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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
ACKNOWLEDGMENTS

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<thead>
<tr>
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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>
</tr>
<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>
</tr>
<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>NACOH</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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<tr>
<td>NOHN</td>
<td>Northern Oral Health Network</td>
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<td>NRAHS</td>
<td>Northern Rivers Area Health Service</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>OHB</td>
<td>Oral Health Branch of New South Wales Health</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Definition</td>
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<td>-------------</td>
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<tr>
<td>OOS</td>
<td>Occasions Of Service</td>
</tr>
<tr>
<td>PBL</td>
<td>Problem Based Learning</td>
</tr>
<tr>
<td>PDO</td>
<td>Principal Dental Officer</td>
</tr>
<tr>
<td>PPD</td>
<td>Personal and Professional Development Theme of BDent curriculum</td>
</tr>
<tr>
<td>R</td>
<td>Remote (ref ARIA)</td>
</tr>
<tr>
<td>RHSET</td>
<td>Rural Health Service Education &amp; Training program</td>
</tr>
<tr>
<td>RFDS</td>
<td>Royal Flying Doctor Service</td>
</tr>
<tr>
<td>RPP</td>
<td>Rural Placement Program</td>
</tr>
<tr>
<td>SDH</td>
<td>Sydney Dental Hospital</td>
</tr>
<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 \(^1\). 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

* 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

22
new graduate from the BDent program. These skills, referred to as ‘Clinical Competencies’ were largely based within the TPC theme#. 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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* 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 web site. 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 (43), 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 (3).

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's (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 (7) 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. (51) 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 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 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 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. 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.

Keeping written records
Powell 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 (98)) 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 (106). 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 rationalise 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 i.e. 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".
Oncha 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".
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 (\textsuperscript{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) (\textsuperscript{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 Buttfield (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. (173) 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. (37). 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. \(^{(183)}\) in the context of the establishment of the South Australian Centre for Rural and Remote Health.

Richards \(^{(184)}\, 2002 \#22\) 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. \(^{(184)}, 2002 \#162; , 2002 \#22\) 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 \(^{(184)}\) 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 \(^{(185)}\) 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”.
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 (\textsuperscript{70,197}). A traditional positivist approach would, by definition, exclude any consideration of individual thought, interpretation and action (\textsuperscript{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’ (\textsuperscript{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 (\textsuperscript{200}). As noted by Kember and Kelly (\textsuperscript{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 (1). 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” (2). 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 debrief 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. Anecdotal 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’.
"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
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.
RPP structure

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 2: Defined learning outcomes for students participating in RPP 2000

<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.

i) 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 cycle 1

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 \(^{(136, 137, 154)}\) and the questionnaire included questions relating to the educational and geographical backgrounds of the participants.

Multi-disciplinary University Rural Health Clubs \(^{(211)}\) 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.
STUDENT LEARNING

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. If 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.
Awareness of oral health issues

In an attempt to elicit a tangible measure of learning, students were asked to list as many oral health issues that affected rural communities that they were aware of before attending the RPP. On completion of the program, the students were asked the same question. Before the placement, 8 students (33%) were unable to identify any more than two dental health issues affecting rural communities. On completion of the RPP, this had decreased to 4 students (16%). In addition, students identified two oral health issues that they had not considered before the placement and their responses were both more detailed and demonstrated clarity of thought. There was increased awareness of indigenous oral health needs and the students were able to describe the issues rather than speculate and list issues. For example, "Fluoridation??" was mentioned before the RPP whereas after the RPP the student (08) documented that, "although the water may be fluoridated, if the people in the community do not drink it they cannot expect to get the benefits! Mind you, it does taste foul!"

Table 3: Oral health issues identified by students pre- and post- RPP 2000

<table>
<thead>
<tr>
<th></th>
<th>Number of comments pre-RPP</th>
<th>Number of comments post-RPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to dental care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate manpower</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Lack of Specialist support</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Geographical isolation</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Lack of allied health support</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Funding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inability to pay for treatment due to low income</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Lack of public sector funding</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Patient factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited dental awareness</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Lower dental health priority</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Aboriginal health needs</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Increased caries incidence</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Public health issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of fluoridation</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Little oral health promotion</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
The major benefit of this element of the research was to determine common areas of deficiency in knowledge before the RPP and thus facilitate the development of appropriate core topics to be included in the orientation program. It was apparent however that the students had a greater awareness of oral health issues facing rural communities after the RPP. There was a significant increase in awareness of geographical isolation after the RPP. Before the RPP, there was a perception that rural residents would not be ‘dentally aware’ however after the RPP, this was considered to be less of an issue.

**Learning outcomes and Learning contracts**

In order that the various activities and experiences were constructive, students outlined their own anticipated learning outcomes from the program and identified methods by which they would achieve these outcomes. With support from the RPP coordinator, each student selected one of their learning outcomes and developed this to become their formal learning contract for the program. Mindful of the potential benefits of shared learning and in an attempt to encourage peer-facilitated reflection throughout the RPP, the learning contracts were negotiated to ensure that as many of the group learning outcomes were covered as possible. In order to optimise learning, a structured orientation program, exposing students to commonly identified learning outcomes, was combined with a tailored individual learning contract.

Learning contracts have been reported as benefiting students through increasing personal responsibility (86), providing a focus for learning (212) and demarcating roles, responsibilities and expectations of learning (213). As a large number of clinical supervisors were involved with the RPP, the added benefit of provision of a working structure for RPP participants (188) was beneficial.

All 24 students submitted reports on completed learning contracts. All of these contracts provided evidence of student learning in the selected area but they did not allow any evaluation of additional learning. During the post-placement briefing session it transpired that many students found it onerous to establish learning outcomes,
maintain learning journals, fulfil learning contracts and determine criteria for self- and peer assessments. There was however unanimous agreement that these elements enhanced learning throughout the RPP. One student (02) commented that, "The contract gave us a focus when we were visiting the different places and as we learnt more, we also learnt more about what to ask".

The post-placement questionnaire specifically requested feedback on the various elements of the RPP. When asked whether the learning outcomes and contracts should be retained, 22 students (92%) felt that the learning outcomes and contracts had been an essential element of the RPP and that they should be retained. The remaining 2 students felt that "they were too much work" (19) and one commented that, "We didn’t need to have learning requirements like this - it was all so new that we had no choice but to learn" (05).

On the final morning of the RPP, the completed learning contracts formed the basis of a 10-minute presentation to peers. Individual learning was therefore shared with peers and this promoted student reflection on their experiences in an informal setting. Several of the participating staff were able to attend the sessions to provide further learning opportunities.

On reflection, the RPP provided numerous opportunities for students to determine their learning but as the RPP took place over a short period of time (2 weeks) there were too many elements included within the program. The individual strategies selected, the time involved in negotiating contracts and criteria, and the expectation that the students would complete all of these requirements resulted in a perception of an excessively high workload for all involved. In addition, support for individual learning and assessment was not always provided. As a consequence, some students felt that their learning was not as well supported as they had anticipated.

"Thought we had it all worked out but apparently K informed students that contracts were pointless and that it was much better to talk things through. He may be right but they were a bit fed up that they had done all the work and then
it was disregarded. Think it worked really well with the ones that I did but it really needs me to be able to work through with all of them afterwards. Having done the contracts and self-assessment I feel a bit disappointed that I didn’t get to talk through the outcomes with all of them individually. Possible solutions?? I do de-brief all of them in one place eg Sydney. Provide better staff support. Reduce number of strategies. Need to talk it through with the mentors”.

DJC December 2000

Self-assessment strategies and outcomes

As previously discussed, students were required to complete a self-assessment for the RPP to ensure that the assessment was in alignment with each student’s individual learning outcomes. As the RPP was an elective curriculum component there was no formal summative assessment requirement. During the pre-placement session and the one-to-one sessions during orientation, it was indicated that the ‘unofficial’ assessment requirement would be restricted to successful fulfilment of the learning contract and that this would be non-ranked and non-graded assessment using pass or fail descriptors.

Twenty one of the twenty four (87.5% response rate) students submitted their self-assessments at the post-placement session in Sydney. Students who had elected to peer assess completed this assessment during the final session of the RPP.

The assessment strategies selected by the individual students showed remarkable similarity. All of the students selected a pass/fail approach to their assessment however three students described a ‘bonus system’ whereby they would assess themselves as “excelling” according to various criteria. These additional criteria were “enjoyment of the program” (11) and "helps me to decide about my future career" (07 and 08). The determination of self-assessment criteria required considerable discussion and guidance. Students tended to be either ambitious or overly simplistic. As these students had little or no prior experience of self-assessment or criterion referencing, there were
unreasonable expectations of their ability to embrace the concept. Inevitably, many of the criteria were influenced by the facilitation of the RPP coordinator.

Table 4: Summary of self-assessment criteria used during the RPP 2000

<table>
<thead>
<tr>
<th>Self-assessment criteria</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totally achieved all learning outcomes</td>
<td>9</td>
</tr>
<tr>
<td>Fulfilled learning contract and partially achieved learning outcomes</td>
<td>1</td>
</tr>
<tr>
<td>Partially completed all learning outcomes</td>
<td>5</td>
</tr>
<tr>
<td>Fulfilled learning contract</td>
<td>2</td>
</tr>
<tr>
<td>Clarification of future career direction</td>
<td>3</td>
</tr>
<tr>
<td>Learnt anything</td>
<td>1</td>
</tr>
</tbody>
</table>

The other three students chose to award themselves a ‘bonus’ as outlined above. Throughout the RPP, students were asked about the self-assessment strategy in the context of the RPP becoming a mandatory element of the curriculum. Various alternative assessment strategies were discussed.

All 21 students assessed themselves as having 'passed' the RPP, including the three students who defined an additional level (Pass +).

"This placement has been a success for me as I have fulfilled my learning contract and have shared this learning with the rest of the group - I passed!"

Student 19 October 2000

"I achieved all of my (10) learning outcomes! I am glad that I pushed myself and it was fun"

Student 03 October 2000

"Passed the program for sure and definitely a bonus that it has had a positive effect on future career direction".

Student 23 October 2000
Many students made additional comments to supplement their self-assessments suggesting that their chosen criteria were inadequate to define their learning from the RPP.

"Have I done all that I wanted to do? Yes – I may have done more with more time. Have I learned anything? YES – there’s practically a new learning experience for me every day. My approach to dentistry is broadened. Have I fulfilled my learning contract – definitely yes."

Student 06 October 2000

"I learnt about things I didn’t even have a view on before so my self-assessment was a bit limited in retrospect. Definitely a pass though!"

Student 12 October 2000

Sixteen students (76% of those who submitted a self-assessment and 66% of the whole group) felt that the self-assessment strategy enhanced reflection on their learning and should be retained as a component of the RPP.

Peer assessment strategies and outcomes

The value of peer assessment in student learning has been described (84, 97). As stated by Nightingale, "the overwhelming view is that peer assessment is generally a useful, valid and reliable exercise".

Selecting grade descriptors for peer assessment was a difficult exercise for the students who employed many different strategies. Students selected pass/fail, percentage and the traditional University system of grades ranging from High Distinction to Fail. All of the students felt that 'fulfilment of learning contract' was an essential criterion although numerous other criteria were referred to. These included various elements of presentation style and evidence of shared learning at various levels. It was also interesting to note that the students involved with the RPP selected criteria that
assessed both product and presentation as previous reports have noted that students focus on either one element or the other (97) (105).

Their peers assessed all of the students as having passed the program. Only three students used the originally defined criteria and 12 supported their peer assessment with written feedback. Students showed a general reluctance to 'fail' their colleagues as demonstrated by comments such as "pass but only just" and "pass - ". The peer assessment component of the program was neither valid nor reliable as there was insufficient time available to develop the assessment criteria. In retrospect the inclusion of this assessment strategy may have been overly ambitious as the students required considerable and unanticipated levels of support to develop the other planned assessment methods.

Only 6 students felt that the peer assessment was a valuable element and at the post-placement de-briefing session, one student summed up the feelings of the group.

"We had never really thought about how to assess other people. It seems easy at first but then you have to decide whether they need to fulfil all of your criteria or just some of them. If it's just some of them, which ones? I don't think that any of us would have actually failed anyone".

Student 11 October 2000

Another student (21) felt that the exercise had been useful in demonstrating the variability and subjectivity of assessment in general, and from this perspective it had been useful in rationalising the assessments obtained during undergraduate studies.

Unfortunately many of the students "forgot" to complete this element of the RPP and it did not seem to impede their learning as demonstrated in the post-placement questionnaires and reflective statements.

"I couldn't really see the point of the peer assessments - it was better to chat about the presentations rather than mark them. We learnt heaps just through
sitting and chatting about stuff especially when the dentists were involved as sort of equals".

Student 16 October 2000

ADA NSW Risk Management session
As discussed in Chapter 6, the ADA NSW were key stakeholders in the RPP and a formal evaluation of the Risk Management session facilitated by O and B was undertaken. The aim of the session was to demonstrate to students that rural practice carried no greater risk of litigation than metropolitan practice. The objectives were to; Identify and evaluate the possible risks involved with the provision of dental treatment, Develop strategies to select and implement techniques for minimising such risks, and Discuss the various aspects of complaints resolution

The session comprised a short introduction, a case-based learning activity based on real cases and a concluding presentation. All students were asked to complete a short open and closed response anonymous questionnaire at the end of each session. The response rate was 100% and the evaluation outcomes are summarised in Figure 3.

![Graph showing student evaluation of Risk Management session](image)

Figure 3: Student evaluation of Risk Management session 2000 (n=24)

When asked to comment on aspects of the session that particularly enhanced learning, fourteen students felt that the use of case-based learning was of distinct value. In addition, the value of small group work was further acknowledged. "Interactive
learning (is) definitely better than being given the lists yourself". The "input from other people" and the "ability to brainstorm/critique others" were quoted as being helpful in learning. Seven students specifically commented on the approachability of, and support from the facilitators as being important in their learning. Students made comments such as "We could ask whatever we liked", "presence of a tutor helped guide us in the right direction or pick up on important points we missed", "facilitator kept the ideas rolling" and "facilitators had expertise in their fields, were open to questions and challenged our thoughts".

Nine students stated that the presentations and facilitation provided by O and B were important in their learning. "O was facilitator - large knowledge base". "Presentations were easy to follow and relevant". "Hearing from a lawyer's point of view - a new perspective"

The students were also asked to list any improvements that may be made to the session. Nine students were unable to identify any area for improvement. Of the fifteen students who made suggestions, seven would have liked to consider more cases. Whilst additional cases would undoubtedly be beneficial, the session time would have to be increased proportionately in an already heavily timetabled orientation program.

Three students would have liked a longer session while two would have preferred a shorter session or more breaks, with one student commenting that, "too long sitting in one place leads to decreased concentration, start to feel sleepy therefore decreased value of excellent information". Two students would have preferred to receive the case material in advance of the session in order that they would have had longer to think about the issues involved. Two students requested that there should be more time at the end of the session for questions. One respondent suggested that, "scenarios could be given and we could be asked to discuss them as a group with the added info. etc. then there could be presentations to the rest of the class. After this we could be asked if these scenarios took place in the country would things change? I think this would be a good way of introducing a rural focus without complicating the other issues".
As shown in the student feedback, this session was perceived by the students to be relevant to both degree program and future career. The cases provided useful learning experiences and the facilitators supported the learning. The students noted that the case-based learning format was helpful in their learning and that the contribution made by O and B was of great benefit.

This evaluation was central to the reporting element of the RPP and is considered further in the 'Reporting' section of each Chapter in Phase 2.

Role of staff

Feedback from interviews and the questionnaires demonstrated the crucial role that staff played in the RPP. Many clinicians were mentioned by name as being particularly supportive and being one of the “three best things about the RPP” in the post-placement questionnaire. The students were astounded at the level of support that they received. As there were always fewer than four students to one staff member, it was inevitable that the level of practical support would exceed that experienced by students during metropolitan-based clinical education. This was of great benefit to the students and led to increased self-confidence in clinical skills.

“I think that the RPP has made me more confident on the clinics. I have greater confidence in the things that I can do and much more of an idea when I really need help rather than just asking the tutor all of the time. A gave me some tips about diagnostic sieves and I have used this a lot, specially in Oral Surgery – its also helped those who didn’t meet A as they asked me about it and we are now using this to revise for finals. I think he was pleased when I told him!”

Student 22 (by email) October 2000

One student expressed concern at a particular technique used by a staff member. Interestingly, the staff member reported concerns at the narrow range of clinical awareness shown by some of the students. During follow up one-to-one discussions it
appeared that the student had been rather confrontational in his analysis of the staff member’s technique and this had led to a fairly heated debate between the staff member and the student. This ‘critical incident’ had not been reported at the final debriefing session during the RPP as both the student and the staff member were present at this session. The ability for the RPP coordinator to discuss the incident with both parties independently assisted in their learning from this experience, as both the student and staff member referred to the enlightenment in post-RPP feedback.

DATA COLLECTION AND ANALYSIS

Data collection
Elements of the collection and analysis of data have been mentioned in the previous ‘Student Learning’ section and they will be discussed later in this section. Other data collected from the questionnaires, interviews and logbooks will be described and analysed in this section. Of the 24 participants, all students submitted post-RPP reflective statements and questionnaires.
Student familiarity with rural lifestyle

There is evidence that students who are familiar with rural lifestyle, particularly if they have spent their childhood in rural areas, are more likely to return to rural areas when they graduate (see for example \(^{136, 141, 154, 157, 214}\)). A meta-analysis of the literature \(^{160}\) concludes that a combination of rural background and rural placement during medical education is the most significant predictor for future rural practice. In order that this combination could be considered in the context of the RPP, students were asked to indicate their familiarity with rural lifestyle before the program.

The majority of students attending the placements felt that they were unfamiliar with rural lifestyle. Seventeen students (71%) had spent less than one month in rural areas of Australia and six of this group (25% of RPP cohort) had spent no time at all in rural areas. One student had spent most of his life in rural NSW but had attended secondary school in a metropolitan area. The remaining students had spent up to 1 year in rural NSW. Twenty two of the students (92%) had completed their primary and secondary education in a metropolitan or regional centre. Two students were overseas-trained dentists and had only recently arrived in Australia to complete their studies; one of these students had spent over 10 years in rural areas of India. In their pre-RPP reflective statements, many students referred to their lack of knowledge about rural lifestyle and practice.

"Then I started thinking more about what would being a dentist in a country town be like - this curiosity was more intensified when I opted to go on the rural placement. I wondered how I felt about leaving behind 'city life', what advantages and benefits would there be? What would the life-style be like? The people? The dentistry?"

Student 22 August 2000

"I have lived in regional Australia and visited a farm or two but most of my expectations of rural life are based on TV and the opinion of a handful of people. I imagine rural people to perhaps be a bit tougher than me and a bit
more practically-minded. In my imagination they all ride horses or motorbikes."

Student 03 August 2000

"I always had a picture that country lifestyle would be very challenging as there will be so many things to get accustomed to. Being a person who has spent a lifetime in the city, I actually have no idea at all about the country"

Student 11 August 2000

The two students who considered themselves to be familiar with rural lifestyle had spent several years in regional and rural areas. Student 03 had been educated in a regional town and spent holiday time in metropolitan areas. Student 09 had attended a rural primary school and a regional high school. The experiences and comments of these students are considered further later in this Chapter and in an overall analysis of the RPP in Phase 3.

Student attitudes to rural practice before and after RPP

Students were asked to list three major advantages and three limitations of rural practice before and after attending the RPP. Before the placements, the major advantages reported were rural lifestyle, being a member of a small, friendly community and the broad range of clinical experience available, in decreasing frequency. The frequency of responses is detailed in Table 5 below. Student perceptions of the three major advantages to a rural career were consistent before and after the RPP although ‘rural lifestyle’ was ranked third after the RPP. Seventeen students (71%) listed "being part of a small, friendly community" as being the major advantage of a rural career. Five students (21%) also identified the “low cost of living” as being a major advantage having experienced the RPP.
Table 5: Students perceptions of major advantages of rural dental practice pre- and post-RPP 2000

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Frequency of response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-placement</td>
</tr>
<tr>
<td>Rural lifestyle</td>
<td>14</td>
</tr>
<tr>
<td>Being part of a small, friendly community</td>
<td>14</td>
</tr>
<tr>
<td>Broader range of clinical experience</td>
<td>11</td>
</tr>
<tr>
<td>Less stressful working environment</td>
<td>8</td>
</tr>
<tr>
<td>Increased remuneration</td>
<td>6</td>
</tr>
<tr>
<td>Full-time employment opportunities</td>
<td>5</td>
</tr>
<tr>
<td>Ability to provide care where none exists</td>
<td>3</td>
</tr>
<tr>
<td>Low cost of living</td>
<td>0</td>
</tr>
<tr>
<td>Easy commuting</td>
<td>0</td>
</tr>
</tbody>
</table>

Students listed the perceived limitations of a rural career before the RPP. As the majority of the students had reported that they were "not familiar" with rural or remote areas, it would seem that these limitations had been identified following discussions with others and through the media portrayal of "the bush", with one student referring to the film "Crocodile Dundee". After the RPP, students quoted "professional isolation" as being the major limitation of a rural career (ranked 3rd before Program). The "distance from family and friends" was still an important consideration however after the program, 33% of students who had originally considered this to be a limitation felt that this was no longer the case. Similarly, of the eleven students who listed "lack of social activities" as being a limitation, four felt that this was not the case after the RPP. All seven students who felt that 'the bush' was too far from Sydney withdrew this comment after the placement. As the students travelled by plane to both Broken Hill and Dubbo, it is assumed that the ease of transport contributed to the altered perception. Before the placement, a total of 52 perceived limitations were listed
by 24 students, however after the placements, the total number had decreased to 40. The frequency of response has been tabulated below.

**Table 6: Perceived limitations of rural practice pre- and post-RPP 2000**

<table>
<thead>
<tr>
<th>Limitations</th>
<th>Frequency of response</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Distance from family and friends</em></td>
<td>Pre-placement: 15</td>
</tr>
<tr>
<td><em>Lack of social activities</em></td>
<td>Pre-placement: 11</td>
</tr>
<tr>
<td><em>Professional isolation</em></td>
<td>Pre-placement: 9</td>
</tr>
<tr>
<td><em>Distance from Sydney</em></td>
<td>Pre-placement: 7</td>
</tr>
<tr>
<td><em>Lack of education choice for children</em></td>
<td>Pre-placement: 4</td>
</tr>
<tr>
<td><em>Cultural isolation</em></td>
<td>Pre-placement: 2</td>
</tr>
<tr>
<td><em>Lack of public transport</em></td>
<td>Pre-placement: 2</td>
</tr>
<tr>
<td><em>No opportunity to meet a partner</em></td>
<td>Pre-placement: 1</td>
</tr>
<tr>
<td><em>Being identifiable within the community</em></td>
<td>Pre-placement: 1</td>
</tr>
<tr>
<td><em>Difficulty in leaving once established</em></td>
<td>Pre-placement: 0</td>
</tr>
<tr>
<td><em>Poor remuneration</em></td>
<td>Pre-placement: 0</td>
</tr>
<tr>
<td><em>Rural lifestyle</em></td>
<td>Pre-placement: 0</td>
</tr>
</tbody>
</table>

This suggested that the RPP had confirmed the students’ perceived advantages of a rural career and reduced the number of perceived limitations to a rural career. 'Professional isolation' was the only area in which students felt that the reality was more of a limitation than they had perceived and became the first ranked area of concern for the students. This has implications for new graduate employment in rural areas and is discussed in Phase 3.

**Students’ attitudes to rural lifestyle on completion of the RPP**

On completion of the RPP, most students felt positive about the rural lifestyle as evidenced by their post-placement reflective statements and as indicated above. Students who had been involved with the University health club, MIRAGE, had a
more realistic idea about rural lifestyle and on completion, felt that this awareness before the placement had enhanced their experience. As a consequence of the RPP, seven students (30%) expressed a desire to become more involved with MIRAGE activities on campus.

"This two weeks gave me a chance to taste the country life before making any big moves and without this opportunity I probably wouldn't have ventured out of Sydney to work".

Student 21 October 2000

"This scheme has really changed my perceptions of the country. It was really surprising how much different it was to the image portrayed on the mass media. Friendly people with warm hearts and plenty of things to do - it was great"

Student 01 October 2000

"The pace of life was a little slower yet the people seemed laid back and very friendly, which was a noticeable contrast to the hustle and bustle of the city where engaging in a conversation with a passing stranger is a rarity. I could adapt quite comfortably"

Student 15 October 2000

**Student interest in a rural career**

Students were asked to indicate their "present interest in a rural career" before and after the RPP. The responses were based on a scale from 1 to 10 with 1 equating to "no interest" and 10 equating to "very interested" and are represented graphically in Figure 4.
SPSS® software was used to analyse the pre- and post-scores. The mean interest scores before and after the placements were almost identical 7.4 ±1.8 SD and 7.3 ± 2.0 SD respectively. A paired samples T Test provides t = 0.116 with 23 degrees of freedom and a corresponding significance level of 0.908. There was therefore no significant difference in the grouped pre- and post-RPP rural career interest scores however analysis of pre- and post-scores demonstrated a positive impact for individual students. The number of students reporting an interest rate of 9 or higher increased from seven (30%) to nine (38%). Seven students (30%) were more interested in a rural career after the RPP, ten (42%) were less interested and seven (30%) had the same interest level before and after the RPP. It is interesting to note that of those who were less interested after the RPP, five (50% of this group) had a decreased interest rate of 1 unit. Of the group who had an increased interest, three (43%) had increased their interest rate by 3 or more units.

Four students rated their interest rate as 5 or below both before and after the program. Discussions with this group of students revealed that three of the group had family commitments that prevented them from leaving the city. One of the five (09) had spent most of his life in rural NSW and "I now know for certain that I don't want to go back, at least not yet". This student considered that his professional education afforded him

*SPSS 11.0 software. Copyright © 2001 by SPSS Inc., Chicago*
mobility and flexibility, and he was reluctant to return to the "narrow mindedness" that he had experienced during his formative years.

In order to provide more insight into attitudes towards and interest in rural or remote practice, the reflective statements were reviewed and the following comments were made by students at the end of the placement. The comments made in the post-placement reflective statements confirm the perception that the program had a positive influence on future career direction. While not all students wished to practice in rural areas, the RPP had provided them with the opportunity to clarify their thoughts and ideas about their futures.

"Now I think that I would seriously consider working in the bush. Lightning Ridge appeals to me; hopefully there's still an opportunity to go there. I don't want to sound too keen and unrealistic but at this point I think going there will be a good option" (Interest levels 8 to 9)

Student 12 October 2000

"I plan to go somewhere quite small and far away- like Walgett or Broken Hill - because I'm ready for a change and I want it to be obvious" (Interest levels 9 to 9)

Student 23 October 2000

"Overall the rural experience has been beneficial as it has increased my awareness of life in rural areas and increased my willingness to work in the rural sector. Whether I work in a rural area will depend on what family commitments I must fulfil next year" (Interest levels 5 to 8)

Student 19 October 2000

"I feel that my pre-conceived ideas have been challenged- dentistry is the same wherever you go. I have come out of this experience with a lot of positive decisions about how I feel about rural dentistry" (Interest levels 4 to 3)

Student 06 October 2000
Role of peers

While the inclusion of peer assessment was not successful, the students acknowledged the support of their peers during the RPP.

