is the new graduate supported?</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>What are the advantages/limitations of rural practice?</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>How do dentists access continuing education?</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>How much can I earn?</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Who do I ask for help if there is an emergency?</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Is the infrastructure the same as the city?</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Are there any Public Dental Health measures specific to the bush?</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>How is public sector dentistry funded?</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Are allied dental personnel available?</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Are there many jobs available?</td>
<td>1</td>
</tr>
<tr>
<td>Patient factors</td>
<td>Are there restrictions to access to dental care?</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Are the dental needs the same?</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>What do patients expect?</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Can rural patients afford treatment?</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Are there any specific dental needs within the Aboriginal community?</td>
<td>2</td>
</tr>
<tr>
<td>Personal factors</td>
<td>Could I live here?</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>What is the role of the dentist within the community?</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Is it cheaper to live in a rural area?</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Will the local community accept me?</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Can I access education for my children?</td>
<td>1</td>
</tr>
</tbody>
</table>

The pre-placement briefing concluded with students being introduced to learning contracts and self-assessment. It was agreed that these required further thought and that final determination of these learning contracts and the self-assessment strategies would form a component of the RPP orientation.
“Never thought that they would want to quarantine time to do the learning stuff — they don’t have to do it after all. Maybe (just maybe!!) they can see they benefits this could have for them. Bottom line is they are giving up their own time to do this so they will want to get something from it. Cynical side says that students giving up hols are likely to be more motivated anyway. Need to have time for this in Broken Hill – it’ll have to be 1:1 too as they will hopefully all have different ideas and plans. How long to do this? Briefing took much longer than I thought but one on one can be more efficient (I think!). maybe 20mins and see how we go”.

DJC June 2000

B) Program structure

The RPP was planned to take place over a two-week period. With an awareness of the motivating factors and the individual learning outcomes defined by the students, a list of core themes was constructed and using this, an Orientation Program for the RPP was developed. While the students had considerable input into the RPP structure, the stakeholders (including the program coordinator) considered there to be key elements that all students would benefit from. It was therefore decided that all students would participate in the Orientation Program, following which they would attend their various clinical attachments. The orientation was planned for the first two days of the RPP at Broken Hill.

“Most of the learning will be from the experience - being there, doing the work and reflecting on it. There are some common learning needs and if we have a more structured orientation with these things in, then they can work on their own learning after. There are some things that they hadn’t thought of too and I think that these are important to include too. While they can set out what they want, this is a shared curriculum so my input is just as valuable. Also, the issue of the ADA wanting to have structured input might be directed towards the professional support issues that a lot mention – ties in well with previous chats too”.

DJC June 2000
A) ORIENTATION PROGRAM

The core components of the orientation program were;

- Area in context
- Cross-cultural workshop
- Risk Management Workshop
- Health Issues in Rural and Remote Areas
- Development of Learning contracts and self-assessment for RPP
- Social Program.

1) Area in context

In response to students concerns about the 'unknown' and the practicalities of their placements, the first afternoon of the RPP was spent with UDRH staff and local dentists. The students were provided with local information, maps and a tour of the town and surrounds. The student coordinator at the UDRH was a key mentor for the students and she escorted students to their accommodation and ensured that they all had access to required facilities such as information technology and library facilities. During the first session of orientation, the Far West area was described from a general health context. Various health demographics were presented and students asked to consider the information in the context of their own placements. As a consequence of city-based education, most of the students were focused on dentistry and more specifically, the clinical and technical aspects of their profession. The coordinator considered that the RPP provided an ideal context for the consideration of dentistry and oral health within a general health context.

Access to local dentists, one of whom was a new graduate, allowed students the opportunity to raise and discuss some of their concerns about rural careers. This semi-formal session was then continued at a social function hosted by the ADANSW. This social function was enhanced by the presence of various Commonwealth Department of Health personnel, allied health students who were also based at the UDRH and the families of resident dentists. A senior member of the ADANSW (Immediate Past
President), the Head of the UDRH and the Dean of the Faculty of Dentistry attended this inaugural RPP barbeque demonstrating commitment to, and support for, the RPP.

ii) Cross-cultural workshop

Members of the UDRH had developed and presented a full-day workshop to medical and allied health students in previous years and therefore had material that could be readily developed into a half-day workshop. This material was set in a general health context and was delivered by an indigenous Lecturer. The students worked in small groups and particularly appreciated the willingness of the presenter to talk frankly and openly.