"The size of the group helped - I was a bit worried I wouldn't know where to go or what to do but lots of people made it all easy and non-threatening. I thought that I might get stared at but as there were lots of us it wasn't an issue".

Student 03 September 2000

"It was great to have a buddy to experience it all with. When Student 18 was nursing for me I felt more secure as I knew that she knew how good (or bad!) I was and that she would help me if I stuffed up (I didn't!!). If I'd been there on my own I think it would have been more nerve racking. Thought that I did OK as she gave me confidence".

Student 15 October 2000

During group discussions and development of Learning Contracts it became increasingly apparent that many students were concerned that they may attract attention due to their Asian appearance. They were of the opinion that rural residents were racist and that their Asian backgrounds would mean that the community did not accept them. They admitted that they had had reservations about attending the RPP on this basis but were reassured when they realised that they would be attending with peers. Within a short time, these fears were allayed and students reported feeling more confident about spending time in smaller groups. There were no reported incidents of racial prejudice and the students commented that they had been made to feel welcome by all of those residents that they had encountered. Students spoke to local Asian residents and reported that these residents were unaware of any racial tension in the community.

On reflection, electing to provide a group RPP experience benefited students for several reasons. With the changing student demographic, many students had concerns
about bigotry and in addition, the vast majority of students had not visited rural areas before the RPP. Many students mentioned the value of peer support from practical and personal perspectives. They also considered that they would be more likely to consider relocating to rural areas if they were able to live and work with new graduate colleagues. The role of peers as co-learners and clinical allies in the experiential program were also considered to be important in the RPP. This is discussed further in Phase 3.

Staff input

In response to the statement "I felt well supported during my rural experience", seven students strongly agreed, twelve agreed and one was unsure. The PDO based in Dubbo and Broken Hill acted as mentors to the students. Students were asked about the role of the mentor in the RPP given the statement, "The mentor was supportive and allowed me to clarify issues of importance to me". Seven students strongly agreed, eleven agreed and two were unsure. During the second RPP, one mentor was unavailable and this was commented on in the student interviews.

Student 19: "It was much better when P was there – he was away second week and we weren't quite sure who we were supposed to go to. There weren't any major dramas and I suppose it was the activities outside the clinic that we missed out on."

Student 22: "But we did get to work with S who was great ...."

Student 19: "Yeh I suppose what we missed in one area we gained in another"

Student 21: "Yes but we all felt that when P wasn't there it didn't seem to be so organised. It was important to have one person who was the identified boss. It was still OK though"

Seven students strongly agreed that the clinicians involved enhanced their learning. Twelve students agreed that this was the case and one was unsure.
"Some had other ideas from mine but it made me think and even if I don't agree I get something out of the discussions. It was all so different from Uni."

Student 11 October 2000

"M was fantastic. All of the dentists seem so enthusiastic about what they do. They have inspired me a lot in choosing a rural career but I wonder whether it was for our benefit. Haven’t really seen many dentists working in Sydney – would be worthwhile visiting private practices before we come so that we have something to compare it with"

Student 08 October 2000

There were several comments that related to the different methods and materials used by rural practitioners and although a majority of students agreed that they were well prepared for their placement, it was apparent that the diversity of treatment options should be discussed in more detail before future placements.

"Watching R really made me think about what makes a good dentist. Patients loved him and obviously had been seeing him for years. Lesson for today ....GOOD TECHNICAL DENTISTRY DOESN’T NECESSARILY MAKE A GOOD DENTIST"

Student 12 (from learning journal submitted voluntarily)

Student contribution to oral health care

During the RPP, students were required to keep a logbook of their clinical experience. Analysis of these logs reveals that the 24 students were involved with the treatment of at least 840 patients during the seven days of their clinical attachments#. Details of patient encounters are summarised in Table 7.

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# Wednesday to Friday of RPP Week one and Monday to Thursday of RPP Week two
Table 7: Clinical experience of students during RPP 2000

<table>
<thead>
<tr>
<th></th>
<th>Operator</th>
<th>Assistant</th>
<th>Observer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of patients</td>
<td>205</td>
<td>149</td>
<td>486</td>
</tr>
<tr>
<td>Average number of patients</td>
<td>9</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Range</td>
<td>2-21</td>
<td>0-23</td>
<td>0-70</td>
</tr>
</tbody>
</table>

Several students commented that they had "given up" recording patient care in which they assisted or observed therefore the only accurate statistics relate to the number of patients treated. A total of 205 patients were treated over the eleven-day period in Dubbo and Broken Hill. During the planning of the RPP, various methods of quantifying the students' productivity were discussed with the Principal Dental Officers. It was agreed that an analysis of productivity in the clinics for August, the month before (21 working days) the placements, would form the basis for comparison. In September the students worked for a total of seven days in the clinics.

The PDO in Dubbo provided a written evaluation of productivity and stated that, "The highlight is the apparent increased productivity in the two most common services of fillings and extractions [plus 28% and 31% respectively]. In light of these findings it could be said that Placement 2000 had a positive rather than a neutral or negative impact on the productivity of the Dubbo Community Dental Clinic".

Due to unforeseen circumstances, the PDO in Broken Hill stated that "Unfortunately, (I) didn't think to keep tabs on productivity, but the help the students gave was significant and would be reflected in a greater output for the period they were here".

In the Town Dental Clinic in Broken Hill, patients attending the clinic for either routine treatment, or emergency care, were allocated to a student operator. Patients were informed that the clinic was an accredited facility of the University of Sydney. All patients consented to treatment by the students. In contrast, patients awaiting
routine care at the Dubbo Community Clinic were contacted by the receptionist and offered an earlier appointment with a student. All of those contacted accepted this appointment with no apparent reservations. As many of the patients had waited a considerable length of time for their treatment, they were amenable to the concept of supervised care with a student.

The receptionist at Dubbo commented that, "the patients expressed some anxieties on arrival at the clinic and were reassured by myself and the nursing staff. They were generally very pleased with the treatment provided and several patients asked if it would be possible to see the student again". In his evaluation, the PDO at Dubbo noted that, "One of the good outcomes is that the patients have been happy with their treatment with no complaints and some positive feedback".

Staff feedback

As co-researchers, all staff involved with the RPP were surveyed using a brief open and closed response questionnaire. In addition, personal or telephone interviews were conducted during the three months following the RPP. Several staff supplied additional written comments.

The clinicians involved in the supervision of students in the public dental clinics were "pleasantly surprised" at the ability of the students. One clinician however expressed concern that the students had a very "narrow outlook on restorative dentistry".

Another noted that, "whilst all students appeared confident and comfortable with patients there was a perception in this second rotation, that perhaps students did not fully realise that one of the purposes of their clinical placements was to broaden their horizons: to listen to and try alternative suggestions/comments offered about how to be more confident or effectively treat patients" (P).

"Very interesting chat with students – they are really surprised that people do things so differently. The two-visit full dentures were a hit – student 10 was
quite critical that this was completely at odds with what they are taught but the others had an appreciation of the impact that this would have if the patient lives miles away. Very critical of some clinical techniques but led to a lively debate/discussion about what 'good dentistry' is and whose responsibility is it to maintain standards. This criticism could have been quite negative if we hadn't chatted about it but it's not the sort of thing that you can actually 'teach'. It's back to the experience thing and the need to be able to talk things through with others. Went on to CE and need to be able to look at your own work and do the best that you can do. Student 12 is really astute – others seem to learn from him and listen to him where it may be too confrontational if I drive the discussion. Upshot was that they had greater understanding of aims of Risk Management session and importance of professional responsibilities. If every group had a Student 12 then there wouldn't be the need for a facilitator!!

How do we find and share 12s!!

DJC September 2000

Of the private dental practitioners who supervised student observation and assisting, two strongly agreed, two agreed and one was unsure as to whether the presence of students was beneficial to their practice. One dentist commented that "the intellectual stimulation of discussing current topics with the students" was one of the best things about the placement. Others commented favourably on the professionalism and enthusiasm of the students.

The clinicians all agreed that the students were well prepared for the placement and that the supporting documentation was appropriate. The level of academic support was also felt to be appropriate. One clinician considered that the “aim of the exercise needs to be better defined”.

As a consequence of the RPP, several dentists indicated their willingness to employ a new graduate. One dentist informed the students that he "would employ any one of you tomorrow". During the planning stages of the RPP, the PDO in Dubbo had stated that
he would be reluctant to employ a dentist with no post-graduate experience. It was heartening to receive this comment from him at the end of the Program.

"As a result of the supervising dentists' exposure to the generally very high calibre of student ability, Macquarie Area Health Service will undertake to vary existing policy and create a position to accommodate the placement of junior dentists in late 2000/2001".

Staff p October 2000

Improvements to the RPP

On conclusion of the program, students and staff were asked to identify possible improvements to the RPP. Several students listed only one or two improvements thus yielding a total of 46 comments. These responses formed the basis for the questions asked at the de-briefing session held in Sydney.

Orientation Program

Five comments referred specifically to the orientation program at Broken Hill. Four students commented that they would have preferred a shorter orientation program to allow them more time for clinical work. One suggested that the orientation could be completed in Sydney prior to commencement of the RPP. A group discussion revealed that the majority of students would have preferred a longer, less intensive orientation program in Broken Hill. There were specific comments made to support the retention of existing content but two students suggested that a modified format would be preferable.

Several students in the first group expressed a desire to learn more about the Aboriginal communities and cross-cultural issues. The cross-cultural session planned for them had been disappointing in that the staff scheduled to facilitate the session arrived very late and “seemed totally bored with the whole thing” (Student 06).
"The AMS visit was not as beneficial as I had hoped – pretty hopeless really. The staff there did not seem to be interested in us and the presentation was quite difficult to follow. Maybe they just get fed up with talking to city slickers when they have their own work to be getting on with but you would think that they might see it as an opportunity to convert us".

Student 04 October 2000

Staff from the Department of Rural Health provided an excellent program for the second group of students. On completion of this session, one student made the recommendation that "I believe that it would be valuable to meet with Aboriginal people in a health care environment as well as in a social environment to facilitate greater understanding" (Student 23). The facilitator noted that the students were interested in the session and participated fully in the workshop activities. She commented that other allied health student groups were less enthusiastic about the cross-cultural session.

Clinical work

Nineteen comments indicated that students would have preferred more clinical experience during their placements. Of these, seven requested that students be allowed to undertake treatment in the Aboriginal Medical Service clinics and three requested extra sessions with the RFDS dentist. Three students commented that they felt that too much time was spent observing general dental practitioners and one student felt that they spent too much time observing in the rural town of Coonamble.

Comments ranged from, "observing at times may be slightly boring" (Student 19) to "more RFDS. Every day if possible. It was great" (Student 22) and "it would be more worthwhile if we had more opportunity to practice. There were too many sessions spent watching" (Student 09).
Rostering

The students generally appreciated the diversity of the program however one student commented that they would have liked a greater variety of dental experience. Of the 12 students who attended Broken Hill for the orientation and were then based in Dubbo, 4 would have appreciated the opportunity to visit the dental practices in Broken Hill before their departure. Two students would have liked to travel with the RFDS from Dubbo. As the Dubbo RFDS base was not completed this would obviously have been impossible however this was to be re-visited as the Dubbo RFDS service developed.

One student would have liked to visit Coonamble and one felt that they would have liked some time in Orange. Following a group discussion, it was agreed that students should take greater advantage of the ability to 'swap' sessions if mutually agreeable. The student must personally contact the course mentor and the clinician involved. One student provided a useful comment on this aspect of the placement that will be considered as the mandatory rural placements of the BDent curriculum are developed.

"Could students be rostered to a particular location for slightly longer period of time (eg Orange 2 weeks, Dubbo 2 weeks, Broken Hill 2 weeks)? The student may rotate their trips throughout the year so the 6 weeks total is spread out".

Student 12 October 2000

Social opportunities

Two students commented that they would have liked more recreational time and 1 requested more social functions. Three students would have liked to have transport made available to them to allow them to visit local sights and to do their shopping. A car was available at Broken Hill on Saturday mornings only and Macquarie AHS provided a car for those students based in Dubbo. Two students felt that larger student groups would be advantageous from a social perspective however both clinical facilities and accommodation within the Base Hospitals limited the group size.
Other comments

One student commented that she had had little exposure to general dental practitioners in the city so she was not too sure how practice in the country differed. As the RPP took place in September/October 2000, two students expressed concern at the timing in relation to end of year examinations.

Strengths of the RPP

All of the students felt very positive about the RPP and referred to their 'enjoyment' of the program. More specifically, students were asked to list "the three best things about the Program". A total of 72 items were listed. These responses are summarised in Table 8 below.

Table 8: Student perceptions of strengths of the RPP 2000

<table>
<thead>
<tr>
<th>Grouped themes</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiencing rural lifestyle</td>
<td>18</td>
</tr>
<tr>
<td>Range of locations/activities</td>
<td>14</td>
</tr>
<tr>
<td>Approachability of clinicians</td>
<td>13</td>
</tr>
<tr>
<td>Clinical experience with minimal supervision</td>
<td>9</td>
</tr>
<tr>
<td>Influenced future career direction</td>
<td>7</td>
</tr>
<tr>
<td>Organisation of the RPP</td>
<td>5</td>
</tr>
<tr>
<td>Opportunity to fly with RFDS</td>
<td>3</td>
</tr>
<tr>
<td>Opportunity to observe trauma</td>
<td>2</td>
</tr>
<tr>
<td>Balance between work and recreational time</td>
<td>1</td>
</tr>
<tr>
<td>Opportunity to meet dental therapists</td>
<td>1</td>
</tr>
<tr>
<td>Spending time with friends</td>
<td>1</td>
</tr>
<tr>
<td>Provision of financial support</td>
<td>1</td>
</tr>
<tr>
<td>Learning without worrying about being assessed</td>
<td>1</td>
</tr>
<tr>
<td>Risk management session</td>
<td>1</td>
</tr>
<tr>
<td>Got to ride a horse!</td>
<td>1</td>
</tr>
</tbody>
</table>
Reporting on the RPP was based on fulfilling stakeholder requirements and encouraging continued collaboration with the project. In addition, the report was distributed to all students and staff to ensure its accuracy and the validity of the findings. Comments and input were requested from the recipients of the report.

Co-researcher input

As previously described, all staff and students participating in the RPP were included as co-researchers in the project. A comprehensive report was distributed to all students and staff involved with the RPP with comments invited. No comments were received. As the report was lengthy, it was assumed that the co-researchers had found it too onerous a task and an Executive Summary with formal rationalised recommendations was re-distributed to all co-researchers.

In the absence of written input, it was decided that all staff would be contacted for their opinions. There was unanimous agreement with the summary document and there was overwhelming support for continuation of the RPP. A request was made for students to attend a RPP discussion session in December 2000. As 20 of the students had
graduated by this time, it was impossible to coordinate the session although the four students who had just completed year 4 agreed to meet to discuss the RPP. Of these, two students attended the discussion session. These students agreed with the findings of the report but commented that the career interest score analysis did not reflect their perceptions of the program. We discussed methods for obtaining more accurate information and one student commented that she was aware of at least three students who had accepted rural positions as a consequence of their involvement with the RPP. She suggested that while the career interest scores gave a short-term indication of impact, investigation of future career direction might provide valuable additional information. The second student agreed with that suggestion and also noted that the information provided by the report had led to a written report to MIRAGE (see Chapter 6) with recommendations for enhancing contribution from dental students. She believed that the ability to work together for mutual gain had been a key element of her involvement. She also noted that the lack of response from the new graduates was understandable and was not to be construed as a lack of interest.

INPUT FROM STAKEHOLDERS

Faculty of Dentistry
The final RPP report was distributed via the Dean to the Curriculum Committee who accepted the report and its findings. The concept of a mandatory RPP for BDent students was discussed and agreed in principle. The Faculty demonstrated its commitment to the project by supporting an academic position for the further development of the RPP. It was decided that the RPP should continue in 2001 with a view to expanding the number of clinical sites involved.
University Department of Rural Health

The UDRH maintained its commitment to the RPP through co-funding of an academic position. The RPP report was used as a basis for reporting within the College of Health Sciences at the University of Sydney and as a result of this, the Faculty of Pharmacy adopted the RPP format for its students from 2001. The RPP was also reported during University strategic planning as an example of a positive, collaborative, multi-disciplinary initiative. The need for sustainability of the project was of interest to the UDRH and the need to develop a readily transferable protocol was facilitated through the involvement with the Faculty of Pharmacy.

Oral Health Branch of NSW Health (OHB)

The Chief Dental Officer acknowledged the success of the RPP and pledged continuing support for the project. The need for ongoing and long-term evaluation was considered a priority. The OHB also requested a more effective method of service provision analysis and proposed that the new Information System for Oral Health (ISOH) system be used in the future. Commitment and support were guaranteed although there were no funding opportunities for the RPP at that time.

ADA NSW

In addition to the final report, an article was published in the ADANSW Newsletter1 to inform the membership of the RPP. As a consequence of this article, several dentists contacted the Branch to ask how they could become involved with the RPP. The ADA NSW acknowledged the success of the RPP through internal publications and responded positively to a request for continued support. ADA NSW personnel reported that they had no hesitation in continuing their support for the project, specifically through further development of the Risk Management session. Co-sponsors, Guild Insurance and Financial Services (GIFS), reported their enthusiasm for the Risk Management session and the likely favourable impact that this would have on new graduate practice.

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1 Australian Dental Association New South Wales Branch Newsletter January 2001
Dental Board

The Dental Board received the RPP report and an accompanying letter requesting continued support. In advance of inclusion of additional clinical centres, the Board required criteria for selection of community dental clinics by the Faculty.

Additional reports

Following widespread distribution of the report, a series of requests for presentations and articles were received. Numerous local newspaper articles and presentations to various professional interest groups and allied health associations eventuated.

Discussions with various staff resulted in the identification of future research needs and the Dental Board of NSW awarded a grant to investigate the perceptions of University of Sydney dental graduates to rural and remote dental practice. Several staff lamented the fact that continuing education opportunities were generally limited to major metropolitan centres. As a consequence of their input to the RPP, the Faculty of Dentistry Department of Continuing Education provided a “Rural Update” at Dubbo Plains Zoo Conference Centre early in 2001. This program, with internationally recognised speakers, was an unqualified success and this initiative continues to date. It provides an example of the mutual gain offered through staff involvement in the RPP.

As an additional consequence of reporting, students who had been participants in RPP 2000 formed an electronic discussion group, moderated by the RPP coordinator. The moderator received details of numerous rural job opportunities. These were forwarded to the discussion group. Students were assisted in establishing informal and formal contact with interested practitioners and were directed to professional support networks. The discussion group also allowed further investigation into the effects of the RPP.
Graduate employment of RPP students

As e-mail contact was ongoing, students who had participated in the RPP informed the coordinator of their employment details in February 2001. This information was used to provide an additional report to the stakeholders in March 2001. All 20 of the final year participants graduated from the Faculty of Dentistry in December 2000. The four fourth year students progressed to the final year of studies. The following analysis therefore relates to those 20 students who graduated in 2000.

Five students (25%) elected to work as Dental Officers in one of the two dental teaching hospitals in Sydney. Six students (30%) were working in private practice in metropolitan areas (three of these were working on a part-time basis only) and one student (5%) had moved to the UK. The remaining eight students (40%) were working in Moderately Accessible (MA) and Remote areas (R), seven in NSW and one interstate. Five of the eight students working in rural areas stated that they would not have considered such a career move if they had not been involved in the RPP. The other three students considered that the RPP had validated their intent to practice in rural areas.

A review of the questionnaires completed by the eight graduates working in MA and R areas, demonstrated that the latter two students indicated pre- and post-placement career interest scores of 10 and 9. Of the other six students, three had indicated increased interest scores after the RPP (4 to 7, 5 to 8, and 8 to 9), two had indicated a decreased career interest score (8 to 6 and 9 to 8) and one had maintained a career interest level of 9. Of the eight students who had indicated a career interest score of 8 or more after the RPP, six (75%) were working in rural areas. Of the 10 who had indicated a pre-RPP career interest score of 8 or more, six (60%) were working in rural areas. 40% of the RPP 2000 cohort was therefore working in rural areas and it appeared that in this small group a post-RPP career interest rating of 8 or higher was a stronger predictor for future rural practice than a pre-RPP career interest rating of 8 or higher. This is considered further in chapter 11.
CHAPTER 8

RURAL PLACEMENT PROGRAM 2001

Using the information obtained from RPP 2000 and documented in Chapter 7, plans for RPP 2001 commenced early in the year. A third Area Health Service expressed a desire to become formally involved with the RPP and as a consequence, links were established with Mid Western Area Health Service.
As the aims of the RPP were achieved in 2000, plans for 2001 focused on refinement of both the structure of the program and the research methods employed. Amendments to the structure of the RPP are detailed later in this Chapter and these included minor modifications to both the orientation program and clinical placements. It was apparent that the research methods employed during RPP 2000 required modification and details of such modifications are described within the ‘Research’ section of this Chapter.

In conjunction with the RPP, opportunities for further research were identified and the Commonwealth Department of Health and Aged Care supported a study of the rural dental workforce through its Rural Health Service Education and Training (RHSET) program. The findings of the project⁶ led to further refinement of the RPP and informed broader strategic planning for the rural dental workforce.

RPP STRUCTURE

⁶ Copy of the Rural Health Service Education and Training report are available from Deborah J Cockrell, Faculty of Dentistry, University of Sydney
With the introduction of a third clinical placement based at Orange, the opportunities for each student were enhanced. The experiential framework was maintained and local mentors submitted a range of clinical opportunities that could be made available during the RPP 2001. Additional experiences were identified including various outreach opportunities; the introduction of specialist practice visits and enhanced opportunities to work with oral health team members such as prosthetists and dental therapists.

As the mentor at Broken Hill had subsequently relocated, there was an immediate need to identify and recruit a new mentor. An individual was identified as a consequence of their involvement in RPP 2000 and was willing to accept this responsibility. The mentor at Orange had also been involved with RPP 2000 and had expressed a desire for further involvement. These mentors were familiar with the philosophy and practicalities of the RPP and had contributed as co-researchers in 2000. Staff development was provided on a 1:1 basis and academic support continued throughout 2001. The mentor at Dubbo had acted in this role in 2000 and was supported as required.

The RPP was scheduled to take place during the mid-Semester break in June/July 2001. In consultation, it was decided to again offer 24 student places with 12 students attending each of the two planned RPPs. On each occasion 12 students would attend the Orientation Program at Broken Hill with 4 students then attending each clinical placement based at Broken Hill, Dubbo and Orange. It was anticipated that this would maintain the peer supported introduction to rural NSW but would allow increased clinical opportunities for each student in the three locations.

The earlier onset of planning allowed excellent student accommodation to be booked at each clinical placement location. ADA NSW resolved to continue its support both for travel bursaries and the Risk Management session and the Dental Board of NSW accredited the community dental clinic at Orange for student placements. A formal Memorandum of Understanding (MOU) was established with Mid Western Area Health Service (AHS), the existing MOU with Far West and Macquarie AHS being valid until 2005.
The local mentors recruited support from colleagues to develop a wide range of social opportunities. Local practitioners also developed additional learning opportunities for the students. These included rescheduling of local study group meetings, clinical seminars and tutorials to include students.

Pre-placement briefings

2001 provided an opportunity to review the pre-placement briefing session. In 2000, this session was used to introduce myself as the RPP coordinator, provide practical details of the program and introduce the student-centred elements of the reflective curriculum. As planning in 2001 commenced earlier in the year, there was an opportunity to introduce myself during the Year 5 general orientation in February. A short presentation was made to all of the students and a written overview of the RPP was provided. Students were encouraged to talk with me at any time during that day and 43 of the 56 enrolled students availed themselves of the opportunity. Application forms were distributed electronically through the University administrator and any interested students were encouraged to submit their email addresses to me. An electronic forum was therefore established prior to the RPP. Students were able to post group or individually directed messages and comments.

This forum was subsequently used to inform students of the practical details of the RPP. A total of 39 students registered their interest and received copies of handbooks and draft rosters. Six students indicated that they would not be able to participate due to other vacation commitments. Of the remaining 33 students, 24 were selected to attend the RPP 2001. This selection was made as a consequence of contribution to the forum and submission of a statement outlining why they wished to attend the RPP. Previous familiarity with rural areas was also considered in the final selection. Over a period of weeks, and as other vacation opportunities became available, some students chose to withdraw and as a consequence, only one student who had wished to attend was not accommodated. While this was ultimately a favourable outcome, the constantly changing student pool was a great frustration and required considerable additional work.
Students were encouraged to post a list of motivating factors for their participation in the RPP in order that the planned orientation program could be tailored to their group needs. The motivating factors were very similar to those described by RPP 2000 participants and are summarised in Table 9. The planned structure of both the orientation program and clinical attachments were in alignment with these motivating factors.

Table 9: Motivating factors for students attending RPP 2001

<table>
<thead>
<tr>
<th>Motivation to attend RPP 2001</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>To experience rural lifestyle</td>
<td>22</td>
</tr>
<tr>
<td>To learn about dentistry in a different environment</td>
<td>22</td>
</tr>
<tr>
<td>To assist in career decision-making</td>
<td>12</td>
</tr>
<tr>
<td>To have a new life experience</td>
<td>12</td>
</tr>
<tr>
<td>To have a holiday</td>
<td>5</td>
</tr>
<tr>
<td>To meet new people</td>
<td>12</td>
</tr>
<tr>
<td>To learn about dental health issues in the country</td>
<td>5</td>
</tr>
<tr>
<td>To get more clinical experience</td>
<td>4</td>
</tr>
</tbody>
</table>

The electronic forum also allowed the introduction of the various educational elements of the RPP. Through a series of rhetorical questions, students were challenged to think about prior learning experiences, learning outcomes and self-assessment. It was anticipated that students would complete the pre-placement questionnaire through this forum although only two students chose to do so. The pre-placement briefing in Sydney therefore commenced with the students completing a pre-placement questionnaire, based on that used in 2000.

Through email communications, all of the students were aware that the briefing session would culminate in the determination of individual learning outcomes for the RPP and that these would be used to determine a formal learning contract for the RPP. They
were also aware that they would need to have this learning contract negotiated by the end of the orientation program.

Mindful of the difficulties encountered during the development of self-assessment strategies in 2000, guidelines for self-assessment were compiled and distributed in advance of the briefing session. Students were encouraged to consider and document draft criteria that would result in them either ‘passing’ or ‘failing’ the RPP.

During the pre-placement briefing, students worked in groups of four according to their rural placement venues. With the overall aims of sharing learning and promoting reflection, students were provided with structured opportunities to develop their learning outcomes and to refine these to form learning contracts. Each group then shared suggested learning contracts with the other student groups resulting in modifications and amendments to the contracts. The students had an appreciation of the opportunities for shared learning and suggested that all of the contracts could be distributed to all students on completion of the RPP. They also considered that insight into the learning contracts from RPP 2000 would have provided a valuable starting point for their own contracts. In conjunction with the learning contracts, the need for ongoing reflection was introduced and students were asked to develop possible methods for reflecting on the RPP. Diaries and journals were identified as being appropriate methods. During lively discussion, several students agreed that while this was a valuable exercise, the need for them to write something every day might result in trite, “mindless” comments purely written to fulfil the program requirements.