iii) Risk Management session

This session was developed in collaboration with the ADANSW and addressed student concerns about professional support and advice on graduation. During discussions at the pre-placement briefing (see above), it became apparent that students were concerned that there was an increased risk of litigation as a consequence of working in rural areas with limited professional support. Using a triple-jump exercise, the session was facilitated by the Immediate Past President of the ADANSW, a senior partner with Ebsworth & Ebsworth (on behalf of GIFS) and the RPP coordinator.

iv) Health Issues in Rural and Remote Areas

The acting Chief Medical Officer of the Royal Flying Doctor Service (RFDS) presented a session that considered aspects of general health care in rural areas. Using the history of the RFDS as a framework, students were given an overview of and the rationale for existing services. A tour of the Base was provided and this was followed by a presentation by the RFDS dentist. This focused on issues of access and equity and culminated in a demonstration of the practicalities of such service delivery.
v) Development of learning contracts and self-assessment for RPP

I met with all students on a 1:1 basis to finalise learning contracts and self-assessment strategies for the RPP. The need to collaborate in learning was identified by many students and the value of peer assessment discussed. Several students elected to include peer assessment as a component of their assessment strategy. These sessions were conducted at various times and places within the orientation program. This is discussed further in the ‘Data and Analysis’ section of this Chapter. All of the students agreed to submit a second reflective statement on completion of the RPP.

“Sounded good in theory but there just wasn’t enough time to do the assessment bit properly. Many struggled with defining their self-assessment criteria never mind including assessment by peers. Think it’s too much – will need to refine next time. Interesting that they hadn’t even really thought about how they are assessed at Uni. – quiet acceptance of the subjectivity of it. If nothing else they have an idea of just how difficult assessment really is. Nearly all focused on presentation type elements at first. Be interesting to see how they go with this – think some might regret the criteria that they have set!”

DJC September 2000

vi) Social program

As has been mentioned, the ADANSW hosted a welcome barbeque on the first evening of the placement. The students were also invited to join staff for champagne at ‘The Sculptures’ just outside Broken Hill on the second evening. The third and final evening for the group saw all 12 students electing to socialize together. The first group visited a local hostelry and the second group elected to have a “cultural feast” at their residences. The student coordinator at the UDRH provided ongoing support for social activities. One student (09) observed that this was the first time that he had spent any time with these student colleagues and that he had particularly enjoyed sharing thoughts, ideas and aspirations with fellow students.
B) CLINICAL ATTACHMENTS

A series of clinical activities was identified at each location. The role of the Principal Dental Officers is considered later in this Chapter. These activities were selected to provide the students with a wide-range of experience in both the public and private sectors. All possible opportunities for students to provide patient care during their clinical attachments were pursued and this resulted in a wide-range of activities being made available. With a view to optimising reflection and peer learning, a conscious decision was made to create individual experiential frameworks for each student. This had the additional benefit of including the maximum number of rural practitioners thus increasing ownership and involvement.

After reviewing the pre-placement briefing and identified individual learning outcomes, the provisional framework was initially reviewed by the coordinator to ensure that there was adequate opportunity for each student to fulfil their learning needs. As described, 12 students attended each of 2 RPPs and on each occasion, 6 students were based in Dubbo with 6 remaining in Broken Hill. Six clinical attachment rosters were therefore constructed for each location and these were distributed to the students informing them that they were able to swap rosters if this was mutually agreeable. The only caveat on this ability to exchange was that each student had to complete the same number of clinical care sessions. This was determined to avoid students swapping all of their ‘hands on’ sessions in favour of ‘observation’ sessions.

"It's a shame that they don't all get to go on the outreach and the school screening visits. 'P' only available during the first week. Could send them all to him on first week I suppose but 6 in a surgery pretty pointless really - won't see much or be able to talk as easily. Might be inhibited by other students. BUT - why do they all have to do the same things anyway? If I want them to talk, share and REFLECT then different experiences might actually enhance this."
May be some who really want to do a certain thing so if I work out 6 drafts and then ask them to work together to make sure they all get what they want they can really share. Will be another way of them having real input into their program. Need to make sure that the clinics are covered as pts will have been booked and really want them to get to do as much as they can. Will make sure they know that clinic sessions in CDC are set in stone but rest is up for grabs”

DJC July 2000

Provisional rosters were distributed by e-mail and only two students chose to ‘swap’ sessions. An identified desire to spend some time in the Accident & Emergency Department after hours, was accommodated through liaison with local medical personnel and was subsequently offered to all participants.