There was a small group of male students who considered that documenting reflections was “pointless”. The overwhelming opinion was that the program would inevitably lead to learning and that sharing the experience with others would enhance learning. The group recommendations from this initial element of the briefing session were that learning contracts would provide documented evidence of learning against which they could be assessed and that diaries would help them to fulfil their contracts but that this element should be left to the individual. During lunch and prior to the second section of the briefing, three students who represented the three different opinions on
journaling were briefly interviewed in private. The following excerpts taken from field notes reflect the opinions of these students and are in alignment with the literature in this area (please see Chapter 3).

DJC: You think that diaries are a good idea?

11: Yes but I don't think that everyone likes writing things down. It's something I've always done and it helps me to work things through for myself.

DJC: So do you think everyone should do this?

11: Absolutely. If you write notes on a daily basis it becomes part of a routine and it's good to go back and see how far you have come.

DJC: Should I be able to see what you write?

11: Mostly! Maybe we could write what we think at the end rather than giving in diaries. That way we have to keep them but we can only let you see what we want.

DJC: You have some reservations about diaries?

04: They are a good idea but I think that if we have to write something every day then we will end up writing about what we had for lunch and that sort of thing. There's not always things to write about.

DJC: Do you think everyone should write a diary during the RPP?

04: No because not everyone will. If you make people do it then how will you know that they have unless you read them all and then there's not much point because its written for you and most people will write what you want to read.

DJC: So I shouldn't be able to see what you write?

04: Depends what its for really. If it's for you to learn from us then I guess you could read it but it wouldn't really tell you what we have learned other than what we want you to think that we have learned!

DJC: You don't like the idea of diaries?

05: Not really – it's a girl thing. Well I suppose it depends what we are supposed to write in it.

DJC: Isn't that up to you?

05: No – its what you tell us we need to write

DJC: So if I said you could write anything what would you write?
Nothing probably. I might write about the treatment I had done I suppose. If you told me I had to write other stuff to pass then I would do it but I can't see the point myself.

Interview with Students 14, 08 and 04 – June 2001

In accordance with student-centred learning theory (refer Chapter 3), the use of diaries is an example of how the RPP content is negotiable. All of the students had an appreciation of the need to have some form of learning structure but considered that the exact nature of this should be left to the individual. This was particularly emphasised in the second session that introduced assessment for the RPP.

In the distributed self-assessment documentation and in the preamble, the rationale for assessment of the RPP was outlined. As the students would be under the direct supervision and guidance of a range of practitioners, the need for a realistic approach to assessment was discussed. There was an appreciation of the role of self-assessment in this context although many students considered that the RPP should not be assessed as it was not a degree requirement. In light of the proposal to include a mandatory rural element to the new curriculum, students agreed that self-assessment was likely to be the most sensible solution. Small group discussion led to other suggestions from the students. These included a group assessment that included assessments by peers, assessment by clinicians and assessment by the program coordinator. Each option was discussed at length and students agreed that a group assessment would be difficult to administer and may be considered unreliable. Students initially considered that assessment by clinicians was an important component but they referred to the lack of objectivity in clinical assessment that they had previously experienced. They agreed that determination of criteria for assessment would be essential if there were multiple assessors.

Many students agreed with one student who noted that assessment of clinical skills didn’t actually help with learning but was useful for benchmarking purposes and academic progression. This student indicated that she would learn more if she were able to ask questions and request support, without the fear that this would have a
negative influence on her assessment. There were also concerns that about the amalgamation of such assessments. An example was given of a bad clinical session with one tutor against several good sessions with a second tutor and the apportioning of input from the two tutors. It was concluded that self-assessment provided an opportunity for more valid assessment but that it was important to set out personal guidelines for this assessment. It was agreed that a 'pass' or 'fail' assessment be used.

In determining the criteria for this self-assessment, students ranged through numerous areas. These ranged from largely generic attributes such as communication skills and enthusiasm, to very specific clinical skills such as restoration margins and quality of root canal treatments. Using a whiteboard display of all of the suggested assessment areas, students worked individually to determine the areas in which they would assess their RPP involvement with no imposed restriction in the number of areas for assessment. The students worked in groups to develop criteria for self-assessment in each of these areas. The result was a draft self-assessment form for each student. Comparison of randomly selected self-assessment forms led to further discussions. Again, the time taken to reach this stage of development was under-estimated and at the end of the pre-placement briefing it was agreed that the students would develop these further before the RPP began. The students were encouraged to submit their final learning contracts and self-assessment forms to me electronically. While there were multiple email exchanges over the following three weeks, only two students submitted these items prior to the RPP.

It was interesting to note that the electronic forum allayed practical anxieties about the RPP and established communication between the group and myself, but did not facilitate student input to the development of the educational elements of the program. Despite there being fewer program elements to be negotiated during the briefing, the level of discussion exceeded that of 2000 and resulted in failure to complete the pre-determined tasks. The willingness of students to participate in the learning activities was heartening and may have been attributed to the establishment of stronger communication links before the session.
Program structure

Mindful of the findings from RPP 2000, minor modifications were made to the RPP structure for 2001.

Orientation Program

The RPP 2000 students had suggested that the orientation in Broken Hill could be less intensive and last longer. As there were no flights to Broken Hill on Saturdays, it was impossible to extend the orientation without reducing the amount of clinical time available. Because the students had indicated that they would like more clinical time, lengthening of the orientation program was not feasible. The content of the orientation program was therefore modified to provide the students with more opportunity to visit areas around Broken Hill. The orientation commenced on a Sunday with an, ‘Area in Context’ session as described in Chapter 7. The Risk Management session supported by the ADA NSW was held on Monday morning with the RFDS session condensed to two hours. The students’ desire for more formal and structured cross-cultural education resulted in this element being expanded and delivered by the staff of the UDRH on Tuesday morning. The learning session previously conducted on Tuesday afternoon was held on a one to one and ad hoc basis over these two days allowing ample time for sight-seeing and enjoyment of the town and its surrounds.

In collaboration with the local mentors, free time was included in the rosters so that students were able to experience rural lifestyle. Weekend trips and transport were made available wherever possible and local practitioners lavished hospitality on the students.

On completion of the orientation program, all learning contracts and self-assessment forms were finalised although this necessitated some unorthodox meetings. The need for these elements to be completed in advance of the RPP was acknowledged.
Clinical placements

The introduction of a third clinical placement with a consequent reduction of student numbers from six to four in each location, provided additional opportunities for clinical work. In response to student comments observation sessions in general practice were reduced to half-day sessions. As there is only one Royal Flying Doctor Services (RFDS) dentist, it was impossible to increase experience in this area. Dentists working in the Aboriginal Medical Services (AMS) clinics in Dubbo and Broken Hill provided clinical supervision for students to work in these areas. Students were required to complete a log of experience and submit this on completion of the RPP.

Rostering

In response to comments from RPP 2000 students, prior to their departure to clinical placements, students were able to visit the various dental facilities in Broken Hill on the Wednesday morning. Students were also encouraged to exchange sessions with student colleagues with the caveat that all students should attend the same number of clinical treatment sessions. None of the students chose to change their roster. While a lengthier placement is worthy of further consideration, the BDS curriculum structure dictated that the RPP took place during vacation time. In order to accommodate the maximum number of students, longer placements were not feasible.

Learning requirements

As has been discussed, the learning requirements were modified as a result of the experience of RPP 2000 and the pre-placement briefing. The requirement to maintain a Learning Journal and the peer assessment strategy were removed. It was therefore agreed that on completion of the RPP, students would have completed;

- their learning contract,
- a self-assessment, and
- a log of clinical experience.

These were submitted on the final morning of the RPP after the ‘de-brief’ session facilitated by the local mentor.
Post-placement briefing

The post-placement briefing was held in Sydney within one month of completion of the RPP. Twenty one of the 24 students from the RPP attended this session. All 24 students submitted the required learning elements and completed a post-placement questionnaire.

Interestingly, four fourth year students attended the session and indicated a strong desire to participate in RPP 2002. These students joined the electronic forum established to support the RPP 2001 students. This forum was used to distribute employment details and support the students during the transition from university to practice. Several students accepted employment opportunities provided through the forum and many maintain contact to date.

Staff development

The need to recruit two new mentors required site visits for one to one staff development. The RPP mentors accepted their role in staff development for local practitioners involved in the project and organised a series of workshops. As RPP coordinator, I attended these sessions as determined by the local mentors. All clinical staff supporting the RPP were invited to submit CVs to the Faculty for honorary academic appointments.

RPP documentation provided by the coordinator was supplemented with local information. Using the information provided by the mentors, draft rosters were compiled by the coordinator early in 2001. These were distributed to the mentors and after amendment, to all staff and students involved in the RPP. As mentioned, there were no changes made by students.

STAKEHOLDERS

As a consequence of reporting from RPP 2000, all stakeholders maintained their support for the RPP.
Faculty of Dentistry

Until 2001, the appointment of a Senior Lecturer in Rural Dentistry had been on a 0.2 FTE basis, funded by the UDRH. In 2001, the Faculty demonstrated its commitment to the RPP by creating a joint academic appointment between the Faculty and the UDRH on a 0.4 FTE basis. The final report on RPP 2000 was accepted and endorsed by the Faculty’s Curriculum Committee.

UDRH

The establishment of a jointly funded academic position allowed the UDRH to further develop its multi-disciplinary curricula. As mentioned, the RPP provided a model for the Faculty of Pharmacy. The outcomes of this collaboration in rural education were presented, and received an award, at the College of Health Sciences Educational Conference. The academic position helped to emphasise the importance of including oral health care in a primary health care context and I was able to develop an oral health elective for the Primary Health Care curriculum offered to remote indigenous healthcare workers.

Oral Health Branch of NSW Health (OHB)

The OHB supported the expansion of the RPP into the Mid Western AHS and reiterated its desire for a long-term evaluation of the program. The OHB was not able to provide direct funding for the RPP however through the AHS, funds were provided for local accommodation. Support from local public sector dentists was assured.

ADA NSW

ADA NSW agreed to increase the value of the travel bursaries in line with increased travel costs and, in conjunction with Guild Insurance and Financial Services (GIFS), provided $14,000 to this end. Personnel involved with the Risk Management session collaborated with the RPP coordinator to refine the teaching materials for the session and as in 2000, attended both orientation programs in Broken Hill. As recommended by the ADA NSW, the coordinator gave several presentations to dental and health profession groups with great success.
Dental Board of NSW

The Dental Board of NSW accredited the community dental clinic at Orange for student placements in 2001. The RPP coordinator developed criteria for clinic accreditation and the Board approved these in 2001.

RESEARCH CYCLE 2

Research questions

The success of the RPP against its intended aims was described in Chapter 7. As planning for the RPP 2001 commenced, it was essential to consider the research methods employed in 2000 in order to refine these for 2001. With reference to the original establishment of a thematic concern (see Phase 1) and with the benefit of the findings from RPP 2000, a reflective table was constructed to guide further research. Using motivation for involvement with the RPP as a basis for reflection, the thematic table was restructured to provide a list of research questions relating to the RPP (Appendix 2). The list was distributed to the RPP staff and used as a basis for discussion with the stakeholders in advance of research development for 2001. The
refined list was then grouped and tabulated as can be seen in Appendix 3. This summary formed the basis for development of appropriate research methods for 2001.

Research methods

Appendix 3 demonstrates the various research questions and lists appropriate strategies to investigate each. It was apparent that multiple methods were required however the emphasis on reflective statements for both research and learning was reduced. It was anticipated that other research methods could provide the required data and that removing the requirement for reflective statements would result in a more manageable student workload.

Pre and post placement questionnaires

The questionnaires used in 2000 were used again in 2001 with an additional question, “Would you recommend rural dental practice to a colleague?” with possible responses of “yes”, “no” and “not sure”.

Log books

Students were required to maintain a log of experience as in 2000. As the students reported that “observation” and “assisting” cases were too numerous to mention, in 2001 only cases in which the student provided the treatment were recorded. In addition, the Information System for Oral Health (ISOH) patient record system was used to substantiate the student log books.

Interviews with students

As RPP coordinator I was fortunate to be able to spend considerable time with every student participant both formally and socially. One of the most valuable ways of gaining insight into student perceptions was through informal conversation. All students were freely communicative and willing to speak frankly about their experiences during the RPP.
Interviews with staff

The mentor at each clinic was interviewed within two months of completion of the RPP. The outcomes of these discussions informed future directions and plans for the RPP 2002. The mentors supplemented the interviews with written reports and details of these can be found later in this chapter.

Discussions with stakeholders

The evaluation report from 2000 was used as the basis for reporting as described in Chapter 7. As a consequence of this and as requested by the stakeholders, additional meetings were held. The major area of interest for all stakeholders was the impact that the RPP had on the rural dental workforce. During discussions with the stakeholders it was agreed that the program was unlikely to have a distinguishable impact upon the existing workforce but that indeed data on the current workforce was not available for making a comparison. With the support from these stakeholders, a successful application was made for funding to support a workforce project, copies of which are available from the author.

It was therefore deemed appropriate for this project to study the influence that the RPP had on the student participants and that this would be achieved by reviewing the career choices made on graduation.
As the RPP in 2000 had been constructed in alignment with experiential learning theory, there was no perceived requirement to change the program structure. Minor amendments were made to the orientation component of the program as already described. The importance of reflection in and after learning was discussed and emphasised during the pre-placement briefing however the formal need to document this reflection through reflective statements was not required in 2001. It was anticipated that removal of this component with the focus on learning contracts maintained in 2001, would provide scope for future research. It was therefore tentatively planned that the learning components for RPP 2001-2003 would be as follows:

RPP 2001  Learning contracts / self-assessment
RPP 2002  Reflective statements / self-assessment
RPP 2003  To be decided based upon findings from 2001 and 2002 and to form final research trial prior to implementation of mandatory RPP.
Awareness of oral health issues

Before the placement, twelve (50%) students were able to identify more than two oral health issues affecting rural communities. On completion of the RPP twenty one (87%) students were able to identify more than two dental health issues affecting rural communities. The total number of comments increased from 62 to 78, thus suggesting that there was a greater awareness of oral health issues after the RPP. Table 10 summarises the perceived oral health issues as indicated by all respondents before and after the RPP.

Table 10: Perceived rural dental health issues before and after RPP 2001

<table>
<thead>
<tr>
<th></th>
<th>Number of comments before RPP</th>
<th>Ranking before RPP</th>
<th>Number of comments after RPP</th>
<th>Ranking after RPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate manpower</td>
<td>16</td>
<td>1</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>Geographical isolation</td>
<td>16</td>
<td>1</td>
<td>22</td>
<td>1</td>
</tr>
<tr>
<td>Limited dental awareness</td>
<td>14</td>
<td>3</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>Lack of Specialist support</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Inability to pay for treatment due to low income</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Ageing population</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>Not mentioned</td>
</tr>
<tr>
<td>Lower dental health priority</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Lack of fluoridation</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Lack of public sector funding</td>
<td>1</td>
<td></td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Aboriginal health needs</td>
<td>0</td>
<td></td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>
The RPP increased awareness of Aboriginal Health needs (not mentioned before RPP and ranked 6th after RPP) and lack of public sector funding (not mentioned before RPP and ranked 5th after RPP). It also appeared that the RPP dispelled concerns about the ability of rural residents to pay for treatment (ranked 5th before and not mentioned after RPP) and the perception of an ageing population (ranked 6th before and not mentioned after RPP). It was also interesting to note that two of the issues identified by students in 2000, perceived increased caries rate and decreased oral health promotion, were not mentioned either before or after the program by the participants in 2001. This observation would suggest that the perceptions before and the experiences during the RPP are unique thus validating the need for a student-centred program with individual structure and outcomes.

**Learning outcomes and learning contracts**

As described earlier in this chapter, the pre-placement briefing session resulted in the definition of learning contracts for the RPP. As has been noted, the need for students to have ownership in the RPP and to determine their own learning objectives resulted in an eclectic mix of contracts. Although considerable time was devoted to the development of a clear, concise contract, it was apparent that several students still required additional support to finalise their contracts. It was agreed that the submitted contracts would be accepted with the caveat that the self-assessment strategy would have to include an assessment of the initial contract itself.

On conclusion of the RPP, all twenty four students submitted completed learning contracts and all of the students fulfilled the contracts, despite the acknowledgment that the Faculty did not formally require this for assessment purposes. It might be reasonably concluded that the students’ willingness to participate fully with both the learning contracts and self-assessment represented an appreciation of the value of these elements. It was also clear however that the students had a strong desire to support me in my endeavours to develop protocols for a program protocol for future mandatory placements. They had embraced their roles as co-researchers in the project. It was of great personal reward to work with student colleagues in this collegiate manner. The
opportunity to spend time with the students outside the traditional learning
environment provided considerable insight into personal motivations, aims and
frustrations. The students also appreciated the opportunity to air their opinions in a less
formal environment and many made insightful comments on their education to that
time.

"We could all see what you were trying to achieve through this although I must
admit that we all get a bit fed up with being guinea pigs for the new students
(with reference to the students of the new curriculum). It was obvious that what
you were suggesting had value to us but just as important was the way that you
explained this to us. To be honest, a few (students) weren't going to bother but
we nagged them to do it all so that you had the information that you needed. It
was a lot in the holidays though - maybe when the other students have to do it
then it will be seen as less of a chore. It was actually good fun to work out what
to do rather than being told what to do but on the other hand, I think that we
would have learned stacks whether or not we had to do learning contracts or
self-assessment."

Student 08 November 2001

Mindful of my observation in 2000, that individual discussion on learning contracts
and self-assessment would be of benefit to the students, I attempted to discuss these
elements with individual students in Sydney. It was agreed that individual meetings
would be scheduled around the planned post-placement session to ensure my
availability. As a non-metropolitan resident I scheduled a two-day visit to Sydney to
undertake these meetings and I emailed the group to this effect. As it transpired, only
four students were able to attend the meetings because of various non-negotiable
curriculum requirements. I therefore decided to correspond with each student via email
and maintain the group de-briefing. This session was well attended and there was
general agreement with the planned method of email communication. The students
unanimously agreed that the RPP had been of great personal and professional benefit
and one of the "highlights" of their dental education.
Although this de-briefing session was successful, there was little use of email for information exchange. One student wrote to say that now they had returned to "normality" it was difficult for them to find time to look at the RPP learning again. He stated that most students had now "moved on". This frank observation, although disappointing, was perhaps predictable. The final year curriculum is rigidly scheduled and students have a series of summative assessments that understandably preoccupy them. It had been anticipated that the RPP would provide an opportunity for students to develop reflective skills that had an impact upon their future learning. It was clear however that the need to fulfil curriculum requirements was the priority. These observations would suggest that the students considered the RPP to be a separate clinical opportunity and while there was a commitment to the learning contacts during the placements, it was not transferred to their continued learning. The documented aim of the RPP was to provide a student-centred learning opportunity although an underlying aim was to maintain that learning. By focusing on an individual learning contract, it would seem that the students considered the program to be finite and bounded rather than encouraging transferable learning skills. The comments made by student 18 in RPP 2000 in her reflective statement were in alignment with this observation perhaps suggesting that the use of reflective statements, as in 2000, may be of greater benefit in ongoing learning from the RPP experience.

**Self-assessment strategies and outcomes**

As previously described, students identified areas for self-assessment during the RPP and defined ‘pass’ and ‘fail’ grades for the program. While there was agreement that self-assessment was an appropriate strategy, it was disappointing that only fourteen of the twenty four students completed their self-developed assessment forms. The development of self-assessment strategies required considerably longer than had been anticipated at the pre-placement briefing and there was poor compliance with requests for email follow-up. As a consequence, only fifteen (62%) of the self-assessment forms were fully developed at the beginning of the RPP. Of these, only fourteen were completed at the end of the program. All of these students awarded themselves a ‘pass’
grade. This was a considerably lower participation rate than in 2000 when twenty one students (87%) submitted self-assessments.

In 2000, each student was supported in the development of self-assessment on a one to one basis. In 2001 however, the orientation program was modified in response to student feedback; such individual support could not be provided. It is assumed that the lack of apparent prioritisation of self-assessment during orientation had an adverse effect on students’ perceptions and therefore compliance. The lack of previous exposure to criterion referenced, self-assessment meant that students were presented with a new concept during the pre-placement briefing. The expectation that they would complete the assessment forms with individual assistance via e-mail was unrealistic. There was very limited participation in pre-RPP development after the initial briefing session. In an attempt to reconcile the students’ experiential needs with the defined educational elements, the latter was under-supported with a consequent detrimental impact on participation.

"Need to work out whether to a) continue with contracts and self-assessment and if so, allocate enough time to developing them (NB in 2004, students will know about these anyway so I have to make recommendations for both BDS and BDent RPPs) or b) abandon contracts and self-assessment and just have reflective statements. Think that reflective statements may be better for ongoing learning and integrating RPP with rest of curriculum but are they enough for faculty assessment of the RPP? Come to that, does the RPP have to be assessed as a stand alone element??"

DJC January 2002

ADA NSW Risk Management session

Based upon the recommendations from 2000 and additional student feedback, Risk Management sessions were planned for Monday 25th June and Monday 9th July as a component of the RPP 2001. In response to the plea by last years’ students for additional cases, all students worked through each of three separate cases.
time constraints, the cases selected were less complex and required less additional information. The cases and student guides were distributed in advance of the Risk Management Sessions.

All students were asked to complete a short open and closed response questionnaire at the end of each session. Twenty two students responded (92%) and the results of this evaluation follow and are summarised in Figure 5.

**Figure 5: Evaluation of Risk Management session 2001 (n=22)**

![Bar chart showing evaluation results.

One student noted that the session helped them to learn as it was, “very practical and applicable to everyday practice – a lot of what we were taught in ethics was much more theoretical – cases provided very practical application”. Another stated that “The best thing was the group discussion on the case studies – really helped consolidate what we know”. In 2000, only four students strongly agreed that they had a clear understanding of the learning objectives for the session. The improvement in understanding may have been due to the clinical cases and course documentation having been distributed in advance.

With regard to the case-based learning component of the session, eighteen students strongly agreed that the cases provided useful learning experiences with three agreeing that the cases were useful. This compares with ten and fourteen students respectively
in 2000. The increased number of cases and the consequent amendments to case content may have contributed to the perceived increase in usefulness.

When asked to comment on aspects of the session that particularly enhanced learning, twenty of the twenty two students felt that the use of case-based learning in the form of real-life cases was of particular value. Sample comments in this regard were: "the use of real-life cases really demonstrated the importance of very basic issues such as communication and record-keeping", "it was excellent to look at past cases and their outcomes and see what other people do" and "Cases were great as they provided real-life practical situations and made me think".

Ten students commented on the approachability of, and support from, the facilitators as being important in their learning. "Having excellent facilitators to explain the cases and how the particular dentists could have avoided the problems was particularly useful", "Excellent facilitators with priceless advice based upon experience" and "The one on one, informal interaction with (the facilitators) was fantastic. It created an environment conducive of learning, in that we weren't afraid to ask questions about the things we were learning and that they were very interesting".

The students were also asked to list any improvements that may be made to the session. Four students made suggestions and of these, two would have liked to consider more cases. Whilst additional cases would undoubtedly be beneficial, the session time would have to be increased proportionately in an already heavily timetabled orientation program. One student would have liked a longer session in order that more time could be given to each case and one felt that there should be a mid-session break. Three students felt that the session should be offered to all students and suggested that there be a one-day Risk Management Seminar in Sydney.

The absence of suggestions for improvement by 82% of the participants possibly suggests satisfaction with the program. In 2000, two students would have preferred to receive the case material in advance of the session in order that they would have had longer to think about the issues involved. This request was complied with and there
was no similar student comment made in 2001. In response to the request from two students in 2000 that there should be more time at the end of the session for questions, half an hour was allocated for this purpose in 2001. In 2001 each case was discussed independent of location with rurality considered as an additional variable at the end of the case. This format worked well and there was no further feedback on this topic.

As evidenced by the student feedback, these sessions were seen to be highly relevant to both degree program and future career. The cases were perceived as providing useful learning experiences and this perception was an improvement on the feedback obtained in 2000.

Role of staff
As in 2000, the staff involved were committed to ensuring that the students received maximal personal and professional support during the RPP. The level of clinical supervision in all of the clinics ensured that no more than three students were supported during their clinical sessions. This is in vast contrast to clinical supervision in Sydney. The lack of formal assessment enhanced student learning as students were able to query and question with no fear that this would indicate unsatisfactory clinical ability.

"M was brilliant. A couple of times I was not quite sure about the treatment plans and at first I thought that she would give me a hard time if I queried someone else's work when I am only a student. Quite the opposite. She thought it was great that I wanted to discuss and even when I said dumb things she still treated me like a real dentist."

Student 19 November 2001

Without exception, the students recognised the excellent support provided by the RPP staff and described such support as being one of the “three best things” about the RPP. Access to a large number of staff was considered to be of great benefit to learning.
"I've never met so many dentists before! They all had different ideas and ways of doing things which was a bit confusing sometimes. It was excellent to have M and C to talk things through with after. Must admit I felt really special – no one had been so interested before"

Student 07 November 2001

The program was structured to allow such a diverse range of experience and the mentors were encouraged to develop the reflective ability of students. In the traditional educational environment, the staff to student ratio is inevitably less favourable and with a student cohort of approximately sixty, it is extremely difficult to provide the level of mentoring experienced during the RPP. The personal and professional benefits of mentors and diverse experiences are apparent and are considered further in Phase 3.

In 2001, students were advised to note questions or areas of concern in their journals and to use these as a basis for ongoing reflection with the mentor. There were no critical incidents reported. It is fair to say that the students were critical of some aspects of treatment provided but the opportunity to reflect on these with the mentor (and on occasion myself) ensured that these concerns were addressed, rationalised and contextualised.

"All very preoccupied with what they have been told by Professor/Dr so and so. This is the only way to do say endo. and if anyone does it differently they are cowboys. Eg. Student 11 said that they had been told that you should never use lignocaine if pt is hypertensive and she was worried that one of the staff never used anything else. This is a really great opportunity to discuss what makes a good dentist or a good technique leading into the whole EBD stuff. Really supports need to change approach to dental education. They need to challenge but also be able to work out how they will decide for themselves what is OK and what is not. Can see why many find first year out so hard – taught one thing and then working in different ways. Need to be more grounded in critical analysis".

DJC July 2001
DATA COLLECTION AND ANALYSIS

Data collection

All 24 participants completed both the pre- and post-placement questionnaires.

Student familiarity with rural lifestyle

Twenty three (96%) of the twenty four students had spent less than one month in rural areas of Australia and thirteen (56%) of this group had spent no time at all in rural areas. One student lived in regional Australia for the first 12 years of her life but had attended secondary school in a metropolitan area. She considered herself to be very familiar with rural lifestyle. This student is considered with other students from rural backgrounds in Phase 3.

Fourteen of the students had completed their primary education in a metropolitan city, two had been educated in a regional city and nine had received their primary education overseas. Twenty students had received secondary education in a city and four
attended secondary schools overseas. Two students were overseas-trained dentists and were completing their studies in Sydney. Most of the students (22) spent most of their childhood holidays in metropolitan cities or overseas.

**Student attitudes to rural practice before and after RPP**

Before the placements, the major advantages of rural dental practice were documented as being the rural lifestyle (ranked first), the increased breadth of clinical experience (ranked joint second) and the opportunity for increased remuneration (ranked joint second). On completion of the RPP, there was a slightly higher appreciation of the benefits of a rural lifestyle and the ability to provide a comprehensive range of patient care. There was an increased appreciation of the advantages of providing oral health care to a smaller community, where existing dental care opportunities are limited. These findings are summarised in Table 11.

**Table 11: Perceived advantages of a rural career before and after RPP 2001**

<table>
<thead>
<tr>
<th></th>
<th>Frequency of response</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-RPP</td>
<td>Post-RPP</td>
</tr>
<tr>
<td>Rural lifestyle</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Broader range of clinical experience</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Increased remuneration</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Ability to provide care where none exists</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Being part of a small, friendly community</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Full-time employment opportunities</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Independence</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Opportunity to learn</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

In 2000, students also identified the “less stressful working environment”, “low cost of living” and “easy commuting” as being advantageous. These issues were not mentioned in 2001. Students in 2001 considered “independence” and “opportunity to learn” as being advantages of rural practice. This finding stresses that the students’ perceptions of their personal and professional career needs are understandably unique.
and that the provision of a unique program allows them to tailor their experience to their perceived needs.

Students listed the perceived limitations of a rural career both before and after the RPP. As the majority of the students had reported that they were "not familiar" with rural or remote areas, it would seem that the limitations described before the RPP were as a result of discussions with other students and through the portrayal of 'the bush' in various media. It is apparent that the least attractive features of a rural career, on completion of the RPP, related to social factors. Missing family and friends, anxieties relating to independence, inability to drive, cultural isolation and making new friends accounted for over 50% of the possible responses.

The pre-placement concerns about professional isolation (which had been the major post-placement concern in 2000) decreased clinical experience and low salaries were less important to the students after the RPP in 2001. These findings are summarised in Table 12.

Again there were differences in perceptions between the students in 2000 and 2001. These differences stress that the reasons for graduates choosing rural careers vary between individuals and are largely focused on social elements. While the RPP led to an altered perception of both the limitations and advantages of rural practice, there is a suggestion that individual support for career choice should be an additional element of professional recruitment strategies. It is possible that lengthier programs might influence these perceptions and this is an area worthy of future research.
Table 12: Perceived limitations of a rural career before and after RPP 2001

<table>
<thead>
<tr>
<th></th>
<th>Frequency of response</th>
<th></th>
<th>Ranking</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Pre-RPP</strong></td>
<td><strong>Post-RPP</strong></td>
<td><strong>Pre-RPP</strong></td>
<td><strong>Post-RPP</strong></td>
</tr>
<tr>
<td>Distance from family and friends</td>
<td>20</td>
<td>20</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Professional isolation</td>
<td>18</td>
<td>8</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Lack of community services</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Lack of social activities</td>
<td>6</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Independence</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Distance from Sydney</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>No opportunity to meet a partner / make friends</td>
<td>3</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Cultural isolation/racism</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Decreased clinical experience</td>
<td>1</td>
<td>0</td>
<td>9</td>
<td>No mention</td>
</tr>
<tr>
<td>Low salaries</td>
<td>1</td>
<td>0</td>
<td>9</td>
<td>No mention</td>
</tr>
<tr>
<td>No work opportunities for partner</td>
<td>1</td>
<td>0</td>
<td>9</td>
<td>No mention</td>
</tr>
<tr>
<td>Inability to drive</td>
<td>0</td>
<td>2</td>
<td>No mention</td>
<td>8</td>
</tr>
<tr>
<td>Weather</td>
<td>0</td>
<td>4</td>
<td>No mention</td>
<td>6</td>
</tr>
<tr>
<td>Having a community identity</td>
<td>0</td>
<td>1</td>
<td>No mention</td>
<td>9</td>
</tr>
</tbody>
</table>

**Student interest in a rural career**

As was the case in 2000, students were asked to indicate their interest in a rural career using a 1-10 numeric ranking scale with 1 equating to “no interest” and 10 equating to “very interested”.

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After the RPP 2001, only one student recorded a decreased career interest score (from 8 to 7) while four students recorded the same pre- and post-placement scores (either 9 or 10). The remaining nineteen students recorded increased career interest scores after the RPP. Sixteen (66%) of the twentyfour participants recorded scores of 8 and higher after the program compared with eight (33%) recording these score before the placement.

SPSS analysis shows there to be a difference between the mean pre- and post-placement scores (6.4 ± 2.1SD and 8.0 ± 1.3 respectively). A paired samples student T test provides a t value of -4.944 with 23 df and a corresponding significance level less than 0.001. There was therefore a significant difference between the pre- and post-placement career interest scores.

Staff input

All of the students agreed with the statement "I felt well supported during my rural experience", with 50% of the students strongly agreeing that this was the case. The additional comments provided by students revealed that the RPP was well supported although the importance of a local mentor and coordinator was noted. Unforeseen circumstances prevented some mentors from being available throughout the program and the affected students commented specifically in this regard. The role of the local
mentors cannot be overestimated and the determination of suitable replacements needed to be considered further for 2002.

Several clinicians were mentioned by name as being particularly supportive and it is hoped that these practitioners will continue to support the Rural Placement Program. All of the involved clinicians expressed a desire to participate in future rural placements and links with the Faculty were maintained to facilitate this.

".......Our private and public colleagues could not praise them (the students) enough and consequently they will continue to support you and Faculty with the program in the years to come. We wish them well with their future careers........ we only hope that one day they may consider a rural career and lifestyle"

S July 2001

Student contribution to oral health care

During the placement, the students were required to keep a logbook of experience. In 2000, this log included details of assistance and observation however in light of student feedback, these data was not collected in 2001. In addition, one of the local mentors was unable to supply documents and details due to unforeseen circumstances. Data were thus incomplete.

Analysis of the sixteen available logbooks reveals that a comprehensive range of treatment was provided for a total of 135 patients. Students attending the RPP in Orange were exposed to a wider range of clinical experience, resulting in less time spent in the provision of patient care in the Community Dental Clinic.
Table 13: Clinical experience during RPP 2001

<table>
<thead>
<tr>
<th></th>
<th>Orange (n=8)</th>
<th>Broken Hill (n=8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of patients</td>
<td>44</td>
<td>91</td>
</tr>
<tr>
<td>Average no. of patients per</td>
<td>5.5</td>
<td>11.38</td>
</tr>
<tr>
<td>student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>4-9</td>
<td>8-15</td>
</tr>
</tbody>
</table>

Patients attending the Community Clinics in Broken Hill and Orange, either for routine treatment or for emergency care, were allocated to a student operator. Patients were informed that the Clinic was an accredited facility of the University of Sydney; all patients consented to treatment by the students. As many of the patients had waited a considerable length of time for their treatment, they were amenable to the concept of supervised care with a student.

In contrast, patients awaiting routine care at the Dubbo Community Clinic were contacted by the receptionist and offered an earlier appointment with a student. All of those contacted accepted this appointment with no apparent reservations. The coordinator at Dubbo has indicated a willingness to select patients appropriate to individual student needs in future placements. This possibility will be explored for 2002 mindful of patient and community needs.

"The clinical experience that they have had was not as varied as they would have liked and I feel that we could do better if we had a wish list from students well in advance so we could address their wishes via the appointment book"

R August 2001

Staff feedback

The feedback obtained from the local mentors and clinicians was extremely favourable.
“This group of students are very switched on. I can notice a difference in their level of interest and skills in pros. It has all gone very well although ....... has meant that I have not been as personally involved this time”.

R July 2001

“You should be proud of the conduct, demeanour and honest effort of all the students that were placed in (town). They showed to me that they were aware of the present challenges of rural dentistry and in their current clinical skills, they are already showing their capacity for lateral thinking and caring attention to the needs of their patients”.

K September 2001

With the clinical effort given by the students we have been able to reduce our clinical load by about 20%. This has been a profound relief for us in the all too often hectic nature of our daily clinical load. On top of this, it is beneficial to us as rural dental practitioners to share our current thoughts on treatment trends and philosophies that students can provide through their present studies. I look forward to the future development of the relationship of the local Department of Rural Health and the faculty”.

C August 2001

“The students were very keen to make the most of their time here in (town) and you should be extremely proud of the way they represented their Faculty, University and profession”.

T July 2001

Conversations with other staff were universally positive. The students were commended on their professionalism and enthusiasm and all staff made an ongoing commitment to the program.

Involvement with the RPP entitled staff to apply for honorary academic appointments with the Faculty of Dentistry. I encouraged staff to submit curriculum vitae in order to
fulfil university requirements and received nine applications for such appointments. Eight of these were from public sector dentists and one was from a private practitioner in one of the host towns. During conversation, it transpired that the other staff participants had no real desire for an honorary appointment but indicated that they would prefer support from the university in improving access to professional education. As a consequence and with the support of the Faculty’s Department of Continuing Education, a ‘Rural Dental Update’ program was developed and the inaugural program was delivered in one of the host towns in 2001. All RPP staff and numerous other local clinicians attended the continuing education program that I facilitated and that featured renowned international speakers. The response to this endeavour was overwhelming and provided support for those who had been involved in the RPP to that time and also encouraged involvement from new staff. This update initiative subsequently expanded and is now a regular feature of the Department’s annual program.

**Improvements to the RPP**

The students generally felt very positively about the program and the feedback obtained was generally location specific; for example only the Broken Hill students were able to travel with the RFDS. All of the students, without exception, referred to their "enjoyment" of the RPP. All twenty four (100%) indicated that they would recommend rural practice to other student colleagues as a result of their participation, although nine of the students qualified this response with words to the effect that they would advise them to spend a short period in the location prior to decision making. This would suggest that although the students perceived the advantages of rural practice they also had an awareness of the influence of personal factors in decision making.

More specifically, students were asked to list "the three best things about the Program". Several mentioned four or five elements.
Table 14: Student perceived strengths of RPP 2001

<table>
<thead>
<tr>
<th>Strengths of RPP</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting more clinical experience</td>
<td>16</td>
</tr>
<tr>
<td>Experiencing rural lifestyle</td>
<td>14</td>
</tr>
<tr>
<td>Meeting new people</td>
<td>11</td>
</tr>
<tr>
<td>Orientation Program (Risk management session mentioned by 6 students)</td>
<td>11</td>
</tr>
<tr>
<td>Approachability of clinicians</td>
<td>10</td>
</tr>
<tr>
<td>Range of locations/activities</td>
<td>8</td>
</tr>
<tr>
<td>Organisation of the Program</td>
<td>6</td>
</tr>
<tr>
<td>Opportunity to fly with RFDS</td>
<td>5</td>
</tr>
<tr>
<td>Balance between work and recreational time</td>
<td>4</td>
</tr>
<tr>
<td>Learning without worrying about being assessed</td>
<td>3</td>
</tr>
</tbody>
</table>

Students were also asked to list three improvements that they would make to the Program. In general, suggested improvements were individual, location and timing specific.

**Orientation Program**

In response to feedback from 2000, a slightly longer, less intensive orientation program was held in Broken Hill. In 2001, one student still felt that the orientation program was “too long”. Several students in 2000 had expressed a desire to learn more about the Aboriginal communities and cross-cultural issues. There were no recommendations for further improvements in this regard from 2001 participants.

**Clinical work**

Thirteen students commented that they would have preferred more clinical experience during their placements; six of these students were placed in Orange and as previously mentioned, the breadth of experience provided restricted the treatment sessions available.

Sixteen students felt that one day observing private practitioners was “too long” and they all suggested that a half-day would be adequate. Eight of these students were based at Broken Hill.
Due to the absence of the RFDS dentist, Group 2 students did not benefit from this experience. An industry colleague provided this group of students with learning materials and they travelled with the RFDS to remote locations to talk to school age children. All four students expressed great disappointment that they were not able to work with Y.

Two students would have liked a greater range of clinical experience as “we didn’t learn much from just doing fillings and scale and polishes”. Whilst appreciating the students’ desire to further develop their clinical skills, the need for and appreciation of ‘real-life’ dentistry is important. One student commented that “perhaps get more chairs so we could do more work”. While this would undoubtedly provide additional clinical experience, the RPP has been developed to use existing infrastructure and staff.

**Program structure**

The students generally appreciated the diversity of the program although one student commented that they would have liked “more information about each place before having to choose where to go”. It had been anticipated that the students would investigate the various options open to them prior to application however this student had not undertaken any pre-placement research. In 2002, students will be informed to this effect. Another student felt that the timetabling was “not very good” and that “flight details should be confirmed the day before departure”. I had assumed that the students would read the information on the flight tickets; this clearly indicated the need for flight details to be reconfirmed the day before departure.

Six students felt that the RPP should be mandatory and one suggested that students should make a financial contribution to allow others to attend. It is the hoped that adequate funding for a mandatory RPP will be obtained by 2004.
Social opportunities

Despite increased leisure time in 2001, four students commented that they would have liked “more free time” and two requested more social functions. Eight students would have liked to have a car available for them during their placements. Three students wished to be accommodated closer to the Town Dental Clinic in Broken Hill as it was a long way to walk. Macquarie AHS provided a car for those students based in Dubbo.

All of the students based in Dubbo commented on the poor accommodation provided. It appears that there were several different student groups present in Dubbo at that time and “the best rooms had gone”.

Students attending the RPP 2002 would be informed of the feedback from 2001 and encouraged to accept responsibility for placement choices, travel arrangement confirmation and local transport.

The local coordinators are pivotal to the success of this program and in light of the various absences, largely unforeseeable, there will be further consultation and collaboration with staff to ensure that appropriate mentoring is provided for the students.
A comprehensive report on the RPP 2001 was compiled and submitted to the Faculty for appropriate distribution. Additional copies of the report and an executive summary were sent to all staff and stakeholders. Recipients were encouraged to provide additional information or amendments by a specified date.

Co-researcher input
As previously described, staff provided brief comments in response to a personal verbal request however there was no spontaneous written submission. There was consensus that the program was successful and the fact that all staff indicated their ongoing commitment to the program is interpreted as tacit approval.

Fourteen of the RPP students attended a discussion group in Sydney approximately one month after completion of the program. As the RPP was held earlier in 2001, there was ample scope to arrange a mutually convenient time. The students agreed that the report was an accurate representation of the RPP 2001 and had no suggestions for
amendments. They did however have opinions on the practicalities of the program and strongly suggested that more students should have the opportunity to participate in the future. The need for academic rigour for any mandatory program was also discussed. The students considered the RPP to be peripheral to their dental education by virtue of the elective nature of the program. In this context they considered that formal assessment during the RPP would have been a barrier to their clinical learning and they strongly advocated a self-assessment strategy of some sort. They reflected that the learning achieved had been broad and multi-faceted and that assessment of the learning contracts was not representative of all that they had learned. They considered that learning was “inevitable” and that the self-assessment should require reflection on that learning. As such they indicated that reflective statements would have been of greater value to them than the fulfilment of a very specific learning contract.

Input from stakeholders

Faculty of Dentistry

In recognition of the need for further program development, the Faculty increased the academic position from 0.2 FTE to 0.4 FTE through a joint appointment with the UDRH. With a commitment to mandatory rural placements from 2004, I became a member of the Faculty’s Year 4 development group in order to support Year 4 BDent curriculum planning. Based upon recommendations from the RPP, the Faculty indicated a desire to incorporate dental education with the rural campus developments in Orange. Discussions with the final year coordinator resulted in a decision to expand the RPP in 2002 and 2003 to ensure that there were ample opportunities for students of the BDS curriculum to participate in the RPP.

University Department of Rural Health

The success of the RPP provided additional impetus to the development of additional rural student experiences at the UDRH. Presentations at a University level demonstrated the value of a multi-disciplinary approach to rural education. The UDRH was receptive to program expansion and facilitated the involvement of new clinical venues through the UDRH at Lismore.
Oral Health Branch of NSW Health

The OHB received the RPP report and documented continued commitment to the program. Negotiations regarding formal funding arrangements for expansion of the program commenced.

ADA NSW Branch

In addition to the formal RPP report, an article and ‘roll of honour’ were written for the branch newsletter. There was support for the proposal that the RPP be expanded in 2002 and it was resolved that additional funding would be provided to allow 36 students to participate. The commitment to the Risk Management session was maintained and the participating ADA NSW staff enthusiastically agreed to attend all three planned RPPs in 2002.

Dental Board of NSW

The Dental Board agreed with the proposed selection criteria for new clinics and supported the expansion of the RPP in 2002.

Additional reports

Both during and after the RPP 2001, students featured in local newspaper articles. In addition, numerous requests were received for radio interviews with local and national stations. These led to incorporation of the RPP as one element of a “7.30 Report” feature on the rural dental workforce.

The Dental Board of NSW research project was completed in 2001, and a second grant was obtained from the Commonwealth Department of Health and Aged Care, through its Rural Health Service Education & Training (RHSET) program. This allowed an investigation into the rural dental workforce to commence in 2001.
Graduate employment of RPP students

It was agreed that all students participating in the RPP in 2001 would provide employment details in early 2002. The established email group (that still included RPP participants from 2000) was used to maintain contact and once again, this provided valuable support for the students through employment advice, distribution of job opportunities and personal support.

All twenty four students graduated from the Faculty of Dentistry in December 2001. The four students who had attended the RPP 2000 as fourth year students, also graduated at this time. Of this group of four, two (50%) chose rural employment in Orange, NSW and Burnie, Tasmania. The other two elected to work as Dental Officers in a metropolitan teaching hospital.

Of the graduating 2001 students (24 who attended RPP 2001 and 4 who attended RPP2000), one did not provide employment details and student colleagues assumed that they had returned overseas. Five (18%) of the graduates were working at the metropolitan teaching hospitals and ten (36%) had accepted private practice employment in metropolitan Sydney. Twelve (43%) had moved outside Sydney; four (15%) of these were working in Accessible (A) areas on the Eastern Seaboard and eight (28%) were working in Moderately Accessible (MA) or Rural (R) areas in NSW.

An analysis of the pre- and post-placement scores for the entire RPP group is provided in chapter 11. The findings from RPP 2000 and 2001 informed the development of RPP 2002.
CHAPTER 9

RURAL PLACEMENT PROGRAM 2002
Expansion of the RPP

During the period 2001-2002, the organisational structure for oral health services in NSW was considerably revised. One outcome of this was the establishment of geographic ‘Oral Health Networks’ with managers responsible for oral health services within groups of Area Health Services (AHS). Far West, Macquarie and Mid West AHS, the locations for the existing RPP, formed the Far Western Network. The formation of the Northern Oral Health Network resulted in the grouping of Hunter, Northern Rivers, New England and Mid North Coast AHS. The appointment of a dynamic and proactive Network Manager facilitated the development of RPP opportunities within the Network. Locations and AHS are shown in Figure 7.
Within the context of emerging Network strategic planning, the Network Manager and AHS managers had identified a need to support recruitment and retention initiatives. The RPP was embraced as one such strategy. The previously documented outcomes of the RPP were presented to key personnel and this resulted in a formal commitment to expansion of the RPP into the Northern Network. Memoranda of Understanding (MOU) were established with each AHS in the Network and the Chief Executive Officers (CEO) for each AHS were co-signatories with the University.
RPP based in the Northern Oral Health Network

RPP mentors in each AHS were identified and were provided support in the development of clinical placements for an additional 12 students. The need to provide an Orientation Component for all of these students was subsequently discussed. It was decided, in light of the favourable outcomes of RPP 2000 and 2001, to maintain a group orientation. While small group orientation may have been easier to coordinate and less expensive to implement, the feedback from previous students supported orientation opportunities for larger groups. In addition, the academic components of the program could not have been delivered at four different locations simultaneously. The possibility of video-conferencing was discussed at length however the cost and availability of the required facilities was prohibitive at this time. The benefits of group learning during the orientation have also been described previously and consultation with the various staff members involved confirmed the decision to conduct a group orientation.

A venue for this group orientation was determined with difficulty. With students based in Lismore, Tamworth, Newcastle and Coffs Harbour, my initial proposal was that the orientation would be based in the newly established University Department of Rural Health (UDRH) at Lismore. Students would fly to Lismore and then travel to their clinical placements by train or plane. They would then return to Sydney by train. Unfortunately this was impossible to coordinate.

"Sydney to Lismore x 12 is about the same as Sydney to Broken Hill x12 so that’s OK BUT getting everyone from Lismore to where they need to go is going to be a nightmare. Don’t want them to spend the entire RPP travelling – think that the flying makes it all seem so much more accessible. 12 hours on a train might put them off! It’s actually pretty hard to get around the place if you are working on a tight schedule. Guess they could drive but know at least half a
dozen who do not have cars. Hiring might be an option. Got to do this on a budget too. Think that we might have to do orientation somewhere more central”

DJC March 2002

The proposed involvement of the UDRH was an additional consideration at this time. As a newly established unit with limited infrastructure and academic support, the ability to host twelve students was questioned. This reticence was purely based on practicalities and the UDRH clearly stated their support for future RPP opportunities.

The possibility of holding the orientation in Sydney was considered. This was obviously practical and cost efficient however my personal experiences and the document feedback from previous students supported orientation at a distant location. The camaraderie and opportunities for shared learning were certainly evident during previous orientations and it was my belief that these benefits should be retained. Fortunately, the Network Manager shared my belief and generously provided financial support for a ‘central’ group orientation. The additional support provided by the CEO on the Mid North Coast resulted in a decision to hold the orientation in Port Macquarie. All 12 students would attend this orientation and it was planned that the four AHS RPP mentors would attend on the final morning of orientation to drive the students to their clinical placements. Students would return to Sydney by plane and train depending upon their location.

During ongoing discussions with the mentors involved in this new RPP, it became apparent that the range of experiences and staff potentially available to support the students were highly variable. In order that clinical experience for the students was optimised, it was subsequently agreed that four students would be based in Hunter AHS, two students based in New England AHS, three students placed in Mid North Coast AHS and three students placed in Northern Rivers AHS. The mentors were provided with reports from the previous RPPs and one to one support in developing appropriate placement rosters. As the students had clearly documented the benefits of additional clinical experience and the RPP aim was to provide oral health care for local
residents, mentors were encouraged to provide as many clinical opportunities as possible. The need to develop links with local private practitioners for observation and outreach opportunities was also stressed.

During discussions with Hunter AHS it became apparent that this AHS would provide an ideal ‘regional’ venue for students who may not be able to spend two weeks away from home and family. This was thought to be an important option for students of the new curriculum who are an older cohort and therefore more likely to have family commitments in Sydney.

I established links with private practitioners in each of the AHS and provided them with details of the planned RPP in the Network. As I was based on the Central Coast and each of the placement sites was geographically distant, the mentors agreed that they would develop the initiated professional links and subsequently compile draft rosters for my input.

With reference to the criteria approved by the Dental Board of NSW, mentors made formal submissions for accreditation as approved teaching facilities. These submissions were approved early in 2002.

The Network Manager strongly supported the RPP aim that the students should have a positive experience during the program and decided to allocate funding for excellent accommodation where possible. Students were provided with beachside Motel accommodation for the duration of the orientation at Port Macquarie and a range of quality accommodation during their clinical attachments.

**RPP based at Broken Hill**

There was considerable organisation required to develop additional RPP opportunities however there was an obvious need to maintain and strengthen links with the staff involved at Broken Hill, Orange and Dubbo. The inevitable personnel changes required new links to be established and once again, academic support was provided
on a one to one basis. Fortunately the mentors in Orange and Dubbo, having supported the RPP in the past, willingly accepted responsibility for the local organisation of the RPP. This local support allowed me to provide optimum support for the new staff involved in the program with the knowledge that the mentors were totally committed to the existing program. It was particularly rewarding to receive this level of support and collaboration for the program and through this working relationship, the mentors were empowered and accepted ownership of the RPP in their areas.

Introduction of RPP 2002 to students

At the start of the 2002 academic year, final year students attended a general orientation week in Sydney. I was provided with an opportunity to address the students during this week and as a consequence, all students were informed of the RPP opportunities planned for 2002. Participation was again entirely voluntary. An application form was distributed to determine the demand for places. A total of 38 applications were received by the end of March 2002. Subsequently four students withdrew their applications, one student accepted a place but subsequently deferred their enrolment and one student was unable to attend due to unforeseen personal reasons. 32 students were therefore provided with places on the RPP 2002.

As a total of 36 places had been developed it was necessary to revise the placement plans. Table 15 shows the placement of students during RPP 2002. In deciding where to place students, flexibility of mentors and local staff, and student choice were major factors. It was agreed that as the mentors in Orange and Dubbo had prior experience and therefore greater confidence in supporting students, they would modify the rosters to accommodate fewer students. The student who withdrew at short notice was placed in Broken Hill during weeks 1 and 2. It was therefore possible to continue with the planned developments in the Northern Network.
Table 15: RPP overview and student placements 2002

<table>
<thead>
<tr>
<th>Location</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broken Hill</td>
<td>Three students</td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>Three students</td>
<td>Three students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dubbo</td>
<td>Three students</td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newcastle</td>
<td>Four students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tamworth</td>
<td>Two students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffs Harbour</td>
<td>Three students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lismore</td>
<td>Three students</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pre-placement briefing

All 32 students had received written information by email prior to the pre-placement briefing. There was 100% attendance and all students completed the pre-placement questionnaire. Students were informed of the ongoing research into the placements and all students willingly embraced the role of co-researchers. They were clearly informed that the outcomes of their involvement would be used in research documentation and that their anonymity was assured. They were also aware that their participation in the program and its evaluation was voluntary and that they would not be subject to any form of prejudice if they chose not to participate in the planned discussions or complete the distributed questionnaires. There were no concerns raised.

While the motivating factors for participation in the RPP were very similar in the 2000 and 2001 cohorts, it was possible that the increased availability of places may have attracted a different group of participants. On review of the motivating factors it was apparent that these were very similar to those previously described. There was an increased number of students who considered that the RPP would inform their career decision-making. It was interesting to note that overall there were fewer documented motivating factors over the whole group, despite the group being larger than in previous years. Several students responded with one generic statement such as, “experience the country”.

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Table 16: Motivating factors for students attending RPP 2002

<table>
<thead>
<tr>
<th>Motivation to attend RPP 2002</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>To experience rural lifestyle</td>
<td>16</td>
</tr>
<tr>
<td>To learn about dentistry in a different environment</td>
<td>12</td>
</tr>
<tr>
<td>To assist in career decision-making</td>
<td>16</td>
</tr>
<tr>
<td>To have a new life experience</td>
<td>5</td>
</tr>
<tr>
<td>To have a holiday</td>
<td>6</td>
</tr>
<tr>
<td>To meet new people</td>
<td>3</td>
</tr>
<tr>
<td>To learn about dental health issues in the country</td>
<td>4</td>
</tr>
<tr>
<td>To get more clinical experience</td>
<td>4</td>
</tr>
</tbody>
</table>

As described in Chapter 8, it was decided that the students participating in RPP 2002 would be required to submit reflective statements as evidence of experiential learning. The students were also required to complete a self-assessment of their learning during the RPP. The pre-placement briefing was therefore structured to support the students in embracing the concept of reflective statements and determining the criteria against which they would assess themselves. Prior to this, students were given a comprehensive overview of the practicalities of their placements. During email exchange many individuals had communicated their concerns about accommodation, transport, staff expectations and mobile phone reception (!) and this appeared to dominate the educational aspects of the program. I elected to address this at the outset of the briefing session.