Students were required to complete a log of experience that would form a non-confidential element of their Learning Journal. It was therefore agreed that on completion of the RPP the students would have completed;

- a confidential Learning Journal,
- a log of experience,
- a Learning Contract,
- a self-assessment, and
- a peer assessment (where relevant).

A second reflective statement would be submitted at the post-placement briefing in Sydney one month after completion of the RPP. On the final morning of the RPP, all students attended a ‘de-brief’ session facilitated by the local mentor and attended by involved staff. This session was designed to provide a further opportunity for shared learning with the benefit of the input from staff involved. It was also expected that ‘critical incident’ analysis would be an element of this session (see Chapter 3). Just prior to departure, students completed a post-placement questionnaire and this is considered further in the ‘Data collection and analysis’ section of this Chapter.
C) POST-PLACEMENT BRIEFING

The final component of the RPP was a post-placement briefing for all 24 participants. This was held in Sydney one month after the final RPP. All students were expected to attend and submit the agreed learning items. In addition, second reflective statements were submitted. There was considerable positive discussion about the RPP and the students identified a desire for ongoing support. As a consequence, an e-mail forum was established and the coordinator provided ongoing professional support for the RPP participants. This is considered further in Phase 3.

STAFF DEVELOPMENT

Initial contact

Early in 2000, clinicians and personnel involved with oral health care delivery were approached and recruited to support the RPP (see Chapter 6). The Principal Dental Officers (PDO) based in Dubbo and Broken Hill worked with the RPP coordinator to identify existing clinical opportunities within the public sector. There were numerous opportunities for the students to provide care as both host Dental Clinics were actively recruiting dentists and as a consequence had under-utilisation of existing facilities. In addition, both PDO identified other opportunities that could be re-scheduled to provide the students with a wide-range of experience.

Recruitment

During RPP 2000, both PDOs acted as local mentors for the students and were awarded Honorary Academic appointments with the University of Sydney. The coordinator, in advance of the commencement of the RPP, provided several one to one staff development sessions. The development of the RPP was therefore collaborative with both mentors developing an appreciation of and commitment to the philosophy of experiential learning. In addition, clinical supervisory requirements were negotiated and formalised in the MOU with each AHS. Using supervisory criteria developed by the Faculty for its honorary staff, scenario-based information was provided. The coordinator also provided written and verbal support to all of the clinicians who would
be supervising students. Ongoing support was provided by e-mail and additional personal visits as required.

**RPP Documentation**

A draft student handbook was enriched by the contributions from the PDO and both mentors were fully versed with the research aims of the program (see below).

The final student handbook was distributed to all dentists who had been recruited to support observation sessions. All of these dentists were contacted by the coordinator and additional explanation provided where necessary. The dentists were invited to contribute to ongoing program development and research as described in Chapter 6.

**STAKEHOLDERS**

Ongoing communication with the stakeholders was an integral component of program development. As discussed in Chapter 3, shared evaluation of the program was encouraged.

**Faculty of Dentistry**

The specific needs and future directions of the Faculty have been detailed in Chapter 2.

**University Department of Rural Health**

Prior to 2000, the UDRH had not accommodated or included dental students in its multi-disciplinary rural programs. There were therefore short and long term foci for the UDRH. Initially, the success of the program in terms of enjoyment, value and UDRH-specific elements were identified as evaluation needs. In the longer-term, the UDRH wished to know whether the RPP had any influence on career direction.

**Oral Health Branch of NSW Health (OHB)**

Again, the OHB identified short and long-term evaluation needs. From a logistical perspective, there was a need to determine the clinical input of the students and the
cost to the AHS through their involvement. There was a desire to determine whether the RPP had any long-term influences on career direction.

**ADA NSW**

Having made a substantial financial commitment to the RPP the ADANSW were specifically interested in an evaluation of the impact of the RPP on the rural workforce. The Risk Management session of the Orientation Program was developed and supported by the Branch and an evaluation of this session was also required.

**The Dental Board of NSW**

In support of the RPP, the Dental Board of NSW requested that the outcomes of the RPP be disseminated within the profession and that, in anticipation of program expansion, criteria for clinic accreditation be compiled for future reference.

During discussions with the stakeholders, it became apparent that regular reporting needed to be an integral element of the RPP. This is discussed further in the ‘Reporting’ section of this Chapter.
Research questions

Having established a thematic concern for the research (see Chapter 4) and having developed the RPP for 2000, the need to define the research question accompanied the program development. The development of formal aims for the RPP gave a primary focus for development of an appropriate research question.

"Introducing a student-centred experiential learning rural placement program will lead to students developing a positive attitude to rural lifestyle and dental practice, and will result in contribution to dental care for residents of rural areas in NSW".

DJC February 2000

"Really hard to write a one-liner for the research question. The different rewordings that I’ve played with range from it being really easy to almost impossible to collect data. The needs of the others have to come into this too —
relates to the ’unexpected’ again. What do I really want to research?? Pure short-term outcomes? Long term outcomes? Relevance of educational structure? Service contribution? Effects on various staff?? All of the above. Thematic concern easy enough but not sure that I can really write an hypothesis as such (whoops back to science!”.

DJC April 2000

“Now I know what everyone else wants (my action research team!!) I am totally convinced that I can be really specific in terms of the research question. Bottom line is that I want to see what the short-term impact of the program is and then see what it is that has made it successful or not. Reassured that this is what action research is about (too tricky!) and that I can reflect on this to allow me to develop further over time”.

DJC June 2000

At this stage, a decision was made to return to the research question that had originally been decided in February 2000 and investigate whether the introduction of a student-centred experiential learning rural placement program would lead to students developing a positive attitude to rural lifestyle and dental practice, and would contribute to dental care for residents of rural areas in NSW. The major aim for the project in 2000 was to introduce the RPP and admittedly, this had taken considerably more time than had been anticipated. With every confidence that the RPP would continue beyond 2000, additional research questions were tabulated (see Chapter 8) to inform the action research.

The initial research focus was therefore to determine whether the RPP had a positive influence and whether the students made a contribution to patient care. These elements were also of immediate benefit to the stakeholders and data collection methods were easily identified.

The introduction of a student-centred experiential learning program and the extent to which this was achieved was of particular interest to the coordinator. As the aim of this
research was to determine whether the “student-centred” program resulted in a positive attitude to rural practice and a contribution to patient care, it was obviously a requirement of the research to determine that the RPP was indeed a “student-centred” program. Based upon the premise that a student-centred program would result in individually driven learning, investigation into student learning was required.

The research questions for the RPP in 2000 were therefore;

- Was the RPP a student-centred program that promoted effective learning?
- Did the RPP result in positive attitudes to rural practice and lifestyle?
- Did the RPP students contribute to oral health care for community members?

Mindful that the research strategy would evolve and that this would be dependent on the ability to reflect on the RPP, it was decided to collect additional data on the RPP. At this early stage of the research, multiple research methods were used to inform further program and research development.

Research methods

As discussed in Chapter 4, the need for a range of methods was acknowledged. Both the influence of the RPP and the contribution to care were readily quantifiable. At a descriptive level, the extent to which the RPP was student-centred was also easily documented however the extent to which this contributed to student learning required qualitative evaluation. The inter-relationship between the student-centred nature of the RPP and the attitudes of the students to rural practice and lifestyle also required investigation. Several strategies were used to collect both these data and additional information about the RPP.

Pre-and post-placement questionnaires

With reference to questionnaires used in medical and allied health placement evaluation, an open- and closed-response questionnaire was developed. Students were asked to list motivating factors and learning objectives for the RPP. These were used in constructing the RPP and were also used (in conjunction with a post-placement
questionnaire) to determine the learning achieved during the program. Other elements of the questionnaire were included: to investigate specific areas for general information; to inform future development of the RPP; and strategic directions for admissions policy. All 24 students returned both pre- and post-placement questionnaires.

The influence that rural background has on future rural practice has been considered in medicine and allied health\(^\text{(136,137,154)}\) and the questionnaire included questions relating to the educational and geographical backgrounds of the participants.

Multi-disciplinary University Rural Health Clubs\(^\text{(211)}\) were established to support and nurture students who had an interest in a rural career in health. Participating students also spend time talking to high school students in rural areas in an attempt to enlighten and enthuse these students to a rural career. In 1999, the success of the University of Sydney Health Club, MIRAGE, was acknowledged and honoured by the Vice-Chancellor, Professor Gavin Brown.