Subsequently, as in 2001, students worked in small groups according to their clinical placement location. The value of pre-experiential reflection was demonstrated using contrived examples from the literature (3, 55) and my personal experiences from the RPP. Using various exercises (53, 97, 116), the students were encouraged to discuss and reflect upon their previous learning experiences, strategies that they might use to promote reflection during the RPP and methods by which they might demonstrate their learning through their reflective statements.

The second half of the pre-placement briefing considered self-assessment strategies. Mindful of the time constraints of previous years and the need to provide support for a greater number of students in 2002, a summary document outlining the rationale and
principles of self-assessment was distributed to the students (110). While the majority of the students openly discussed their opinions and perceptions of self-assessment it was apparent that several students were unwilling to contribute to the discussion and a small group were overtly opposed to self-assessment.

"What's the point because we are all going to say that we passed anyway. It's much more important that the dentists assess us because they know what we need to do and whether we are any good."

Student 21 June 2002

It was interesting to note that the students debated this comment without prompting. Student 07 questioned the ability of the clinicians to fulfil the role of assessor when they did not regularly teach students and therefore did not have current knowledge of teaching and learning methods. Another student (30) appreciated the need for self-awareness and noted that he usually assessed himself before he sought validation of this from his clinical supervisor. He considered this to be an essential element of clinical care in that he would not seek assessment unless he was satisfied with his outcomes.

"Surely you wouldn't ask for a grade if you didn't think that you had done it properly? I mean the tutor isn't there to judge you, they are there to reassure you that you have done the right thing and you should know that anyway. The tutor is there to bail you out if you really don't have any idea."

Student 30 June 2002

Using this student's observations, I described an example of criterion-referenced self-assessment as being, "Supervisor agreed with me that the treatment I provided was of good quality" with pass/fail options. In the ensuing discussion it was clear that several students had the perception that there was a tendency for tutors to want to fail them.
"I think I've done a good job but there's always something that is wrong. Dr n is the worst. Whatever you do he always finds a reason to tell you how hopeless you are. Think he just likes to let you know that he's crash hot!"

Student 18 June 2002

As a clinical educator, I found the students’ comments to be pertinent to the ongoing development of the BDent curriculum. Due to time constraints, discussion had to be limited in order that the self-assessment strategies could be developed within the time frame of the pre-placement briefing. I informed the students that their reflections on the decision to use self-assessment and their experiences of this during the RPP would be usefully documented in their post-placement reflective statements. I also emphasised that while the RPP was designed to provide a student-centred educational program, there were requirements both in terms of academic rigour, validity, reliability and the practicalities of implementation. However it was agreed in principle that clinical staff could be asked to provide assessments for individual students on request. This tentative agreement was qualified by my observation that any formal staff assessment would also need to be criterion-referenced and that the student would need to develop appropriate criteria.

The group agreed that the priority should be the self-assessment and that this should be practical and achievable. One student (12) suggested that there should be an agreed number of assessment domains and there was consensus that this was appropriate. Using small group work with subsequent negotiation, the following domains were identified; clinical skills, communication skills, interest and involvement, attendance and knowledge. Students then developed criteria for each domain on an individual basis with defined ‘satisfactory’ and ‘unsatisfactory’ outcomes. During earlier discussions, the relative merits of graded and un-graded assessment were also discussed with a range of options mooted by students. Again, to ensure timely progression of the development of self-assessment, I advocated an un-graded method. On completion of the criteria, one student (09) observed that “adding up the satisfactory column kind of gives you a ranking”. While a valid observation, another student retorted “but if you get a 2 then that means you actually failed three parts of the
five and if these were clinical skills, knowledge and attendance, you could be interested and communicating well in the pub!”.

It was disappointing that the debate on accumulated grades had to be curtailed because of time demands however I encouraged continued debate by email. Despite prompting, this did not occur. I also encouraged those students who wished to develop staff assessment criteria to use the domain framework as a basis for this. None of the students developed a staff assessment strategy however the information gleaned from this session was used in the development of assessment strategies for the Elective Program and the mandatory RPP component of the BDent curriculum (refer Phase 3).

On completion of the pre-placement briefing each student had completed a self-assessment proforma and had commenced a pre-placement reflective statement as a basis for the final reflective statements.

It was a gain disappointing that the students did not participate in email discussions despite a high level of participation in the group debate. While electronic communication provides opportunity for distant communication, it is clear that these students did not value it as a method by which they may contribute on an ongoing basis. Those who communicated by email used it as a way of getting an immediate response to a direct question. As the 2001 cohort had displayed a similar approach, this might suggest that the use of email for shared learning over large distances has limited value without appropriate skill development.

Over the following two weeks, I reviewed all of the self-assessment criteria and returned these to the students. Unsurprisingly there was a remarkable level of consistency in the criteria developed. Several students had defined complex criteria that would be difficult to validate or were unrealistic. One student (13) defined a satisfactory outcome in the knowledge domain as being the ability to “answer any question that I am asked”. Another (17) considered a satisfactory outcome in the skills domain to be “I can do all the treatment without any help”. I made written comments and suggestions on the students’ documentation and encouraged them to consider more
achievable criteria. To use the above examples, the criteria were amended to read, “I have the knowledge to provide treatment but can also work out where the gaps are” and “I can provide treatment with minimal support but know when to ask for help”.

Program structure

Some of the practical implications of expanding the RPP into the Northern Oral Health Network have been described at the beginning of this Chapter. Independent of this expansion and based on the feedback from the RPP 2000 and 2001, the overall structure of the RPP was maintained.

Orientation Program

Three separate orientation programs were held in 2002. Each orientation commenced on a Sunday afternoon with an, ‘Area in Context’ presentation. In Port Macquarie, the Network Manager facilitated this session. The ADA NSW Risk Management session was held on the Monday morning of each orientation and, due to the increased time commitment required, O and B were supported by D. As there was no Royal Flying Doctor Service (RFDS) provided from Port Macquarie, the CEO of Mid North Coast AHS and I facilitated a workshop entitled “Access to dentistry in Regional, Rural and Remote Areas”. Students based at Broken Hill attended the RFDS base for a similar session facilitated by M.

UDRH staff facilitated the cross-cultural workshop at Broken Hill however the planned session for Port Macquarie did not take place, as key personnel were unable to attend. This was a major shortcoming and there were no alternative personnel identified to fill the session. Had the orientation been based at a UDRH it may have been feasible to recruit a replacement facilitator at short notice. To their delight, the Port Macquarie students therefore enjoyed an additional afternoon’s recreation. Other elements of the Broken Hill orientation have been described in Chapters 7 and 8. On the final morning of orientation at Port Macquarie I facilitated a panel forum on “Rural Careers” with the mentors from each of the AHS, the Network Manager and local practitioners. This session was based on the motivating factors defined by the students
but was unfortunately interrupted by three separate requests for local TV and radio interviews with students and staff.

There was no longer a need for a formal 'Learning Workshop' during the orientation as the Learning Contract component was excluded from the RPP 2002 and the other learning requirements had been conducted during the pre-placement briefing. I did provide a brief 'refresher' presentation on the first afternoon of the orientation.

The two orientation programs were very different and the student feedback is detailed later in this Chapter. From a personal perspective, the following excerpt from my research diary demonstrates my frustration at the time.

"Cannot believe it – fell apart big style. What could I have done to avoid this? Couldn’t have done any more to book speakers – the unpredictable is unpredictable but ..... annoying. Maybe should have had back up booked but no-one local so not really feasible. Maybe BH staff could have come here?? Not sure but worth looking at for next time. Orientation at Lismore may also be solution. As for tele – good publicity I suppose and (03) loved the 15 mins of fame! VERY disruptive but couldn’t really tell them to go away. Not sure how to manage this – need to talk to AHS media person. Lots of 'wasted' time."

DJC August 2002

On reflection, there was very little that I could have done to prevent the disruption to the orientation however this stressed the desirability to base the RPP academic orientation in an academic environment where back up and support is available and media interest can be coordinated.
CLINICAL PLACEMENTS

Clinical Work and Rosters
Each placement offered a unique range of clinical experience and students were provided with draft rosters by email. They were encouraged to contact me if they had any queries or concerns about these drafts. The students were also aware that changes to the rosters, whilst likely to be minimal, may take place prior to their placements and that they would be provided with local information at the time.

In liaison with the various AHS, data summarising clinical activity was collected using ISOH (Information System for Oral Health). As in previous years, students were required to maintain individual logs of experience.

Learning requirements
As described in depth, the pre-placement briefing resulted in the learning requirements being clearly defined as;

- a post-placement reflective statement,
- a self-assessment, and
- a log of clinical experience.
- These were submitted at the post-placement briefing held in Sydney.

Post-placement briefing
The post-placement briefing was held in Sydney just over five weeks after the final RPP students had returned. Twenty six of the thirty two students (82%) attended and submitted reflective statements, self-assessments and completed post-placement questionnaires. The remaining six students were subsequently contacted by email and asked to provide a ‘career interest score’ as a minimum for evaluation. All of these students readily supplied this information however they did not submit either reflective statements or self-assessments. It is likely that these elements were not completed.
Staff development

With the introduction of four new AHS placements staff development was a high priority in the months preceding the RPP. The Network Manager supported me in the identification and support for local mentors and these mentors then identified and recruited local personnel. Mentors from existing RPP locations also assisted in staff development, largely through existing oral health networks.

I provided both one to one and small group staff development on an identified needs basis. Teleconferencing provided considerable support, as regular site visits were difficult to coordinate over such large distances, particularly as I had a limited amount of time available.

STAKEHOLDERS

Faculty of Dentistry

The Faculty of Dentistry re-advertised the 0.4 FTE position that had been established in 2001 and presented the outcomes of the RPP at various professional symposia.

University Department of Rural Health (UDRH), Broken Hill

The UDRH also maintained co-funding for the academic position mentioned above. The Faculty of Pharmacy program also expanded and negotiations commenced with other areas of health education. I was invited to contribute to AHS health employee orientation thus increasing awareness of oral health in the context of general health.

Oral Health Branch of NSW Health (OHB)

The OHB supported the development of additional RPP opportunities and I was invited to present at the Oral Health Executive meeting. The Minister for Health documented his strong support for the RPP initiative. The involvement of the Northern Oral Health Network Manager resulted in considerable financial support for those students who were based in the Network.
ADA NSW

The ADA NSW and Guild Insurance and Financial Services (GIFS) again generously provided travel bursaries for all 32 students. $25,000 was provided to ensure that all travel expenses were provided for. In addition, staff involved with the orientation Risk Management session travelled to Port Macquarie and Broken Hill (on two occasions) to facilitate the sessions. ADA NSW hosted welcome functions at each of the orientation programs.

Dental Board of NSW

The Dental Board accredited clinical facilities in each of the four AHS involved with the expansion of the RPP.

RESEARCH CYCLE 3

Research questions

The research methods developed and described in Chapter 8 were reviewed in light of the findings from 2001. While a grouped table (Appendix 3) indicated the reduced relevance of reflective statements within the context of RPP research, the voluntary
nature of the RPP and the need to define the requirements of the mandatory program provided an opportunity to evaluate reflective statements as a measure of student learning.

A review of grouped themes (Appendix 3) demonstrated that the research questions emanating from this project and the outcomes of previous research cycles allowed a substantial refinement of the research methods to be used in 2002. As described in Chapter 4, action research methodology provides flexibility to develop new research questions and appropriate methods throughout the project. The research questions outlined were therefore developed in light of experience and with stakeholder input in alignment with the research theory. Using the original research aims as described in Phase 1 and the identified thematic concerns (Appendix 1) the research questions for this cycle can therefore be listed as;

- Did the RPP staff support and inspire the students?
- Did the RPP result in students having positive attitudes to rural practice and lifestyle?
- Were honorary titles an incentive to become involved with the RPP?
- Did any staff recruit as a consequence of the RPP?
- What contribution did the students make to patient care?
- Have the stakeholders supported the Faculty?
- Did the students learn through participation in the ADA NSW Risk Management session?
- Are the students more aware of the ADA?
- Has there been any inclusion of oral health into other health curricula?
- Did the students achieve what they wanted to?
- Is the RPP a student-centred experiential learning opportunity?
- Does the RPP provide a template for extramural education?
- Can the RPP develop into a mandatory program?
- Did the students meet other students?
- Did participants work in rural areas when they graduated?
Research methods
Using the list above, the research methods used in 2000 and 2001 were reviewed to evaluate their validity. As a consequence, the research methods used in 2002 comprised the following.

Pre- and post-placement questionnaires
Outcomes from RPP 2000 and 2001 demonstrate that the pre- and post-placement questionnaires provide data appropriate for questions 1, 2 and 10. Additional questions were inserted to address questions 8 and 14. The session evaluation used in previous years was continued to address question 7.

Reflective statements
As outlined above, students were required to submit reflective statements to fulfil their learning requirements. These were used to support findings from other research methods. It was expected that the reflective statements would assist in addressing questions 10 and 11.

Log books
Students were required to maintain logs of experience and the ISOH system was used to generate clinical activity reports for the participating clinics. These methods addressed question 5.

Student interviews
A student interview proforma was developed to address questions 10 and 11.

Staff interviews
Mindful of the limited response to previous questionnaires, it was decided to ask staff members for direct responses to questions 3 and 4 above. All staff were also invited to submit reports and comments to inform future developments and research.
Personal reflections

Questions 6, 9, 12 and 13 were addressed as a consequence of my personal experiences as RPP researcher.

Review of graduate employment

All final year students were contacted by email to determine where they had chosen to work immediately after graduation. Public records and graduate networks were used to locate the workplace location of non-respondents. This addressed question 15.

These over-arching research questions are considered in depth in Phase 3 of the project; the remainder of this chapter focuses on the findings from the RPP 2002.

STUDENT LEARNING

Did the students achieve their goals?

The decision to omit the learning contract element of the RPP was based on the feedback from students that the contracts tended to narrow their focus to learning (page 121). This necessitated a different approach to learning. As a consequence, the pre-
placement questionnaire required students to define up to five goals that they wanted to achieve during the RPP. All 32 participants completed the questionnaire and listed individual RPP goals. As an indication of the consistency of these goals, Table 17 provides a summary.

Table 17: Student goals for RPP 2002

<table>
<thead>
<tr>
<th>Goal</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaining clinical experience</td>
<td>31</td>
</tr>
<tr>
<td>Having fun</td>
<td>20</td>
</tr>
<tr>
<td>Determining whether they will work in rural area after graduating</td>
<td>12</td>
</tr>
<tr>
<td>Experiencing rural lifestyle</td>
<td>12</td>
</tr>
<tr>
<td>Understanding the oral health issues facing rural communities</td>
<td>9</td>
</tr>
<tr>
<td>Discussing dentistry with professional colleagues / networking</td>
<td>8</td>
</tr>
<tr>
<td>Providing treatment for indigenous patients</td>
<td>7</td>
</tr>
<tr>
<td>Developing communication skills</td>
<td>7</td>
</tr>
<tr>
<td>Providing treatment with RFDS dentist</td>
<td>2</td>
</tr>
</tbody>
</table>

These goals were obviously aligned with the motivating factors for attending the RPP however it was apparent that the major goal for most participants was to gain additional clinical experience. Many students added comments that reflected their desire to gain clinical confidence and independence.

On completion, students were asked to indicate whether they had achieved all, some or none of their goals. Of the 26 respondents, 25 indicated that they had achieved all of their goals and one student indicated that she had achieved some of her goals. Informal conversation revealed that the student had wanted to work with the RFDS dentist and provide care for indigenous Australians but had not had the opportunity to achieve these goals. As an aside, after graduating and through professional links established during the RPP, this student spent one week working with the RFDS dentist.

During the group de-briefing, students were asked directly whether they had achieved all that they wanted to. There was no doubt that they had all achieved their initial goals but several students noted that they weren’t really sure exactly what they wanted to
achieve before they went. One student (27) suggested that two placements would provide the opportunity for initial “reconnaissance” followed by a more goal-orientated placement. Other students agreed that this would be a useful opportunity. Another student (08) suggested that I should set “achievable goals” for the RPP. None of the other students agreed with this suggestion with one student (30) stating that “the whole aim of this is that we get what we need from the placements not what anyone else needs otherwise its just like any other thing that we have to do. This was great because we really could decide what we wanted to do”. Other students agreed with this comment.

“It was kind of funny really. I knew that there was nothing that I really had to do but I just kept finding things that I wanted to do. If you had said that we all had to do six endos and write six pages on a topic I think it would have changed the way I felt about the whole placement. I learnt heaps about all sorts of things and I agree with 27 – I reckon I'd get even more out of it if I went on a second placement”

Student 01 August 2002

Analysis of the reflective statements confirmed that students had gained more from the experience than they had anticipated. The following is an extract from one student’s reflective statement.

“I must admit I was quite anxious before I left Sydney as I had never really spent any time away from my family let alone in rural areas. When you asked us to define our goals all I could really think of was that I wanted to have fun and not miss my family so much. After I thought about it I realised that I really had lots of goals. I am not very confident when I am working on the clinic and I really want to get better and quicker. While I have been on the placement I have realised that I really can provide good treatment. Maybe its because the tutor didn’t know that I had failed some things at Uni but he was really positive about what I had done in his clinic. I should really have made that a goal because to be honest I find it very difficult to keep positive when I am at
Westmead because it seems like everyone is so much better than I am but maybe I'm not so bad. I think its going to make a big difference to how I work at Westmead now and my goal should have been to get more confidence”.

Student 10 August 2002

While those who attended the de-briefing session had achieved their goals, it was reported to me that one student (32) had had an “awful time” and had “hated every minute of it”. I established email and subsequent telephone contact with this student. She reported that she had not understood the roster and that she would be spending some of the time in Inverell, some distance from her partner. She reported that her accommodation had been poor and that she had been scared to leave her room at night. I spent some time discussing the situation with her and later, the local mentor. The student had not reported any adverse incidents or undesirable situations to either of us and it was therefore difficult to see how we could have intervened. Interestingly, despite these problems, the student’s career interest score increased from 5 (pre-placement) to 8 (post-placement). On graduating this student chose to work in a metropolitan teaching hospital.

Was the RPP a student-centred experiential learning opportunity?

As has been described in Chapters 7 and 8, and mindful of experiential learning theory described in Chapter 3, the RPP provided the students with an experiential framework on which to base their learning. The RPP 2002 provided opportunities for students to develop and achieve individual learning goals, supported reflection in and on action, and allowed students to self-assess. During group and individual interviews, it was apparent that all of the students believed that the RPP had been a positive learning experience.

In order to determine which elements of the RPP had significantly influenced their learning, students were asked to evaluate the various components of the program. Of the 26 students who submitted post-placement questionnaires, all agreed that the pre-placement briefing session, orientation program, clinical placements, academic
support, mentors and clinicians were ‘important’ or ‘essential’ for their learning. Eight of the students (30%) were ‘unsure’ whether the post-placement briefing had influenced their learning although eighteen (70%) considered this element to be ‘essential’ or ‘important’.

Self-assessment

Interestingly, thirteen students (50%) valued self-assessment as a learning element; of the remaining thirteen students, seven (27% of respondents) indicated that self-assessment was ‘not important’ to their learning.

During the interviews it became apparent that not all of the mentors had valued the self-assessment strategy. Two of the groups of students had not had any opportunity to discuss their self-assessments with the mentors and therefore perceived it to be of no real benefit to their learning. While the other students valued self-assessment, many described the support and feedback from mentors and clinicians that had apparently enhanced the value of this element. As the interviews progressed it was evident that the students perceived self-assessment as something that they should be able to do but that they had limited confidence in its value as an independent assessment tool. This student’s comments were typical.

“Its all well and good to do the self-assessment, I mean you have to know how to assess your own work, but really I’m not sure that we know how to do this well enough. I used really broad assessment criteria which made it easier and I did keep going with it but the comments and feedback from the dentists was far more important to me.

Student 14 August 2002

Several of the students believed that the RPP should not have been assessed as it was an elective option but appreciated the need for some form of assessment for a mandatory placement. Various alternative assessment methods were discussed during the interviews. When considering summative and formative options, the students were
evenly split between each of these options. Concerns were expressed that if the RPP were assessed summatively, the value of non-judgmental supervision and support would be lost. One student (24) stated that she felt “safe” asking for help and advice and that had she known that her assessment was going to “count” she might not have been so willing to ask for such support for fear of being failed.

Another student (09) considered that self-assessment would mean that everyone would pass so it didn’t really matter whether the assessment was summative or formative. He considered that if the RPP was going to include assessment from clinicians and mentors, it should be formative only. Several students commented on the variability of clinical support and suggested that assessment by clinicians was likely to be subjective and possibly “unfair”. This comment provoked discussion around the establishment of appropriate criteria and how these could and should influence the nature of the assessment. One student (30) described the development of assessment criteria for clinicians and mentors that were based on the self-assessment criteria defined by the students. He suggested that this would help to structure the assessment to fulfil academic requirements but that the students would still “get the benefits of safe learning”. He considered this to be a method to develop summative assessment that was in alignment with student goals.

Another student (11) suggested that I should assess their learning from the RPP and that would then mean that they could work in the clinics without being concerned about assessment. She also expressed concern that the clinicians and mentors might not provide “good assessment”. While several students agreed that I should provide an assessment, it was noted that it was impossible for me to do this when I was not present during the clinical placements. The students appreciated that this was a physical impossibility. One student (15) considered that my input was valuable but that it should not be the only element of any assessment.

During the majority of the interviews, students described the “unfairness” of assessment. The students were obviously challenged by the practicalities of
implementing valid and reliable assessment methods and during individual interviews many spoke frankly about their concerns.

"I know what you are saying about self-assessment and I think that we all do it. We haven't really had to think about this stuff before – the assessment is given to us and we just do it. It's great to have a say but really, I'm not sure that we have ever really thought about what we would do if we had input. I mean we all moan about how unfair assessment is but when we have to think about how we would do it differently it's hard....

You know that 31 didn't come to half the things he should have. When he was there he just sucked up to the dentists and they all thought he was fantastic. It's just so unfair. I know he didn't even bother to do the self-assessment or reflection but there's no price to pay. (I pointed out that it was difficult to enforce compliance on an elective program and that it was likely that he would not have learned as much from the RPP as others might have)......That's fine but he doesn't see it that way. He thinks its all a big joke and he said that he would have passed himself anyway if he could have been bothered. Its really annoying to be honest. He will do well but those of us who do take the whole thing seriously aren't credited for it"

Student 29 August 2002

As has been stressed previously, the participants in the RPP were educated within the traditional framework and had had little, if any, experience of self-assessment. It is not unreasonable to expect that students of the new student-centred BDent curriculum will approach learning in the RPP with the benefit of prior experience of self-assessment and experiential learning strategies.

With the benefit of experience and evaluation of the RPP from 2000 to 2002, and with reference to assessment methods used in the Graduate Medical Program at the University of Sydney, a proposal for future assessment was distributed to students and discussed during interviews. It was stated that this method would be formally trailed
during the elective RPP in 2003 and subject to evaluation and amendment, would be implemented for students participating in the mandatory RPP from 2004.

The assessment method proposed comprised;
- student self-assessment
- RPP coordinator assessment
- Clinical mentor assessment.

The students would determine the criteria for the first assessment and the criteria for the second and third assessments were based upon a review of the students’ self-determined criteria for 2002. These assessment forms are appended (Appendix 4).

There was unanimous agreement that the proposed assessments would be appropriate for future RPP students, several students, however, referred to the need for additional time and academic support when developing their own criteria. It was agreed that previous experience of self-assessment would have made the task easier and that the BDent students would have acquired the necessary skills and experience to implement the proposed method. While there was overwhelming support for the proposal during the interviews, students were advised to review the documents over time and were encouraged to comment further if required. There were no further comments received.

**Reflective Statements**

The evaluation of learning elements included reference to the reflective statements. One student (4%) described this as an ‘essential’ learning element, three (11%) considered the statements to be ‘important’, nine (35%) were ‘unsure’ of their value and the remaining thirteen (50%) considered the statements to be ‘unimportant’ or ‘irrelevant’ to their learning. It was apparent that while individual students considered the statements to be beneficial, the majority did not consider reflective statements as useful for their learning.
As described in Chapter 8, the RPP 2002 provided an opportunity to define the RPP structure for mandatory placements in 2004 with the RPP 2003 providing an opportunity for a final evaluation. Based on the feedback from the students, it was clear that the reflective statements were not valued as highly as I had anticipated. I therefore elected to return to learning contracts for future programs. The ability for participants to determine the aims, outcomes and process of learning and therefore assist with structuring of the placements has been described (188). The role of critical thinking in "personal and professional effectiveness" is also considered by Toohey (98) and based upon the described success in clinical settings (58), it was decided to develop learning contracts as the central element; this is included in the assessment documents appended. (Appendix 4)

Did the students learn through participation in the ADA NSW Risk Management session?

As in previous years, this element of the orientation was evaluated separately to fulfil stakeholder needs. An open and closed response questionnaire was used and all 32 students responded (100%). Responses to the fixed items are represented in Figure 8.

Figure 8: Student evaluation of Risk Management Session 2002 (n=32)
In the 2002 evaluation, students were specifically asked to identify the elements of the session that most influenced their learning. They consistently referred to the importance of student participation, the use of real-life cases to ensure relevance, the approachability and humour of the facilitators and the use of “plain speaking with no legal jargon”. Individual students acknowledged the value of small group work, the varied format of the session and the accompanying handouts.

Students were also asked to identify other learning strategies that could be included in the session. Only four students responded to this item, all of whom would have liked to consider additional real-life cases.

The Risk Management session is of obvious benefit to the students and the skills, expertise and enthusiasm of the facilitators is consistently recognised.

**Did the RPP staff support and inspire the students?**

The students greatly appreciated the support provided by the RPP staff. Of the 26 students who completed a post-placement questionnaire, sixteen (62%) described the mentors as ‘essential’ for their learning with the remaining ten students (38%) describing their role as ‘important’. The role of the supervising clinicians was also valued with ten students considering their role to be ‘essential’ and sixteen considering their role to be ‘important’. During interviews it transpired that the level of support provided by both mentors and clinicians had been variable. One group of students saw very little of their mentor and stated that, “we felt like we were a nuisance, taking him away from all of the important things that he had to do”. The career interest scores before the RPP for these three students were 10, 10 and 7. After the RPP the scores were 9, 7 and 7 respectively. The first student in this group pursued a rural career when he qualified and it was apparent that he had a high level of interest in a rural career from the outset. It was impossible to determine where the other two students had chosen to work; colleagues assume that they have moved overseas.
Overall the students were very satisfied with the support that they received and fourteen students (54%) describing their mentors as ‘one of the three best things about the RPP’.

While it is difficult to quantify the relative contributions made by each of the elements of the RPP, the impact of the program on career interest scores provides an indication of the inspiration provided by the staff involved. This is considered later in this chapter.

**DATA COLLECTION AND ANALYSIS**

Data collection

All 32 students completed pre-placement questionnaires however only 26 students completed post-placement questionnaires. Individual interviews were conducted with all students during the RPP and group interviews were held with the 26 students who attended the post-placement briefing and who submitted questionnaires, self-assessments and reflective statements.
Student familiarity with rural lifestyle

The participating students reported that they were ‘unfamiliar’ with rural lifestyle with 28 of the 32 respondents (87%) reporting that they had spent a total of less than one month in rural Australia. All of these students had been educated in regional or metropolitan areas and had spent some of their holidays in rural locations.