The four fourth year students permitted to participate in the RPP were active members of MIRAGE, with one student holding the position of Vice President. During discussions with these students, and as a consequence of the RPP coordinator attending various MIRAGE functions, it became apparent that knowledge about, and membership of MIRAGE within the dental student body was limited. It was therefore decided to include a specific question about MIRAGE to inform the group’s executive. This provides an example of input from students in the role of co-researchers.

Mindful of the needs of all of the stakeholders it was also pertinent to include questions relating to the perceived strengths and limitations of rural dental practice. It was anticipated that this would inform reporting and the development of appropriate rural workforce strategy.

Students were asked to indicate their interest in a rural career before attending the RPP by circling a number from 1-10 (where 1 = no interest and 10 = extremely interested).
This interest level was compared with that indicated in the post-placement questionnaire. Students were also asked for tick-box feedback on the structure and content of the RPP to contribute to future RPP development.

In summary, the questionnaire was prepared to inform development of the RPP, to ascertain base-line data about participants, to determine the impact of the RPP on career interest and learning, and to investigate attitudes and perceptions about rural dental careers. The final pre-placement questionnaire is appended.

**Reflective statements**

Students wrote reflective statements before the RPP and again, on completion of the program. It was expected that the students would refer to their Learning Journals when compiling the second statement. This tool was used to determine whether the students had reflected upon their experiences and avoided the need to review 24 personal journals.

**Log books**

Students maintained records of all treatment provided during the RPP. It was anticipated that these data would be compared with clinical productivity in each of the dental clinics for the month preceding the RPP so that a crude comparison could be made. This element had no reflective component although it was expected that students would include such commentary in their Learning Journals.

**One to one interviews with students and staff**

Field notes were made during all of the individual student meetings. In addition, outcomes of informal discussions were documented and were used to explore perceptions and reflections on the RPP. On occasion, probing questions were asked to encourage information exchange.

Within one month of the completion of the RPP, the coordinator met with the mentors to determine future directions. This meeting was supplemented by a request for
written, more formal feedback. In addition, treatment data were requested from the two clinics.

**Discussions with stakeholders**

As indicated earlier, a ‘reporting’ stage was incorporated into the action research model. This step was intended to be a prompt for subsequent discussions with all of the stakeholders. The outcomes of these discussions were used to inform both program development and research from the program.

A research journal was commenced and a portfolio maintained throughout the RPP by the coordinator. All of the information was used in the final RPP evaluation report and this was distributed to all of the co-researchers in the project. Students received a final report within three months of the RPP and were invited to comment. All staff, that is all of those personally involved with the RPP and the research, received an electronic copy of the report and were invited to verify the truth and accuracy of the report and reflect on it when determining future directions. It was anticipated that this input in conjunction with personal reflections would provide appropriate rigour and reduce investigator bias.
Supporting the potential for the RPP to become a formal requirement of dental education necessitated appropriate academic rigour and alignment with curriculum goals. Evidence of student learning was obtained by comparing components of the pre- and post-placement questionnaires, and examining the Learning Contracts, assessment outcomes and Reflective Statements. Through cross-referencing of this material, relationships between learning and the impact of the RPP on students were established.

As described in Chapter 6, students were encouraged to use the Rural Placement Program as an experiential framework in which they could learn more about the issues that concerned or interested them most. In alignment with experiential learning theory (see Chapter 3), it was expected that students would demonstrate learning from the RPP by virtue of their reflections on the experience. Such learning would also be expected to have an impact upon their self-awareness and the development of a personal construct.
Reflective statements

During the pre-placement briefing session, the students were challenged by, but embraced the idea of reflective statements. As the students were self-selected and gave up their holiday to attend the RPP, it would not be unreasonable to consider them to be a particularly motivated group who could identify personal benefit from participation. During the pre-placement briefing session, a ‘points to ponder’ template for the reflective statements was developed. This template consisted of prompting questions developed by the students and was subsequently distributed to them in the RPP Handbook.

A total of 20 students (83% response rate) submitted pre-RPP reflective statements. Of these, four had specifically responded to the prompting questions with no attempt to develop or personalize the ‘points to ponder’. Sixteen students chose to write their statements in the form of a letter. It was interesting to note that from the outset, these 16 students were willing to write very honestly and personally. Almost all of the students documented their desire to experience rural dentistry and lifestyle, primarily to inform future career direction. Examples of comments are provided below.

“I guess I’m sussing the place out as a potential for living and working as a dentist when I graduate. I want my curiosity satisfied about everything to do with the rural placement and rural life in general and that involves working life and non-working life. I cannot narrow it down to one or two things to learn about. I feel that it is important to immerse oneself in the life of a place and experiencing everything first hand”.

Student 18
"I think that a rural setting demands patience and acceptance of different ways of doing things. It makes you get out of your comfort zone. I want to find out if a country placement will be suitable for me in my first year out. I think a lot of my expectations are based on stereotypes and myths and I want to know the truth".

Student 23

"I have never really been in rural areas of NSW before and so I have no idea what it will be like. I know that there are many myths and I hope that I will be able to find out whether they are true or not. I would really like to work somewhere that really needs a dentist. I need to find out whether it's a dream or a reality".

Student 12 August 2000

"As I write this statement it becomes increasingly more difficult trying to describe my feelings, kind of like a mixture of anxiousness, nervousness, excitement, apprehension and fear. Thinking of how the country would be like seems daunting. Images that immediately spring to mind is largely based on the TV. Thoughts of a little shack with clouds of dust swarming and ants crawling all over the place is the image that I see.

As I think more about dentistry I imagine elderly dentists with little current knowledge, providing compromised or "dodgy" dentistry in small, cramped conditions with no amenities. It begs the question, "why should I come out here?". It seems less daunting to come with a group of friends and see for myself".

Student 07 August 2000

These randomly selected examples from the pre-RPP reflective statements indicated that the major reason for students attending was to actually experience rurality first-hand. This is not surprising as most students were totally unfamiliar with rural NSW prior to the RPP (please see ‘Data and Analysis’ section later in this Chapter).
On completion of the RPP, all 24 students (100% response rate) submitted a second reflective statement. These statements were obviously written independent of the guidelines for reflective statements outlined above. The increased return rate may have been due to an increased appreciation of the intrinsic value of such reflection or may have simply been as a direct consequence of an improved student and coordinator relationship.

The content of these post-RPP statements indicated that individual goal-oriented learning had occurred during the RPP. It should however be noted that in the absence of an appropriate ‘assessment’ tool, interpretation of these statements is subjective. Several students considered that the reflective statements helped them to “crystallize” their thoughts and provided direction for both the RPP and their future careers and life choices. Without exception, the statements were extremely positive. Excerpts from the post-RPP reflective statements of the students above indicate that for these randomly selected students, the RPP was a positive experience that resulted in increased learning.

“My peers laughed when I said that I wanted to “satisfy my curiosity”. Well I believe I had the last laugh. They who all concentrated on how much money they can earn as a new grad. had a really limited outlook. I put the question to them at the end of the two weeks – how can they assess just one aspect of rural dentistry? How can it be isolated from everything else? Things assessed by themselves are more often than not taken out of context. Differences exist between city and rural it is because the whole rural life impacts on that aspect of it – everything is influenced by and influences everything else. You have to look at the big picture before you dissect the little things out”.

Student 18 October 2000
"I learnt about and saw so many things that I could write a book on what I thought about it all. Overall I really enjoyed the RPP and I plan to go somewhere quite small and far away but it needs to be obviously different (D was a bit disappointing – so normal but small, no novelty). It made me feel a lot more confident that the work I do is of a good standard."

Student 23 October 2000

"I had a fantastic time and learnt much more than can be described in this statement. I think that I managed to learn a great deal and answer many of my page-long list of questions which I wanted to learn. The reason I can say this is that when I listed each question I found that I had learnt much more than I even thought I wanted to know! When I listened to the others in my group I realised that I had learnt other things too. There are still things that I want to learn but it would take longer than 2 weeks."

Student 12 October 2000

On completion of the RPP the students generally had a greater appreciation of the personal value of these reflective statements and acknowledged that they demonstrated the learning that they had achieved during the RPP. While the reflective statements provided evidence of learning, the students conceded that they had been written with very little reference to learning journals. As an evaluative tool, promoting ‘reflection-on-action’, the statements had merit however the requirement to maintain a learning journal had had little if any significant impact on ‘reflection-in-action’. During informal discussions and email exchanges with students, the over-riding opinion was that as the students had been placed in small groups, they had spent a lot of time during the RPP, discussing their experiences with their colleagues. From a personal development perspective, they considered this to have been invaluable. In terms of professional support, they acknowledged the support that the mentors had provided throughout the RPP in rationalising and conceptualising their learning. The students reported that these discussions were more valuable to them than any entries that they made in their learning journals.