Four (13%) students had spent most of their lives in rural areas. Of this group, two had been educated at a primary and secondary level in their rural home town while two had received primary education in a rural location but had completed their secondary education in a regional location. These students are considered further in Chapter 11 of Phase 3.

Student attitudes to rural practice before and after the RPP

Before the RPP, the most attractive features of practising dentistry in a rural area were perceived as being part of a small friendly community (ranked first), the rural lifestyle (ranked joint second) and the increased breadth of clinical experience (ranked joint second). These remained the three major advantages after the RPP. It was interesting to note that students did not consider professional support as being an attractive feature before the program but after the program, this was the fourth ranking advantage. This would support earlier observations that the staff involved with the RPP provided professional support for the students. It can also be inferred that these students perceive that this professional support would be available for them as new graduates. These findings are summarised in Table 18.
Table 18: Perceived advantages of a rural career before and after RPP 2002

<table>
<thead>
<tr>
<th></th>
<th>Frequency of response</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-RPP</td>
<td>Post-RPP</td>
</tr>
<tr>
<td>Being part of a small, friendly community</td>
<td>26</td>
<td>21</td>
</tr>
<tr>
<td>Rural lifestyle</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>Increased /broader range of clinical experience</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>Ability to provide care where none exists</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Increased remuneration</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Improved employment opportunities</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Professional support</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Decreased cost of living</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

As in previous years, students also listed the perceived limitations of a rural career. These are summarised in Table 19. The major perceived limitation to a rural career is the distance away from family and friends, ranked first before and after the RPP. It is noteworthy that the number of students who considered this to be a limitation actually decreased after the program.

Students perceived the limited range of social activities to be a significant limiting factor (ranked third before the RPP and second after the RPP) however the number of students reporting this limitation reduced markedly. Overall, there were fewer limitations listed after the RPP than before (67 and 83 respectively). Professional isolation remained a perceived limitation after the program although as described above, nine respondents actually perceived the professional support to be a major advantage of a rural career. These findings are summarised in Table 19 and discussed further in Phase 3.
Table 19: Perceived limitations of a rural career before and after RPP 2002

<table>
<thead>
<tr>
<th></th>
<th>Frequency of response</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-RPP</td>
<td>Post-RPP</td>
</tr>
<tr>
<td>Distance from family and friends</td>
<td>27</td>
<td>19</td>
</tr>
<tr>
<td>Professional isolation</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Limited continuing education opportunities</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Lack of social activities</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>Independence</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Distance / Cost of travel</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Limited education for children</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Cultural isolation/racism</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Limited range of experience</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Distance from ocean</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Problems returning to city</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Weather</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Having a community identity</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Student interest in a rural career

Figure 9 demonstrates the pre- and post-placement career interest scores provided by the students. As noted previously, six students did not complete the post-placement questionnaires although this group did supply their career interest score on request.
The mean interest scores were $7.38 \pm 1.7$ before the placement and $7.59 \pm$ after the placement. A paired t test provides a t value of $-0.677$ with 31 df and a corresponding significance level of 0.503. There was therefore no significant impact on career direction for the 2002 cohort. Additional data analysis is supplied in Chapter 11.

Student contribution to oral health care

A review of the 26 submitted student logbooks demonstrated that students provided a range of restorative treatment for local residents although the vast majority of these services were simple restorations, scaling and polishing, and dental extractions. Table 20 summarises the clinical experience obtained by students during the RPP 2002.
Table 20: Clinical experience during RPP 2002

<table>
<thead>
<tr>
<th>Area Health Services in Far West Oral Health Network (data collected by students during two RPP)</th>
<th>Area Health Services in Northern Oral Health Network (data collected using ISOH during one RPP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWAH n=7</td>
<td>MAH n=7</td>
</tr>
<tr>
<td>Total number of occasions of service</td>
<td>124</td>
</tr>
<tr>
<td>Average number of occasions of service</td>
<td>18</td>
</tr>
</tbody>
</table>

In the areas with fewer students per placement, the amount of clinical experience obtained was noticeably higher than in those areas hosting more students. This is expected as the program utilised existing staff and infrastructure and shared this between the students present.

The Network Manager of Northern Oral Health Network provided a comprehensive evaluation of the program and noted that, “All areas agreed that any cost or negative effects on activity were outweighed by the overall benefits of the program. However it is acknowledged that any future cost-benefit analysis would require better data, agreed methodology and consideration of the period and circumstances under which any activity down turn or costs were sustained”. The initial cost-benefit analysis indicated that the RPP cost the Network approximately $5,435 to host the 12 students. This includes accommodation costs, opportunity costs and transport and equates to approximately $450 per student for the two-week period.

The effects of the RPP on clinical activity, as measured by occasions of service (OOS), demonstrated that in New England AHS where two students were placed, the OOS was 248 during the preceding nine-day period and 247 during the RPP. There was
therefore virtually no impact on OOS in this area. Similarly, in Hunter AHS, the OOS reduced from 1553 to 1428. It was noted that, “there were two sessions of non-clinical activity. If this is considered then the fall in activity during the period of the RPP is negligible”. In Northern Rivers AHS, there was a significant decrease in the level of activity from 311 to 233 OOS. The mentor in Northern Rivers spent considerable time providing tutorials for the students resulting in decreased clinical opportunity. There were no additional data submitted by Mid North Coast AHS.

As the students collected the data in the Far West Network, it was not possible to compare OOS data as above. One mentor in this network admitted that, “we are not too bothered about the productivity to be honest. Its great that they can work but really we see this as a long-term investment. Nine days is not going to make a huge difference over a year anyway”. A second mentor in this network observed that, “we have empty chairs so the output is bound to increase. Where the student displaces a DO it may be different”.

The variability of data collection precludes a detailed cost-benefit analysis and attempts were made to standardise such data collection in future RPP plans.

As the RPP involves numerous staff and various clinical experiences, some of which are as observers, it would be unlikely to result in increased clinical output for the participating clinics. It is not unreasonable to expect the students to make a more significant impact during longer placements.

Staff feedback

As in previous years, the staff were extremely positive about the RPP and the students. Comments were made about individual students and the group as a whole. Those clinicians who had been involved with previous RPP students were understandably less forthcoming in 2002.
"Her skills were of a standard beyond what I had expected. She fitted in well, was easy to get along with and very cooperative with staff. I would be more than happy to give her a reference when she graduates for any position for which she may apply"

Letter from F July 2002

"The staff that tutored the students generally found the experience enjoyable and rewarding. All Areas were enthusiastic for Dental Services to continue their involvement in the RPP. The mentors are enthusiastic about participating in the role again"

Northern Network Manage September 2002

The Northern Network Manager also noted that the students were “very competent” and that they displayed clinical skills beyond those expected. The “high degree of professionalism” that the students demonstrated was recognised by the staff involved.

Twelve of the tutors involved in the RPP 2002 elected to submit CVs for Honorary appointments with the Faculty. All of these staff were employed in the public sector. No private dentists applied for such titles despite their awareness that they were available in recognition of their contribution. As described in Chapter 8, the Department of Continuing Education maintained its commitment to the ‘Rural Update Program’ and held a two-day program in Coffs Harbour later in 2002. This was very well attended and received excellent evaluation.

**Improvements to the RPP**

Students submitted recommendations for improvements to the RPP. Of the 26 respondents to the post-placement questionnaire, fourteen (54%) would have liked the use of a car, ten (38%) wanted improved cooking facilities, three (11%) would have liked a longer placement and four (15%) would have liked more clinical time. These recommendations were noted to inform the development of RPP 2003.
Twenty-two students (85%) stated that they would recommend rural practice to other students. Four considered that this was a personal choice and that they would not wish to recommend rural practice unsighted.

Recommendations from the RPP 2001 were reviewed and it was pleasing to note that in 2002, there were no adverse comments relating to the orientation program.

**Strengths of the RPP**

Students were again asked to list the ‘three best things’ about the RPP and this information is summarised in Table 21.

These strengths are very similar to those reported previously. The need to ensure that all students gain clinical exposure during their rural experience is evident. The students also appreciated the diversity of the program and the support provide to them by the staff. These elements were considered to be essential elements during planning for the RPP 2003.

**Table 21: Perceived strengths of RPP 2002**

<table>
<thead>
<tr>
<th>Strengths of the RPP 2002</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting more clinical experience</td>
<td>21</td>
</tr>
<tr>
<td>Experiencing rural lifestyle</td>
<td>18</td>
</tr>
<tr>
<td>Range of locations/activities</td>
<td>14</td>
</tr>
<tr>
<td>Approachability of clinicians</td>
<td>14</td>
</tr>
<tr>
<td>Meeting new people</td>
<td>10</td>
</tr>
<tr>
<td>Organisation of the Program</td>
<td>5</td>
</tr>
<tr>
<td>Balance between work and recreational time</td>
<td>5</td>
</tr>
<tr>
<td>Orientation Program</td>
<td>4</td>
</tr>
<tr>
<td>Opportunity to fly with RFDS</td>
<td>4</td>
</tr>
<tr>
<td>Transport</td>
<td>2</td>
</tr>
</tbody>
</table>

**Reporting**

The RPP received considerable exposure in 2002. Several local television and radio stations conducted interviews and ran stories on the rural dental workforce crisis. Professional reporting was conducted along the lines of 2002 with favourable
outcomes. There was consensus that the RPP 2002 report was accurate and the draft recommendations contained therein were valid (see Phase 3).

The University Department of Rural Health (UDRH) maintained its high level of support for mandatory rural placements and the UDRH at Lismore became actively involved in discussions. The Oral Health Branch of NSW Health (OHB), on the recommendation of the Minister for Health, committed $8,000 to the program on an ongoing basis. It was agreed that this would be accessed by the AHS hosting the students and would be used to offset accommodation and transport costs. The New South Wales Branch of the Australian Dental Association (ADA NSW) and Guild Insurance and Financial Services (GIFS) pledged continued support for both the Risk Management session and the travel bursaries. They resolved to provide up to $25,000 for the RPP 2003.

Reporting to the Year 4 Development Group at the Faculty of Dentistry resulted in progression of the research associated with the RPP. It was originally anticipated that this project would conclude at the end of the RPP 2002 with final recommendations for mandatory rural placements for final year students. In the true nature of action research, the various discussions (see below) held within the Year 4 Development Group necessitated further investigation. The research model used throughout this thesis was still valid although this is not represented pictorially from this point in the thesis. The additional factors that required consideration were;

**Increased demand for the RPP in 2003**

In 2003, forty-eight applications were received. Early in 2003, thirty six places had been negotiated working with the seven AHS sites developed in 2002. While it was possible to limit the number of places to 36, I determined that additional places should be made available.
Requirement to accommodate two student cohorts in 2004
In addition to the final year BDent students in 2004, there would also be a final year cohort from the BDS curriculum. I decided that it was essential to offer the RPP experience to both groups; BDS students would be offered elective places and BDent students would participate in mandatory placements.

Provision for mature students who were unable to travel far from home
Students of the BDent curriculum were on average, older than their BDS contemporaries. Several students worked to support their education and a few had young families. It was therefore important to consider placements within commutable distances for these students.

Expanded rural placements
The RPP provided an opportunity to spend a short time in rural NSW however staff and students indicated that lengthier placements would have advantages in terms of both student experiential learning and community service provision. I submitted a proposal to the Year 4 Development Group that additional rural placements might provide significant educational and practical opportunities.

Increased costs associated with placements
The increased number of places required in 2004 would inevitably lead to greater associated expenses. With large groups travelling to distant sites, the option of providing orientation in Sydney required investigation.

Student rosters
As Year 4 curriculum planning proceeded, it became apparent that there were various timetabling possibilities. The relative merits of students attending en bloc or in smaller groups throughout the year were discussed. At that time, the largest group that had attended comprised 12 students. The value of smaller groups had been documented however there was no evidence to support or deny a large group RPP of 64 students.
Curriculum planning continued based upon the small group model however further investigation was required to inform future curriculum planning.

It was therefore important to strengthen the existing rural placement opportunities and develop new clinical placements to cover all eventualities. Additional research questions were thus generated and can be summarised as;

- Can additional RPP clinical placements be developed?
- What are the options for closer placements for mature students?
- Are longer placements achievable and/or desirable?
- Is a Sydney-based orientation appropriate?
- How many students should attend at one time?

Chapter 10 describes the outcomes of the RPP 2003 with reference to both the existing research objectives and the areas identified above.

**Graduate employment of RPP 2002 students**

Thirty of the students (94%) who participated in the RPP 2002 provided employment details over January and February of 2003 and these were categorised using the ARIA (153). The remaining two did not respond to any form of communication and their peers did not know where they had chosen to work. These students had not submitted post-placement questionnaires.

Of the 32, nine (28%) were employed at one of the two metropolitan teaching hospitals. Nine had chosen to work in metropolitan Sydney and one in metropolitan Brisbane (total 31%). Four other students (13%) had moved interstate; three of these students worked in Rural (R) areas and one worked in a Moderately Accessible (MA) area. Seven (22%) students had chosen to work in rural areas of NSW; this entire group worked in MA areas. In total, eleven students (35%) were employed in MA or R areas of Australia.
Of this group of eleven, three (28%) had increased career interest scores after the RPP, and one had a decreased career interest score from 10 to 9. Ten (91%) students had recorded pre-placement interest scores of 7 or higher with the remaining student indicating a pre-placement interest score of 4. The entire group had interest levels of 7 or higher after the RPP, with seven (64%) recording scores of 9 or 10.

Of the eleven students who indicated a career interest score of 9 or 10 after the RPP, seven (64%) chose to work in rural areas on graduation.

These outcomes are analysed and discussed further in Phase 3.
CHAPTER 10

RURAL PLACEMENT PROGRAM 2003

RPP STRUCTURE

As noted in Chapter 9, there was a need to consider additional placement locations to accommodate both the 2003 BDS cohort and the 2004 BDS/BDent cohort (a). It was also necessary to consider placements closer to Sydney (b), opportunities for longer placements (c), optimum group size (d) and Sydney-based orientation (e). The plans for the RPP 2003 were designed to address each of these issues as follows.

a) Development of additional placement locations

In addition to the well-established Broken Hill program, involving Orange and Dubbo, it was decided to continue with the Northern Network Placements. This provided a total of seven clinical placement locations. The appointment of an acting Network Manager led to a review of the practicalities of student placement in 2002 and resulted in additional places being available in 2003. A total of 16 students were accommodated in the four Area Health Services comprising the Northern Network. With 12 student places available in each of the Broken Hill programs, a total of 40 places were offered in established locations.

In an attempt to develop greater opportunities for more accessible placements (see below), support was requested from the South West Oral Health Network. With the support of the Network Manager, four students were accommodated in Albury and four in Queanbeyan. A total of 48 places were offered to BDS students in 2003. All of these students attended the RPP during the four-week mid-Semester break. An overview of the student placements is provided in Table 22.
**Table 22: RPP overview and student placements 2003**

<table>
<thead>
<tr>
<th>Location</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broken Hill</td>
<td>Four students</td>
<td>Four students</td>
<td>Four students</td>
<td>Four students</td>
</tr>
<tr>
<td>Orange</td>
<td>Four students</td>
<td>Four students</td>
<td>Four students</td>
<td>Four students</td>
</tr>
<tr>
<td>Dubbo</td>
<td>Four students</td>
<td>Four students</td>
<td>Four students</td>
<td>Four students</td>
</tr>
<tr>
<td>Newcastle</td>
<td></td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tamworth</td>
<td></td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coffs Harbour</td>
<td></td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lismore</td>
<td></td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queanbeyan</td>
<td></td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albury</td>
<td></td>
<td>Four students</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mentors were identified and supported in the development of an experiential framework for the students. Fortunately the three Broken Hill program mentors from 2002 were committed to supporting the RPP 2003 and had sufficient experience to develop these placements independently. Each of these placements was reviewed and mentors were provided with support as required. In the Northern Network, two of the mentors in 2002 stood aside and new mentors were identified. Initial support was provided and the Network Manager and other mentors in the Network offered considerable additional support. New mentors were identified and supported in the two additional placements venues. The distances between each of these placements and the difficulties associated with providing personal academic support on a fractional appointment meant that the academic support for the mentors was largely provided through teleconferencing. This was a limitation of the RPP 2003.

Mindful of the outcomes from the RPP 2002, a venue for the orientation required considerable thought. It was obviously physically impossible for the orientation program academic staff, including myself, to be in two or more places at one time. The value of the content of the orientation had been demonstrated in previous RPPs and there was a personal commitment to retaining this structure. Students had also valued the learning and peer support provided by attending the orientation in larger groups before the smaller group clinical placement. It was determined that large group orientation was required for the RPP 2003. The orientation for the Broken Hill programs, commencing in weeks 1 and 3 (Table 21), continued in Broken Hill as in
previous years. The major dilemma related to the provision of a large group orientation for the students attending the six placements organised commencing week 2.

As described in chapter 9, opportunities to involve the UDRH at Lismore had been identified although the practicality of transporting 24 students to Lismore and subsequently to their distant clinical placements was impractical. Transport availability was extremely limited and prohibitively expensive. In addition, there was insufficient accommodation available in Lismore for all 24 students. An invitation to hold the orientation in the South West Network was received although this proved similarly impractical. The option of holding the orientation closer to Sydney was investigated but the costs of accommodation and transport were excessive. Mindful of the feedback from 2002, it was therefore decided to hold the orientation at Westmead Centre for Oral Health. This was an inexpensive option and minimised transport needs. In addition, academic staff based in Sydney were able to contribute to the program at minimal personal inconvenience. In order to maximize the opportunities for clinical experience, it was decided to hold the Sydney-based orientation on the first Sunday and Monday of the second placement. Tuesday was allocated for student travel and local orientation with clinical placements commencing on the first Wednesday.

b) Placements closer to Sydney

In 2002, the Newcastle placement had provided potential opportunities for students with family commitments to be placed closer to Sydney. While there were no such students in the 2002 cohort, two students participating in RPP 2003 had such commitments. They were offered places at Newcastle, but both students elected to travel further afield and in one instance the student took family with them. In light of this admittedly limited experience, the need to develop a second closer venue was not considered to be a high priority.
c) Longer placements
While curriculum constraints precluded lengthier placements, it was important to ascertain whether RPP students in 2003 would have appreciated longer or additional rural experience. This issue was discussed at length in the post-placement briefing and is considered later in this chapter.

d) Group size
As indicated in Chapter 9, BDent curriculum development had raised various possibilities for the mandatory placements to be offered in 2004. The options for consideration can be summarised as;

- Whole year orientation with all students subsequently attending placements concurrently. The timing of this en bloc placement and the venue for orientation were additional elements to be considered,

- Whole year orientation at the commencement of year 4 with subsequent small group placements throughout the year, and

- Smaller group orientation integrated with the clinical placements and staged throughout year 4.

While previous RPP experience supported the third option, it was important to consider larger group orientation. With 24 students attending the RPP commencing in week 2, an opportunity was provided to investigate larger group orientation.

e) Sydney-based orientation
The benefits and limitations of group orientation in a rural location have been described in chapters 8 and 9. With the decision to orientate the 24 students who commenced their RPP in week 2 in Sydney, came the opportunity to evaluate the relative merits of Sydney-based orientation.
Introduction of RPP 2003 to students

Early in 2003, all final students were informed of RPP opportunities. It was explained that 40 places were available (see above) but that it was likely additional placements would become available. Students were invited to submit applications for places. The RPP 2003 was once again an entirely voluntary option. A total of 48 applications were received and accepted. It was at this stage that formal processes commenced to approve the clinical placements in Queanbeyan and Albury. Memoranda of Understanding were signed and the Dental Board of NSW accredited the clinical facilities for student placement.

Pre-placement briefing

46 of the 48 students (96%) attended the pre-placement briefing session held in Sydney. The two non-attendees were contacted by email to ensure that all aspects of the briefing session were addressed.

The aims of this session were as in 2002;

- to address student concerns about practicalities of RPP
- to recruit students as co-researchers and gain their consent to participate in RPP research
- to collect pre-RPP data
- to determine motivating factors for involvement
- to introduce and commence development of the assessment strategy described in
Student concerns about practicalities

As in previous years, there were numerous queries that related to the practicalities of the RPP. Despite being provided with transport arrangements and accommodation details, students appeared to require reassurance. As there were 46 students travelling throughout NSW, responding to these queries took an inordinately long time. The need to discuss these aspects of the program was apparent. In previous years, however, this process had taken considerably less time, largely due to the smaller group size.

Recruitment of students as co-researchers

All of those present willingly agreed to support ongoing research into the RPP and recognised that their predecessors had had a substantial input to, and influence on, the RPP 2003. The students were again informed that their participation in this research was entirely voluntary and that if they chose to refrain from participation they would not be subject to any form of bias or prejudice either during or after the RPP. The two students contacted by email also agreed to participate although they chose not to submit pre-placement questionnaires.

Collection of RPP data

As in previous years all students were asked to complete a pre-placement questionnaire. One student failed to complete the questionnaire and the two non-attendees did not complete questionnaires. There were therefore 45 (94%) completed questionnaires available for analysis. Despite requests for these students to provide their career interest scores, none were forthcoming. This was the first year when there had not been a 100% response rate for the pre-placement questionnaire.

Motivating factors for involvement

While it was anticipated that the motivating factors would be in alignment with previous years, it was possible that the larger number of placements available would result in a less rurally-oriented group attending. Table 23 shows the motivating factors listed by the students.
Table 23: Motivating factors for students attending RPP 2003

<table>
<thead>
<tr>
<th>Motivation to attend RPP 2003</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>To learn about dentistry in a different environment</td>
<td>53</td>
</tr>
<tr>
<td>To learn about dental health issues in the country</td>
<td>31</td>
</tr>
<tr>
<td>To experience rural lifestyle</td>
<td>28</td>
</tr>
<tr>
<td>To get more clinical experience</td>
<td>26</td>
</tr>
<tr>
<td>To assist in career decision-making</td>
<td>16</td>
</tr>
<tr>
<td>To have a holiday</td>
<td>13</td>
</tr>
<tr>
<td>To meet new people</td>
<td>8</td>
</tr>
<tr>
<td>To have a new life experience</td>
<td>5</td>
</tr>
</tbody>
</table>

In previous years, the major motivating factor for students was to ‘experience rural lifestyle’, with a lesser emphasis on professional practice. The 2003 cohort had a greater focus on obtaining clinical experience and a greater emphasis on ‘having a holiday’. A detailed analysis of this data is presented and discussed in Phase 3.

Assessment strategy

As described in chapter 9, a final assessment strategy was developed and evaluated in 2003. The three components of the assessment strategy are appended (Appendix 4).

The pre-placement briefing provided a background to this assessment strategy with particular emphasis on the use of previous students’ self-assessment criteria in developing the criteria for both the clinical mentor and RPP coordinator assessments. The students, working in small groups, were encouraged to review and debate the criteria. There was an acceptance that the forms were valid and students then spent time developing the criteria for their self-assessments. In contrast to previous years, there was no real debate and students were reluctant to discuss their opinions and reflections.

One student (35) stated that the self-assessment forms were “fair enough”, but the majority of students were visibly disinterested in the self-assessment requirement. Several prompting questions were asked using examples of clinical situations that might arise. An example of such a question was “What if you are doing particularly
difficult treatment that is new to you and you require considerable support to achieve the desired outcomes? Is it fair for you to be awarded ‘unsatisfactory’ in this situation?” While there appeared to be small group whispered comments, only one student (09) was prepared to make the observation that “Yes it is fair because that’s what the criteria say but this might only be one such incident and your other clinical experience might compensate”. She went on to discuss the selection of clinicians to actually complete the assessment; she considered that there was a real opportunity to ensure that a satisfactory grade was achieved through prudent selection of assessor. Further comment was not elicited during this pre-placement briefing. Students completed the self-assessment forms during the briefing session and were strongly encouraged to contact the coordinator for comment and validation on completion. This session was in marked contrast to previous pre-placement briefings where discussion had been lively and there had been numerous personal contributions to the debate.

This observation was substantiated when the self-assessment criteria were reviewed after the session. Of the 46 students attending the briefing, 35 (76%) submitted their self-assessment forms for comment as requested. Of these, ten (29% of those who submitted and 21% of whole cohort) described five self-assessment criteria, nineteen (54% of those who submitted and 40% of whole cohort) described three or four self-assessment criteria and the remaining six (17% of those who submitted and 12% of whole cohort) described the various assessment domains but did not provide complete criteria for their self-assessment. Of the ten students who defined five self-assessment criteria, seven had used the criteria documented for the mentors and RPP coordinator as their own criteria.

The apparent lack of initial interest in self-assessment was disappointing, as was the lack of response to the comments that the coordinator provided. It was determined that the self-assessment strategies would be developed and refined during the orientation program. This apparent lack of interest in self-assessment may have been due to limited previous exposure to this methodology as several students described their experiences as varied and apparently of little practical value. One student (26) stated that, “when we have done this before it was obvious that it didn’t really count for anything and the tutor had the real say in our assessment. It’s just been a token gesture
really". The size of the group also had an impact on the acceptance of the methodology. It was difficult to ensure that all students were supported to the level that had been provided in previous years, purely due to timing issues.

At the end of the pre-placement briefing and with prior approval from the mentors, contact details were provided to each of the students present. The groups were encouraged to nominate a correspondent who would liaise with the mentors prior to the RPP. Of the twelve RPP groups (three in weeks 1-2, six in weeks 2-3 and three in weeks 3-4) ten groups established ongoing email contact. Two weeks prior to the RPP commencing, two groups had not complied with this request. This failure necessitated numerous telephone calls and memos in an attempt to determine whether the students actually intended to attend the RPP. It seemed that the lack of contact was due to a lack of perceived need for contact.

**Program structure**

As indicated previously, the RPP 2003 comprised orientation and subsequent clinical placements. The RPP took place over a two-week period with two days allowed for orientation, two days allowed for travel and eight days allocated to clinical placements.

**Orientation Program**

Three separate orientation programs were held in 2003. Each comprised the following sessions;

- Area in Context,
- Cross-cultural workshop,
- Risk Management, and
- Learning Workshop.

The orientation programs based in Broken Hill were supported as in previous years and there were no adverse events. There was 100% attendance at every session. The orientation in Sydney was held on the Sunday and Monday of week 1 and the Faculty of Dentistry organised room hire and appropriate refreshments. Once again, personnel
representing the ADA NSW and GIFS facilitated the Risk Management session. A newly recruited practitioner with a wealth of experience in Indigenous oral health care led the ‘Cross-cultural workshop’, the oral health Network Managers from Northern and South Western Networks presented the ‘Area in Context’ session and the RPP coordinator facilitated the ‘Learning Workshop’.

The attendance was extremely disappointing and can be summarised in Table 24. In addition, one student fell asleep on the floor during the ‘Area in Context’ session and two students left before the end of the ‘Learning Workshop’. Two students did not attend any element of the orientation program. These individuals and other non-attendees were contacted and it was apparent that they did not perceive the non-attended sessions to be of any value to them. They were informed that these details would be recorded on the RPP coordinator's assessment but this was of little or no concern to them as the RPP was an elective curriculum component.

<table>
<thead>
<tr>
<th>Day</th>
<th>Session</th>
<th>Number of students present</th>
<th>% present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday morning</td>
<td>Learning Workshop</td>
<td>42</td>
<td>88%</td>
</tr>
<tr>
<td>Sunday afternoon</td>
<td>Area in Context</td>
<td>36</td>
<td>75%</td>
</tr>
<tr>
<td>Monday morning</td>
<td>Cross-cultural workshop</td>
<td>44</td>
<td>92%</td>
</tr>
<tr>
<td>Monday afternoon</td>
<td>Risk Management</td>
<td>41</td>
<td>85%</td>
</tr>
<tr>
<td>Monday evening</td>
<td>ADANSW/GIFS Reception</td>
<td>12</td>
<td>25%</td>
</tr>
</tbody>
</table>

While the orientation in 2002 had not been as successful as in previous years, the orientation experience in 2003 was even less positive.

The learning workshop provided students with opportunity to develop their learning contracts. Full details of the rationale and requirements for the contract had been distributed during the pre-placement briefing in the form of a RPP Handbook. Working in groups of 3 and 4, students developed and documented individual learning
contracts. This element of the session worked well with all 42 attendees developing clearly defined contracts. As each student had to be individually supported, the entire session was taken up with this element. It had been determined previously that the session would allow further consideration of self-assessment criteria. There was insufficient time for this to happen.

While the observations made at the time were overwhelmingly negative, in hindsight, there were many students who did attend all elements of the orientation and who were enthusiastic in their approach. It is likely that the increased number of places available meant that the student participants were less strongly motivated to attend and the increased number of students who reported that one of their motivating factors was ‘to have a holiday’ supports this interpretation.

"NIGHTMARE!!!! Very embarrassing to have experts and less than interested students. Great shame as many of them are extremely interested but the disruptions and poor attendance seem to have affected the whole group. It feels as though there is a general indifference. It doesn’t count therefore we don’t bother. Only a dozen for free drinks too!!! So what did I learn? Larger group don’t participate as much. If it’s important then the assessment has to count for something. Many students not that interested in self-assessment – need to work with them on a one-to-one basis if I believe they need to do this. Sydney orientation not an option but then again, maybe they are not and it is not relevant to them BUT consistency of feedback in previous years would support it being relevant. Can I let them come and go as they feel the need ie really student-centred?? It’s an option but when staff travel so far to support etc then this is not really an option. In reality, when they are in Broken Hill there isn’t really any choice and they all enjoy/learn/provide positive feedback. Maybe the non-attendees don’t really think about the relevance and just make assumptions. Sunday might be an issue but the BH mob are happy enough to travel and work on Sundays. Perhaps the move away from formally recognising reflection has had an impact? Think that a lot of it is because the personal touch has decreased. It’s a lot easier to work with a small captive
audience. Bottom line is that I think that orientation is important and students from previous years agree. If it is important then they have to attend. Policing???? Difficult in Sydney – maybe when RPP is non-elective then my part of the assessment will matter and they would show up? If we had been away from home I suspect that they would have shown up anyway. Smaller groups mean that students are visible. Difficult with bigger groups of unknown students to actually know who is or isn’t there! This has really confirmed my gut feelings re the camaraderie, small group, high level of academic support. NOWHERE NEAR ENOUGH TIME!

DJC July 03

Clinical work and rosters

The range of clinical opportunities provided was unique to each placement location. It was apparent that all but one of the mentors had focused on providing students with optimum clinical experience in a wide range of locations and with the support of numerous clinicians. In one placement, the mentor determined that the students should not participate in private practice visits and I was unaware of this situation until the RPP had finished.

As in previous years, students were encouraged to amend their rosters in collaboration with the mentors. The two new clinical placement mentors were particularly receptive to this and through email communication, worked with the eight students to ensure that the students’ perceived needs were being met.

In order that the clinical productivity could be measured, students were required to maintain a logbook to validate ISOH (Information System for Oral Health) data.

Social opportunities

While there were numerous social opportunities provided at the clinical locations, the students who attended the Sydney orientation had little inclination to attend evening functions. In advance of this orientation, students were offered various options; the
ADA NSW / GIFS reception attracted notional interest however only 12 students (25%) actually attended this function.

**Learning and assessment requirements**

Students were aware that on completion of the RPP they would be expected to submit;
- evidence that they had fulfilled their learning contract,
- a completed self-assessment,
- a logbook of experience, and
- a completed clinical supervisor assessment.

The RPP coordinator assessment would be finalised on review of each of these items following the post-placement briefing.

**Post-placement briefing**

This session was held in Sydney approximately one month after the final RPP. Surprisingly, this session was attended by 46 of the 48 participants. The two students who failed to attend the pre-placement briefing and the orientation, did not attend. These students did not submit any of the RPP requirements however the mentors related that the students had attended the clinical placements! Despite numerous and varied attempts to contact these two students, there has not been any opportunity to interview them.

The 46 attendees submitted various files and journals both at this meeting and subsequently by post and electronic means. Only two of the participants (4%) submitted all of the four requirements listed above; Table 25 shows the rate of return for each element.
Table 25: Student submission of required RPP elements in 2003

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Number submitted</th>
<th>% of cohort (n=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence of fulfilled learning contract</td>
<td>12</td>
<td>25%</td>
</tr>
<tr>
<td>Self-assessment</td>
<td>35</td>
<td>73%</td>
</tr>
<tr>
<td>Log book</td>
<td>18</td>
<td>38%</td>
</tr>
<tr>
<td>Clinical mentor assessment</td>
<td>46</td>
<td>100%</td>
</tr>
</tbody>
</table>

This would suggest that of these requirements, the students placed greatest value on the assessment provided by the clinical mentor. The low return rate of logbooks may have related to the awareness that data were being collected using ISOH. A total of 31 (65%) students completed post-placement questionnaires. Those who did not complete the questionnaires were contacted by email and asked to provide career interest scores. A total of 45 (94%) of students ultimately provided these.

Staff development

Issues related to staff development did not improve in 2003 with the addition of two more clinical placement locations. It was impossible to visit all locations and provide the degree of support required. This situation was exacerbated by the change of key personnel in two of the established locations. Despite written advice and information being provided, the mentors and clinicians relied heavily upon verbal information provided over the telephone. There was undoubtedly a need for increased site visits however the combination of distant locations, a lack of funding for travel and the time constraints imposed by a fractional academic appointment meant that this did not occur. All of the mentors were strongly encouraged to contact the coordinator for additional academic support and many availed themselves of this.

"Supporting everyone everywhere is even more of a problem this year. What can I do? The verbal support is undoubtedly appreciated but I don’t believe that it is enough. I can’t get everywhere and I’m not sure that all of the travel costs are recoverable. Should have budget or clear ‘rules’ for travel. Can’t afford to do the job and be away all the time – I’m paying for the privilege!"
Other option is to get all mentors to attend central staff development but then there’s cost to them; travel, accommodation, opportunity costs. Big argument for RPP is minimal cost to AHS. If I ask all to attend then this kind of defeats this. Broken Hill, Dubbo and Orange works best – probably because its where it all started and I was there to personally drive and support. Maybe I just need to accept that over a two-week period, differences and personal interpretation are OK but that if longer placements are introduced then I will have to prioritise staff development on site. Will be interesting to see how differences impact on outcomes.”

DJC April 03

STAKEHOLDERS

As summarised at the end of Chapter 9, all stakeholders maintained their commitment to the RPP.

Faculty of Dentistry

The Faculty of Dentistry re-advertised the 0.4 FTE position for RPP coordinator, co-funded by the University Department of Rural Health.

University Department of Rural Health

The UDRH at Broken Hill appointed a new student coordinator who assisted in the site arrangements. The coordinator’s travel to and from Broken Hill was supported and one trip to Lismore was also funded. The UDRH at Lismore participated in discussions relating to the Northern Network placements. It was suggested that, in the absence of accommodation for groups of 12 students, the orientation program should be delivered to the clinical locations through videoconferencing.

Oral Health Branch of NSW Health (OHB)

The OHB provided a central fund of $8,000 to defray accommodation costs in each AHS.
ADA NSW

The ADA NSW and Guild Insurance and Financial Services (GIFS) provided $25,000 to pay for students’ travel expenses. All of the staff involved with the RPP in 2002 maintained their commitment to the three Risk Management sessions planned for 2003.

Dental Board of NSW

With the introduction of another two locations, the Dental Board accredited the clinical facilities for student placement.

Research Cycle 4

Research questions

The original research questions associated with the RPP were defined as;

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

In chapters 8 and 9 I have described the development of a table of thematic concerns (4) based on input from RPP co-researchers. Over the previous three action research cycles, additional research questions had been generated. These can be listed as:

4. Did the RPP staff support and inspire the students?
5. Were honorary titles an incentive to become involved with the RPP?
6. Did any staff recruit as a consequence of the RPP?
7. Have the stakeholders supported the Faculty?
8. Did the students learn through participation in the ADA NSW Risk Management session?
9. Are the students more aware of the ADA?
10. Has there been any inclusion of oral health into other health curricula?
11. Did the students achieve what they wanted to?
12. Does the RPP provide a template for extramural education?
13. Can the RPP develop into a mandatory program?
14. Did the students meet other students?
15. Did participants work in rural areas when they graduated?

While research to this point addressed these questions and reporting demonstrated that the RPP achieved its three major goals, consultation with faculty involved with curriculum development raised additional questions with a focus on the practicalities of RPP development. These can be summarised as;

16. Can additional RPP clinical placements be developed?
17. What are the options for closer placements for mature students?
18. Are longer placements achievable and/or desirable?
19. Is a Sydney-based orientation appropriate?
20. How many students should attend the RPP at one time?

**Research methods**

There was a clear need to focus on the practicalities of introducing a mandatory RPP in 2004 however the opportunity to gain additional insight into the other research questions led to a revision of the research methods to be used in 2003.

**Pre- and post-placement questionnaires**

This method of obtaining data was maintained and the final questionnaires used in 2003 are appended (Appendix 4).

**Reflective statements**

In light of data presented in Chapter 9 reflective statements were not used in 2003.
Log books
The need to determine student contribution to oral health care required this element to be used in 2003. All staff were asked to use the ISOH system to validate the student log books.

Student interviews
With an RPP cohort of 48 students in distant locations, there was insufficient opportunity to conduct semi-structured interviews. While informal interviews were documented in the coordinators research portfolio, this method was not used in 2003.

Staff interviews
All staff were asked to provide written feedback with specific reference to the newly-generated research questions.

Personal reflections
These were entered into the research portfolio that had been maintained throughout the RPP research project.

Review of graduate employment
While collecting graduate employment data was desirable, the 2003 cohort would not graduate until December 2003. The need to develop a framework for the mandatory RPP in advance of this time meant that this was not a primary aim for this research project. It was anticipated that these data would inform future developments and revision of the RPP in coming years. Graduate employment data will be collected as a baseline measure for evaluation of the mandatory RPP.

The list of research questions provided above forms the structure for the overall analysis of data presented in Chapter 11, Phase 3.
STUDENT LEARNING

Before attending the RPP students were asked to list the oral health issues that they thought affected rural communities. The same request was made on completion of the program. The responses are summarised in Table 26.

Table 26: Students perceptions of oral health issues affecting rural communities

<table>
<thead>
<tr>
<th>Grouped theme</th>
<th>Number of comments pre-RPP</th>
<th>Number of comments post-RPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate manpower</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>Geographical isolation</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>Lack of Specialist support</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Inability to pay for treatment due to low income</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Lack of public sector funding</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>Limited dental awareness</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>Limited range of treatment available</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Lower dental health priority</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Aboriginal health needs</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Lack of fluoridation</td>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

It is interesting to note that before the RPP, students did not consider the range of treatment options available to be an issue however on completion of the program this was considered to be a major issue with 21 of the 31 respondents (68%) listing this as an issue. Similarly, there was increased reporting of a perceived lack of public sector funding and a lack of focus on dental awareness, prevention and education. One student (14) summarised this as, “limited access to public care, no oral health education, no prevention, use of funds?” At the de-brief meeting, one student (27) commented that she believed that she would be “de-skilling if I went to work there. It’s just exos and dressings and you told us that they didn’t have time to do any scaling because they were so busy”. It is also interesting to note that before the RPP, nine students thought that individuals in rural communities had a ‘lower dental health priority’. On completion, only one student believed this to be the case and an overwhelming majority recorded aspects of public system care as being issues.
Inadequate manpower was perceived to be an issue both before and after the RPP. The perceived geographical barriers to care were considered less of an issue after the RPP and it is likely that this is due to students being based in regional centres with variable exposure to rural communities.

**Learning Contracts**

As mentioned above, only 12 students (25% of cohort) submitted completed learning contracts. As also described, the four RPP requirements were submitted at the post-placement briefing, by post and by email. A review of the requirements for each student demonstrated that only 2 (4%) had submitted all four elements. Of the 35 students who submitted self-assessments, all 35 indicated that they had fulfilled the learning contract; 12 of this group provided the learning contracts for academic assessment. Of the 46 submitted clinical supervisor assessments, 38 mentors indicated that the students had completed their learning contracts. It is likely that there would be increased compliance with RPP assessment if this were made an integral curriculum component with a formal assessment requirement.

A review of the 12 submitted learning contracts demonstrated that the contracts had been fulfilled. Ten of the twelve were comprehensive, demonstrated clear evidence of learning and were well presented. The other two were scant in detail and poorly presented however they both demonstrated student learning. This is aligned with Toohey’s [1996 #322] discussion relating to the use of learning contracts in the Health Science Education program at the University of Sydney. She noted that learning contracts may be associated with a significant workload for both students and supervisors, and that, in the absence of clearly defined assessment criteria, there is likely to be a difference in both approach to, and completion of, learning contracts.

In the context of an elective, non-assessed curriculum component, and having established a non-biased co-researcher relationship, it was impossible to obtain additional information from the students. As in previous years, responses to emails were very limited although the students were happy to respond to the request for career interest scores.
Self-assessment outcomes

Self-assessments were unreliable and there was limited motivation to complete them. As described above, the pre-placement briefing resulted in 35 self-assessment strategies and students were provided with feedback. There was insufficient time to support each student in the development of these strategies and the lack of response to email feedback indicated that there was little inclination or time to develop these further. As has been described in the literature (110, 113-115, 118), student self-assessment requires considerable support in the development of appropriate and realistic criteria. I was unable to support this due to time constraints, number of students and the lack of previous student experience using self-assessment methods. Consequently, self-assessment was neither valid nor reliable.

Of the 35 submitted self-assessments, all students awarded themselves a ‘satisfactory’ grade. Of greater interest was the range of comments made by students in response to the open-ended questions on the self-assessment form (see Appendix). The students had gained considerable insight into their own abilities and appreciated the opportunity to observe and reflect on various aspects of rural oral health care. With reference to the academic advisors assessment form, students who demonstrated the ability to discuss the RPP and recognise their strengths and weaknesses were considered to be ‘satisfactory’.

It had been anticipated that the three assessment requirements would be considered separately. The need to consider each assessment in awarding an aggregate ‘satisfactory’ or ‘unsatisfactory’ was to be reviewed using the 2003 outcomes; a firm recommendation for assessment of the mandatory RPP from 2004 was to be developed. As the 2003 assessment was not a formal requirement, compliance was low. An overall RPP assessment strategy is therefore proposed in Chapter 12 with the caveat that this will require formal evaluation and may require modification.
Student learning from the ADA NSW Risk Management session

As in previous years, staff representing ADA NSW and GIFS facilitated the session with assistance from the RPP coordinator. Using the same open and closed response questionnaire as in previous years, 41 students provided feedback summarised in Figure 10.

Figure 10: Student evaluation of Risk Management session 2003

![Bar chart]

The comments made by students again referred to the approachability and support of the facilitators, the relaxed and informal learning and the relevance of the session to them. There were three suggestions for improvements, all of which requested longer sessions with more real-life cases.

Role of staff

Once again the students appreciated the support and enthusiasm of the clinicians that they met during the RPP. Of the 31 students (65%) who completed the post-placement questionnaire, 30 (97%) considered the clinicians and mentors to be ‘essential’ to their learning. The remaining student (22) was ‘unsure’ whether this was the case. He noted that, “I felt that I was left to myself far more than I thought I would be. I felt like a bit
of a nuisance as the dentist was really busy and it was obvious that she just wanted to get on with her work". A review of the self-assessment form for this student indicated that he had rationalised this experience in the context of his future career aspirations. He wrote, “It’s important for me to make sure that I am enthusiastic about my job and that I can find opportunities to teach students in this way”.

Other students made comments about the private practice visits. Student 23 stated that, dentist ignored us and it got boring just standing in the corner. I would have got more from chatting with him after work I think". Another student (38) commented that, “nothing was too much trouble. It was obvious that he was really busy but he made us feel like we could ask what we liked. He explained who we were to the patients and that was good because they joined in the conversation”. With the expansion of the RPP resulting in over 100 dental practitioners becoming involved, it was inevitable that there would be different attitudes and approaches to student visits. While selection of highly motivated practitioners would provide a more positive experience, there is value to students being exposed to a range of practitioners as illustrated by student 22’s comments above.

DATA COLLECTION AND ANALYSIS

Data collection

45 students completed pre-placement questionnaires and 31 students (65%) completed post-placement questionnaires. This post-placement response rate is considerably lower than in previous years (100%, 100% and 80% respectively in 2000, 2001 and 2002). This is likely to be due to the decreased level of academic support because of the increased number of student participants. In previous years with smaller groups of students, the coordinator had been able to establish personal relationships with each of the participating students; in 2003 the increased numbers and geographical locations of these students meant that the coordinator was unable to establish these relationships. Of the students who attended the smaller group placements based at Broken Hill, all 24 students completed the post-placement questionnaire. Of the group of 24 who attended the RPP in Weeks 2 and 3, 7 students (30%) completed the post-placement
questionnaire. This low response would suggest that this group felt less involved in the RPP and the associated research, with the inference that it was due to the limited academic support available.

**Student familiarity with rural lifestyle**

Of the 45 students who completed the pre-placement questionnaire, 37 (82%) reported that they were ‘not familiar at all’ with rural life and the remaining 8 (18%) stated that they were ‘quite familiar’ with rural life. All of the latter group had spent 6 months or less in rural areas. Of those who were not familiar, 19 (42% of respondents) had never been to rural areas and the remaining 18 (40% of respondents) had spent less than one month in rural areas.

One student (2%) had spent holidays in rural areas; 14 students (31%) had holidayed in regional towns, 19 (42%) in metropolitan areas and 11 (25%) overseas. No students had received either primary or secondary education in rural areas. Thirty six students (80%) had received primary and secondary education in metropolitan areas, 3 students (6%) in regional towns and 6 students (12%) overseas. Thus, in this cohort, there were no students who completed questionnaires from rural backgrounds; they would not be included in the overall analysis in Phase 3.

**Student attitudes to rural practice before and after the RPP**

Table 27 summarises the perceived advantages of a rural career before and after the RPP. The major advantages before and after the RPP were perceived to be the ‘rural lifestyle’ and ‘increased/broader range of clinical experience’. Being part of a small friendly community was also equally ranked before and after the RPP.

Before the RPP, the ability to support communities where there are no services was ranked 4th however after the RPP this was ranked last. This might be because students were placed in regional towns where services exist or because the students were able to identify more personally applicable advantages. Remuneration in rural practice was ranked higher after the placements, as was professional support. This is likely to be due
to the professional support networks that were drawn upon in order to recruit RPP staff.

Table 27: Perceived advantages of a rural career pre- and post-RPP 2003

<table>
<thead>
<tr>
<th></th>
<th>Frequency of response</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-RPP (n=45)</td>
<td>Post-RPP (n=31)</td>
</tr>
<tr>
<td>Being part of a small, friendly community</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>Rural lifestyle</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>Increased /broader range of clinical experience</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>Ability to provide care where none exists</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Increased remuneration</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Improved employment opportunities</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Professional support</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Decreased cost of living</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Students also listed the perceived limitations of rural practice and these are summarised in Table 28.

Table 28: Perceived limitations of a rural career pre- and post-RPP 2003

<table>
<thead>
<tr>
<th></th>
<th>Frequency of response</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-RPP (n=45)</td>
<td>Post-RPP (n=31)</td>
</tr>
<tr>
<td>Distance from family and friends</td>
<td>35</td>
<td>29</td>
</tr>
<tr>
<td>Professional isolation</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>Limited continuing education opportunities</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Lack of social activities</td>
<td>25</td>
<td>12</td>
</tr>
<tr>
<td>Independence</td>
<td>No mention</td>
<td>3</td>
</tr>
<tr>
<td>Distance / Cost of travel</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Limited education for children</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Cultural isolation/racism</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Limited range of experience</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Limited opportunities for spouse employment</td>
<td>3</td>
<td>No mention</td>
</tr>
<tr>
<td>High crime rate</td>
<td>No</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>mention</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>No ocean</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Weather</td>
<td>1</td>
<td>No mention</td>
</tr>
<tr>
<td>Having a community identity</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

The limitations ranked most highly both before and after the RPP were ‘distance from family and friends’, ‘professional isolation’ and ‘lack of social activities’. Perceptions of cultural isolation and/or racism were largely dispelled after participation in the RPP (ranked 5th before and 9th after the program) however the ‘limited range of experience’ was ranked considerably higher after the RPP (10th before and 4th after the program).

This observation has direct implications for the recruitment of new dental graduates to public sector employment. As has been noted previously, the students were generally critical of the limited clinical experience and preventive approach to oral health care in the clinics that they visited. It is possible that the experience was skewed to ensure that the students were able to make a real contribution. It is however important to acknowledge that the RPP experience undoubtedly influences career direction and the majority of the 2003 cohort reported that they were very unlikely to consider public sector employment immediately after graduation.

Student interest in a rural career

Figure 11 demonstrates the pre- and post-placement career interest scores provided by the students. As noted previously, the 17 students who did not submit post-placement questionnaires were contacted by email and asked to provide this item by return. Three students did not comply with this request and the same three students failed to provide pre-placement scores. Figure 11 therefore shows career interest scores for the same 45 students before and after the RPP.
Despite the reported poor compliance with various elements of the program, the 45 students were more interested in a rural career after the RPP than they were before. The mean interest score before the RPP was 6.22 ± 1.76 and after the RPP it was 7.33 ± 1.65. A paired sample students T test provides \( t = -3.98 \) with 44 degrees of freedom with \( P < 0.001 \). This was a highly significant outcome. An analysis of additional data is supplied in the overall analysis in Chapter 11.

**Student contribution to oral health care**

A review of the 18 logbooks (38%) submitted by students demonstrated that the students provided a range of treatment for patients at the host dental clinics. These were largely simple restorations, dental extractions, scaling and polishing. Table 28 summarises the clinical experience gained by the 18 respondents. ISOH data was requested from each of the mentors. Data was not provided however most mentors reported that the students had gained considerable clinical experience.

One mentor stated that he had not expected them to treat patients and had considered the RPP to be “more of an experience than an education”. This was an unexpected response as this mentor had been involved with the RPP in 2002 and had received considerable support in developing the local program. There had been a considerable emphasis placed on the clinical element in 2002 as reflected in the student experience.
Further discussion with this mentor revealed concerns that the placement of students in the clinic might put undue pressure on the clinicians however there was no evidence provided to support this.

During ongoing discussions with all of the mentors it transpired that they perceived the RPP to be a "tempter" and that they had not placed any emphasis on the provision of treatment. They considered the RPP to be too short to achieve all of its aims and had prioritised experience of rural lifestyle and enjoyment. This misunderstanding stresses the need to reinforce repeatedly the need for students to obtain clinical experience. It highlights the problems encountered when academic support is less than optimal.

The well-established programs at Broken Hill, Dubbo and Orange had had the benefit of considerable academic support over a four-year period. This academic support is obviously essential for a consistent approach to the program. While the RPP was an elective curriculum component the variable experiences were not of great significance. Should the RPP evolve to require specified clinical experience, this aspect will require greater academic support than provided in 2003.

Table 29: Clinical experience during the RPP 2003

<table>
<thead>
<tr>
<th>Clinical locations (n=18)</th>
<th>BH n=8</th>
<th>Dub n=8</th>
<th>Oran n=8</th>
<th>Lis n=4</th>
<th>Coff n=4</th>
<th>Albu n=4</th>
<th>Tam n=4</th>
<th>Hun n=4</th>
<th>Que n=4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of logs</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>Nil</td>
<td>Nil</td>
<td>2</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>(50%)</td>
<td>(100%)</td>
<td>(50%)</td>
<td>(0%)</td>
<td>(0%)</td>
<td>(50%)</td>
<td>(0%)</td>
<td>(0%)</td>
<td>(0%)</td>
<td>(0%)</td>
</tr>
<tr>
<td>No. of OOS*</td>
<td>35</td>
<td>171</td>
<td>54</td>
<td>0</td>
<td>No ISOH data</td>
<td>50</td>
<td>No ISOH data</td>
<td>No ISOH data</td>
<td>No ISOH data</td>
</tr>
</tbody>
</table>

*Occasions Of Service

In the context of mandatory placement development and the possibility of extended placements, this variable clinical experience and commitment to record keeping will
require careful consideration. Further discussion and recommendations can be found in Phase 3 of this thesis.

**Staff feedback**

While the submission of data and comment was lower than in previous years, those staff who responded to a request for comment were extremely positive about their involvement with the RPP. Staff commented favourably on the enthusiasm, professionalism, communication and clinical skills of the students.

Through third party contact, it became apparent that those staff who did not respond considered that they had not been very well supported by the coordinator. This observation substantiated personal reflections as documented at various times during 2003 and summarised after the RPP 2003 was completed.

"Thought I could do it all! Really tried to give as many students as possible the widest range of experience but it was just too much – really out of control. Guess that I know what the aims etc are but I didn’t support the staff enough on a personal basis. Feel like I really let the staff down by focusing so much on the students. The original placements were OK because they all know me and we have met on several occasions especially when all this began. They had a buy in to the program and had helped determine its course whereas the new staff are inheriting someone else’s program so they are obviously less involved. Spent a lot of time on the phone but really I should have gone to every staff member to inform and enthuse. Guess I’m not superwoman after all! It was just not feasible to get everywhere with no identified funding for travel, accommodation etc and also based on having two days as week to do it all in. Looking at numbers – total of ~90 days to do the lot, including the NH&MRC stuff etc. Meetings with students before and after took ~5 days. RPP itself was ~30 days. Meetings with stakeholders took another ~5 days. ~10 days in Broken Hill. Admin stuff. Just too much. So what should I have done? Probably nothing different really – I have learnt heaps and now have much more of an
idea about recommendations for 2004. Bottom line is lots of students/programs = more academic support OR fewer students/programs = existing academic support. Need to really refine aims in terms of priorities and need to work with dr f to determine exactly what the focus should be. Is the RPP a two-week experience or is it a definitive contribution to clinical experience? This will guide assessment too”

DJC August 03

Improvements to the RPP

In addition to my personal reflections and the observations of the staff, students were asked to make recommendations for improvements to the RPP. Of the 31 students who submitted post-placement questionnaires, 11 (35%) would have liked to visit more private practices and 4 (13%) would have liked to visit fewer private practices. It was apparent that this feedback was location specific; for example, one mentor decided not to include any private practitioners in the RPP and the students would have liked to visit private practice. Of the 11 who would have liked to visit more practices, 10 noted that they would have preferred shorter visits at each practice. Four students (13%) would have liked more social time, six (19%) wanted additional clinical experience and five (16%) would have liked longer placements. Four students (13%) were critical of the local mentor stating that they never saw the mentor throughout the RPP. These students participated in the RPP during weeks 1 and 2 and consequent to their timely verbal feedback, this issue was addressed for the RPP during weeks 3 and 4. Three students (9%) would have liked to visit more remote communities and nine (27%) would have liked to have a car provided.

Strengths of the RPP

Table 30 summarises the perceived strengths of the RPP.

268
Table 30: Perceived strengths of RPP 2003

<table>
<thead>
<tr>
<th>Strengths of RPP 2003</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting more clinical experience</td>
<td>18</td>
</tr>
<tr>
<td>Experiencing rural lifestyle</td>
<td>16</td>
</tr>
<tr>
<td>Approachability of clinicians</td>
<td>14</td>
</tr>
<tr>
<td>Meeting new people</td>
<td>11</td>
</tr>
<tr>
<td>Balance between work and recreational time</td>
<td>9</td>
</tr>
<tr>
<td>Range of locations/activities</td>
<td>6</td>
</tr>
<tr>
<td>Spending time with student colleagues</td>
<td>6</td>
</tr>
<tr>
<td>Orientation Program</td>
<td>4</td>
</tr>
<tr>
<td>Organisation of the Program</td>
<td>3</td>
</tr>
<tr>
<td>Opportunity to fly with RFDS</td>
<td>3</td>
</tr>
<tr>
<td>Transport</td>
<td>1</td>
</tr>
</tbody>
</table>

These are in direct alignment with comments made in previous years and will be commented on further in Phase 3.

Graduate employment of RPP 2003 students

Of the 48 students who participated in the RPP 2003, 47 provided year one employment details. Eight (17%) elected to work in metropolitan teaching hospitals and twenty four (50%) accepted positions in metropolitan private practice. Two graduates (4%) worked in ‘Accessible’ areas of NSW and one (2%) moved overseas. A total of 12 graduates (25%) chose to work in ‘Moderately Accessible’ and ‘Rural’ areas; eleven of these (23%) were in rural NSW.

A full analysis of year one employment and associations with career interest scores is provided in chapter 11.

Reporting

Once again, the RPP received considerable attention in the local media. Newspaper articles and both radio and television interviews were conducted to the delight of the student participants.

Reporting to stakeholders was framed with the knowledge that the coordinator had gained new employment and would no longer be working at the Faculty of Dentistry.
A review of the outcomes of the RPP was essential, together with a clear commitment from both the UDRH and the Faculty to identify, recruit and support a new academic. This commitment was demonstrated through the appointment of an experienced academic with considerable knowledge of oral health issues facing rural communities.

It was also imperative that the previous coordinator ensured ongoing support for, and commitment to the RPP. This was obtained and the ADA NSW / GIFS resolved to provide $25,000 for the RPP 2004. The Oral Health Branch of NSW identified $8,000 to be accessed by the AHS hosting students. As an integral component of ongoing development of the RPP, academic handover included recommendations as described in Chapter 12, Phase 3.
CHAPTER 11
OVERALL ANALYSIS AND DISCUSSIONS

SECTION 1: PARTICIPANTS IN THE RURAL PLACEMENT PROGRAM 2000-2003

This section is structured with direct reference to the various research questions developed throughout the project. These questions are used as sub-section titles for clarity.

Study group

Between 2000 and 2003, a total of 128 students attended the Rural Placement Program. The numbers of students attending the RPP are summarised in Table 31.

Table 31: Students attending the RPP from 2000 to 2003

<table>
<thead>
<tr>
<th>Year</th>
<th>RPP attendees</th>
<th>Total number of final year students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>24</td>
<td>52</td>
</tr>
<tr>
<td>2001</td>
<td>24</td>
<td>56</td>
</tr>
<tr>
<td>2002</td>
<td>32</td>
<td>59</td>
</tr>
<tr>
<td>2003</td>
<td>48</td>
<td>61</td>
</tr>
<tr>
<td>TOTAL</td>
<td>128</td>
<td>228</td>
</tr>
</tbody>
</table>

Research methods

Personal reflections

Over the four years of the research, I maintained the personal research and teaching portfolio referred to in previous chapters. The maintenance of, and reflection on the journal has undoubtedly enriched the qualitative and quantitative data obtained from the co-researchers.
Staff

All staff involved with the RPP received copies of the reports from each RPP and were invited to comment on open and closed response questionnaires. As the response rate was low, follow up telephone calls and emails were used to gain additional input. Table 32 shows the response rates from the clinicians who had been actively involved with clinical supervision at the Community Dental Clinics or in a mentoring role. It should however be remembered that a total of 159 private practitioners, mentors, allied dental personnel and administrators had been involved with the RPP from 2000 to 2003. Twenty (13%) of these colleagues provided verbal feedback to confirm their positive perceptions of the students and willingness to be involved with the RPP in the future. Several of these applied for, and received, honorary academic titles (see below).

Table 32: RPP mentor response to various research methods from 2000 to 2003

<table>
<thead>
<tr>
<th>Method</th>
<th>2000 (n=2)</th>
<th>2001 (n=4)</th>
<th>2002 (n=8)</th>
<th>2003 (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open and closed response questionnaire</td>
<td>2 (100%)</td>
<td>4 (100%)</td>
<td>8 (100%)</td>
<td>4 (40%)</td>
</tr>
<tr>
<td>One to one interviews</td>
<td>2 (100%)</td>
<td>4 (100%)</td>
<td>6 (75%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>Written response to RPP report</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Follow up telephone interview</td>
<td>2 (100%)</td>
<td>4 (100%)</td>
<td>6 (75%)</td>
<td>None</td>
</tr>
</tbody>
</table>

As noted in Phase 2, as more students participated in the RPP in a four-week period, and as additional locations and mentors were recruited, the level of academic support decreased markedly. This trend is reflected in the decreasing response rates seen above and is supported by the comments relating to mentor involvement and program variability considered below.
Students

Between 2000 and 2003, various research and learning strategies were employed to research the RPP from the student, co-researcher perspective. These are summarised in Table 33.

As with the staff response rates, the student response rates also declined with the expansion of the project. There was insufficient time available to provide all 48 participants in 2003, with the level of academic support that had been possible in earlier years. In the first cohort, the response rate to all elements was over 80%: twelve students only selected the peer assessment strategy and all twelve completed this element (100%). The lowest response rates were to the ‘pre-RPP reflective statement’ (83%) and ‘self assessment’ (88%).

In 2001, the response rates were over 80% with the exception of ‘self assessment’ (58%) and the ‘clinical log book’ (66%). In both of these cohorts, there was a 100% response rate to both the pre- and post-placement questionnaires.

In 2002, students attended the RPP in three groups of 12 students. It was therefore possible to provide a similar level of academic support during the orientation programs but the coincident programs precluded site visits.

The increased student numbers in 2002 did not affect the response rates with over 80% of students submitting all required elements; the lowest response rates were to ‘self assessment’, ‘post-placement questionnaire’, ‘clinical log book’ and ‘post-placement reflective statement’. Those who did not attend the post-placement briefing failed to submit any of these items.

The post-placement briefing was intended to facilitate ‘reflection-on-experience’ and it is inferred that those who did not attend perceived the placement to be a discrete experience, with the pressures of their city-based studies taking precedence to ongoing
reflection. All of the students met with their mentors on the last morning of the placement; this provided an opportunity for de-briefing.

All twenty of the students (100%) who had been based in Broken Hill submitted all required items while six (50%) of those based in the Northern Oral Health Network (NOHN) responded. The use of the Information System for Oral Health (ISOH) in the NOHN would explain the low response rate for ‘clinical log books’ in this group as students may have assumed that the clinical data would be available through the ISOH system.

The RPP in 2003 comprised two groups of 12 and one group of 24. The larger group inevitably received less academic support than the two smaller groups. In 2003, there was a lower response rate to all items with only 25% submitting a ‘learning contract’ and 38% submitting ‘clinical log books’. The three students who failed to submit any required element were all based in Coffs Harbour. Of the 24 students who were based in Broken Hill, eight (33%) submitted ‘clinical log books’ and a ‘learning contract’. With 48 students staggered over a four-week period, it was impossible to conduct individual interviews. Those students based in Broken Hill participated in group interviews however the students attending the Sydney orientation were not always present (see chapter 10) and therefore available for interview. The residential nature of the Broken Hill placement undoubtedly facilitated both individual and group interviews.

While it is likely that the decreased level of academic support had a direct impact on response rates it should be remembered that the RPP was an elective program with no formal summative assessment requirements. With the introduction of mandatory placements students will be required to respond to the selected learning elements. The response rates obtained from 2000 to 2003 will influence these requirements and consideration of ongoing program evaluation will be required. This issue is discussed further in this section and recommendations are provided in chapter 12.
Table 33: Response rates for RPP elements 2000 to 2003

<table>
<thead>
<tr>
<th></th>
<th>RPP 2000 (n=24)</th>
<th>RPP 2001 (n=24)</th>
<th>RPP 2002 (n=32)</th>
<th>RPP 2003 (n=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-RPP questionnaire</td>
<td>24 (100%)</td>
<td>24 (100%)</td>
<td>32 (100%)</td>
<td>45 (94%)</td>
</tr>
<tr>
<td>Post-RPP questionnaire</td>
<td>24 (100%)</td>
<td>24 (100%)</td>
<td>26 (82%)</td>
<td>31 (65%)</td>
</tr>
<tr>
<td>Career interest score</td>
<td>24 (100%)</td>
<td>24 (100%)</td>
<td>32 (100%)</td>
<td>45 (94%)</td>
</tr>
<tr>
<td>Learning Contract</td>
<td>24 (100%)</td>
<td>24 (100%)</td>
<td>N/A</td>
<td>12 (25%)</td>
</tr>
<tr>
<td>Learning Goals</td>
<td>N/A</td>
<td>N/A</td>
<td>32 (100%)</td>
<td>N/A</td>
</tr>
<tr>
<td>Self-assessment</td>
<td>21 (88%)</td>
<td>14 (58%)</td>
<td>26 (82%)</td>
<td>35 (73%)</td>
</tr>
<tr>
<td>Peer Assessment</td>
<td>(n=12) 12 (100%)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Clinical Log Book</td>
<td>24 (100%)</td>
<td>16 (66%)</td>
<td>26 (82%)</td>
<td>18 (38%)</td>
</tr>
<tr>
<td>Mentor Assessment</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>46 (96%)</td>
</tr>
<tr>
<td>Pre-RPP statement</td>
<td>20 (83%)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Post-RPP statement</td>
<td>24 (100%)</td>
<td>N/A</td>
<td>26 (82%)</td>
<td>N/A</td>
</tr>
<tr>
<td>ADANSW Risk Management</td>
<td>24 (100%)</td>
<td>22 (92%)</td>
<td>32 (100%)</td>
<td>41 (85%)</td>
</tr>
<tr>
<td>Session questionnaire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One on one interviews</td>
<td>24 (100%)</td>
<td>24 (100%)</td>
<td>32 (100%)</td>
<td>No</td>
</tr>
<tr>
<td>Group interviews</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (50% of attendees)</td>
</tr>
</tbody>
</table>

Outcomes

Was the RPP a student-centred program that promoted student learning?

The structure of the RPP undoubtedly provided a student-centred educational experience through student input to the orientation program (pages 98, 156, 202 and 237), identification of learning goals and outcomes (pages 117, 158, 204 and 245), negotiation of individual learning contracts (pages 117, 166, 204 and 254) and development of criterion-referenced self-assessment (pages 118, 168, 213 and 255). The students had an appreciation of the value of these elements and those attending in smaller groups had a higher level of participation in the educational components of the program as described above. There was evidence of student learning from these elements although the relative value of each element was not clear (pages 126, 174, 210 and 253). It was evident that individual students responded differently to the
educational elements, confirming the need for individual input to program structure and determination of outcomes.

It should also be remembered that all of the participating students had been educated in a traditional didactic curriculum and had had little exposure to student-centred curricula. In addition, there was no formal requirement for them to participate in any educational element of the program, as the RPP was a ‘voluntary’ vacation program. It was therefore encouraging that all of the students responded positively to the program and many embraced the various learning opportunities available to them (pages 120, 158, 174 and 210).

The importance of reflection in experiential learning was also appreciated (pages 113, 217 and 253) and the pre-and post-placement briefings provided semi-structured opportunities to develop reflective skills (pages 93, 102, 150, 158, 197, 204, 238 and 246). Through sharing accommodation, clinical experiences and social activities, opportunities for informal reflection were provided and the students generally valued peer support in their learning (pages 121, 133, 174 and 265).

Reflective statements provided insight into personal construct and participation rates were high. While these statements demonstrated reflective ability, the lack of objective criteria against which to assess these statements leads to concerns about the validity and reliability of this element for formal program assessment.

Although the Learning Journals, aimed at promoting personal reflection, were not formally reviewed, several students elected to submit their journals on completion of the program. All of those submitted demonstrated insightful observations and reflections (pages 113, 177, 217 and 258).

Several students commented that the various learning activities were too onerous and admitted that they had not bothered to maintain a journal. The students considered that it was of greater value to discuss their experiences with others rather than spend time writing in journals. While these discussions apparently enhanced learning for some
students (pages 113 and 213), evidence for personal reflection was not submitted by all students (see above).

The low attendance rates at later post-placement briefings (pages 158 and 246) would suggest that the RPP was perceived as a discrete experience and that ongoing learning was not considered important. The self-reported increase in clinical confidence levels after participation for some students indicated that the program had different benefits depending upon individual needs. On graduation, students will work autonomously and in relative isolation. The need for reflective skills and realistic self-appraisal is self-evident.

The development of self-assessment and peer-assessment strategies took much longer than had been anticipated (pages 118, 168, 245 and 255). The need to support the students in determining self-assessment strategies required specific attention in program development. Again, while self-assessment was a new concept for many of the students in the BDS rural program, BDent students will have been involved in self-assessment throughout their education (see chapter 2).

The elements of the RPP that were particularly valued by the students were the ability to share the experience with colleagues (pages 121 and 265), the support from motivated and enthusiastic mentors (pages 134, 172, 219 and 256), the exposure to a wide range of clinical activities (pages 139, 157, 203 and 265) and the organization of the program. The major strengths of the program, as indicated by 105 of the 128 participants (82% response rate), are summarised in Table 34. Students were asked to define the ‘three best things’ about the RPP and the categorised responses merely indicate the grouped response themes; this data cannot be extrapolated to give percentages.
Table 34: Categorised themes describing the ten major strengths of the RPP for whole cohort from 2000 to 2003

<table>
<thead>
<tr>
<th>Categorised themes</th>
<th>Number of times mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiencing rural lifestyle</td>
<td>66</td>
</tr>
<tr>
<td>Additional clinical experience</td>
<td>62</td>
</tr>
<tr>
<td>Approachability of clinicians</td>
<td>51</td>
</tr>
<tr>
<td>Range of locations and learning opportunities</td>
<td>42</td>
</tr>
<tr>
<td>Meeting new people (non clinicians)</td>
<td>31</td>
</tr>
<tr>
<td>Orientation Program</td>
<td>20</td>
</tr>
<tr>
<td>Organisation of program</td>
<td>19</td>
</tr>
<tr>
<td>Balance between work and recreation time</td>
<td>19</td>
</tr>
<tr>
<td>Opportunity to fly with RFDS</td>
<td>15</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>11</td>
</tr>
<tr>
<td>Spending time with student colleagues</td>
<td>7</td>
</tr>
<tr>
<td>Influenced future career direction</td>
<td>7</td>
</tr>
</tbody>
</table>

The references to the clinical learning opportunities, balance of experiences, mentors and program structure would suggest that the RPP provided a student-centred approach to learning.

The selected educational elements were admittedly excessive for the 2000 program (page 138) and as summarised above, these were amended in subsequent years. Despite a reduction in these elements the participation rate was variable. It is expected that the low response rate will be addressed by the development of mandatory program requirements. It is also not unreasonable to expect that future students of the new student-centred BDent program will be more familiar with student-centred philosophy and concepts and thus would be expected to participate more fully in reflective practice.

Several students indicated that they preferred starting the RPP in larger groups before working in local clinics in smaller groups (pages 133, 157, 183 and 224). They appreciated the efforts that were made to support them personally and professionally and repeatedly referred to the input from named individuals as being amongst the most important elements of the program (pages 134, 172, 219 and 265). While other rural programs are based upon regular rotation of paired students through rural placements
[Richards, 2002 #22; Richards, 2002 #162; Odlum, 1999 #354], the RPP has value in promoting peer support particularly for the majority of participants who had not visited rural areas before and who were concerned about potential racism and bigotry.

While there were elements of the RPP which one or two individual students would like to have changed (pages 138, 181, 227 and 264), overall the structure of the RPP received positive feedback. The strengths of the program were clearly identified (pages 141, 183, 228 and 265) and the program undoubtedly had a significant impact upon the students' perceptions of, and attitudes to rural practice (pages 128, 175, 221 and 259). The major limitations of the program indicated by 105 of the 128 participants (82% response rate), are summarised in Table 35. Students were asked to make three recommendations that would improve the program. Again, the categorised responses merely indicate the grouped response themes; this data cannot be extrapolated to give percentages.

There was no mention made of any of the learning requirements as being areas for improvement. It was interesting to note that several students would have liked longer placements and that an increase in clinical experience was the first-ranked area for improvement.

Table 35: Major improvements to the RPP as suggested by students from 2000 to 2003.

<table>
<thead>
<tr>
<th>Categorised themes</th>
<th>Number of times mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>More clinical experience</td>
<td>44</td>
</tr>
<tr>
<td>Provision of car during placement</td>
<td>34</td>
</tr>
<tr>
<td>Less time observing private practitioners</td>
<td>23</td>
</tr>
<tr>
<td>Improved accommodation</td>
<td>18</td>
</tr>
<tr>
<td>Longer placement</td>
<td>11</td>
</tr>
<tr>
<td>More recreation time</td>
<td>10</td>
</tr>
<tr>
<td>Introduce mandatory program</td>
<td>6</td>
</tr>
<tr>
<td>Increased opportunity to work with</td>
<td>6</td>
</tr>
<tr>
<td>Aboriginal Medical Service</td>
<td>6</td>
</tr>
<tr>
<td>Shorter orientation program</td>
<td>3</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>6</td>
</tr>
</tbody>
</table>
Did the RPP result in positive attitudes to rural practice and lifestyle?

While previous chapters have amply described the outcomes of each RPP from a qualitative perspective, the career interest scores provided by students before and after each RPP provide data for analysis of impact on attitudes to rural practice and lifestyle. Paired t-Test results for students attending the RPP from 2000 to 2003 can be summarised to provide an objective measure of attitudinal change.

Data obtained from 2000 to 2003 was analysed using SPSS software and a paired t-Test was used to compare paired means based on the assumption of normal distribution. The results from this analysis are shown in Table 36.

Table 36: Paired t Test results for career interest scores for RPP cohorts from 2000 to 2003

<table>
<thead>
<tr>
<th></th>
<th>2000 (n=24)</th>
<th>2001 (n=24)</th>
<th>2002 (n=32)</th>
<th>2003 (n=45)#</th>
<th>Whole cohort (n=125)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean before RPP</td>
<td>7.38 ± 1.884</td>
<td>6.42 ± 2.104</td>
<td>7.38 ± 1.699</td>
<td>6.22 ± 1.757</td>
<td>6.78 ± 1.896</td>
</tr>
<tr>
<td>Mean after RPP</td>
<td>7.33 ± 2.057</td>
<td>8.04 ± 1.334</td>
<td>7.59 ± 1.643</td>
<td>7.33 ± 1.651</td>
<td>7.54 ± 1.683</td>
</tr>
<tr>
<td>Mean difference</td>
<td>0.04</td>
<td>-1.62</td>
<td>-0.22</td>
<td>-1.11</td>
<td>-0.76</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.756</td>
<td>1.610</td>
<td>1.827</td>
<td>1.874</td>
<td>1.877</td>
</tr>
<tr>
<td>Standard Error of Mean</td>
<td>0.359</td>
<td>0.329</td>
<td>0.323</td>
<td>0.279</td>
<td>0.168</td>
</tr>
<tr>
<td>95% CI of difference</td>
<td>-0.07 to -0.78</td>
<td>-2.3 to -0.95</td>
<td>-0.88 to 0.44</td>
<td>-1.67 to 0.55</td>
<td>-1.09 to 0.43</td>
</tr>
<tr>
<td>t value</td>
<td>0.116 23df</td>
<td>-4.944 23df</td>
<td>-0.677 31df</td>
<td>-3.978 44df</td>
<td>-4.527 124df</td>
</tr>
<tr>
<td>Significance</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>0.503</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Based on this analysis it is concluded that the RPP had a strongly significant impact on the career interest scores of 2001 and 2003 RPP participants. Overall, the RPP had a

---

*SPSS 11.0 software. Copyright © 2001 by SPSS Inc., Chicago
*3 students did not provide 'career interest scores'
strongly significant impact on the career interest scores of the participating group from 2000 to 2003.

Histograms for each of the RPP cohorts can be found in the relevant chapters (see pages 131, 178, 224 and 261) and these suggest that the distribution of scores does not follow a normal distribution. Figure 12 shows the distribution of pre- and post-placement 'career interest scores' for the entire RPP group. This demonstrates that the distribution of career interest scores is non-parametric.

Figure 12: Histogram to show pre- and post-placement career interest scores for students participating in the RPP from 2000 to 2003 (n= 125; three scores missing)

Wilcoxon’s signed rank test uses the sizes and signs of the differences between the paired data to determine significance. The null hypothesis is that participation in the RPP makes no difference to career interest scores. This test was therefore applied to the data and the results can be seen in Table 37: the RPP was strongly associated with an increase in career interest score for the 2001 and 2003 cohorts. The effect of the RPP on the career interest scores of the entire group is highly significant.

It is interesting to note that despite qualitative evidence to the contrary, the first group of students was least influenced by the RPP with respect to career interest scores.
Despite concerns that the 2003 group received less support and participated at lower levels than the previous groups, this group was most significantly influenced by the RPP. This analysis and earlier qualitative comment support the fact that the RPP had a positive impact on students’ attitudes to rural lifestyle and practice.

Table 37: Wilcoxon’s signed rank test results for career interest scores reported by RPP students from 2000 to 2003

<table>
<thead>
<tr>
<th></th>
<th>RPP 2000 (n=24)</th>
<th>RPP 2001 (n=24)</th>
<th>RPP 2002 (n=32)</th>
<th>RPP 2003 (n=45)</th>
<th>Whole cohort (n=125)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-RPP score &lt; pre-RPP score</td>
<td>10</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Post-RPP score &gt; pre-RPP score</td>
<td>7</td>
<td>18</td>
<td>14</td>
<td>30</td>
<td>69</td>
</tr>
<tr>
<td>Post-RPP score = pre-RPP score</td>
<td>7</td>
<td>4</td>
<td>11</td>
<td>9</td>
<td>31</td>
</tr>
<tr>
<td>Z</td>
<td>-0.240</td>
<td>-3.667</td>
<td>-1.157</td>
<td>-3.441</td>
<td>-4.360</td>
</tr>
<tr>
<td>Significance</td>
<td>0.810</td>
<td>&lt;0.001</td>
<td>0.247</td>
<td>0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

The RPP therefore had a significant impact on the 2001 and 2003 cohorts. There was a significant impact on the career interest of the whole cohort.

Did the RPP students contribute to oral health care for community members?

The students provided 1230 documented Occasions of Service from 2000 to 2003 (pages 135, 179, 224, 262 and 280). This clinical experience was additional to that provided for by the BDS curriculum. Those Community Dental Clinics that had vacancies at the time of the RPP provided the students with existing infrastructure and support personnel without additional expense, opportunity cost or administrative effort for the clinics. Co-researcher input from these clinics indicated that the service contribution made would be likely to be reduced if there were no vacant facilities at the clinics. There was expressed concern that reallocation of employed staff to allow students to provide clinical work might have a negative impact upon clinic
productivity (pages 137, 180 and 224). Staff qualified this concern by recognising the likely long-term positive impact of the program on opportunities for recruitment.

The Northern Oral Health Network Manager provided the most comprehensive cost benefit analysis in 2002. This confirmed that the level of service delivery was dependent on staff vacancies, structure of the program and number of students attending. There is a demonstrated need to develop a clear strategy and accountability for Occasion of Service data collection and this obviously depends upon the future foci for the RPP. If the RPP clinical experience becomes an integral component of clinical education then this is accompanied by the need for students to accept greater responsibility for maintaining and submitting student logs. Financial accountability to stakeholders does require a consistent approach to data collection as discussed further in the recommendations in chapter 12.

**Did the RPP staff support and inspire the students?**

The expertise and enthusiasm of the mentors and various other staff involved, was a frequent observation made by many of the students. The absence of appropriate mentoring or evidence of staff disinterest had an impact on students as evidenced by qualitative data and decreased post-placement scores (pages 130, 177, 221 and 261).

Similarly, the positive impact that staff made on students has been documented (pages 124, 172, 219 and 256). Staff were regularly referred to as one of the ‘three best things’ about the program (Tables 9, 15, 22 and 31). On completion of the RPP, there were more references to ‘professional support’ as being an advantage of rural practice (Tables 7, 12, 19 and 28) and fewer references to ‘limited professional support’ as being a limitation of rural practice (Tables 8, 13, 20 and 29).
Were honorary titles an incentive to become involved with the RPP?

As described above, 159 individuals were involved in the RPP from 2000 to 2003. Their involvement ranged from dedicated clinical mentorship to program administration. All of those involved were invited to submit curriculum vitae for consideration for honorary academic titles. Of the 159, four (3%) had existing honorary titles and twenty seven (17%) were awarded titles over the four years, as a consequence of their involvement with the RPP. It is thus likely that while honorary titles are not an incentive to become involved with the RPP it is important that those who wish to apply for such positions are supported in doing so.

Did any staff recruit as a consequence of the RPP?

Over the four years, sixteen of the dentists who supported the RPP informed me that they were hoping to recruit an associate dentist as a consequence of their involvement in the program. It is feasible that other dentists were also hoping to recruit however this information was not volunteered. Of the 16, six (38%) recruited new graduates from the program. Three of these graduates were employed in the public sector and three in private practice. Of the ten dentists who did not recruit from the program, 3 (19%) employed dentists from other sources. All sixteen have indicated their desire to maintain involvement with the RPP.

Have the stakeholders supported the Faculty?

As described in earlier chapters, the four external stakeholders were defined as being the ADANSW, the Oral Health Branch (OHB) of NSW Health, the UDRH at Broken Hill and the Dental Board of NSW. Each of these stakeholders has provided immeasurable support for the RPP and therefore the Faculty. The support provided has been pivotal to the success of the RPP and can be summarised as follows.
ADA NSW

- Key personnel who developed and facilitated the Risk Management session at every RPP orientation (in conjunction with personnel from Ebsworth and Ebsworth)
- Support for welcome social function
- Financial support (in conjunction with Guild Insurance and Financial Services Ltd.) for travel bursaries to $25,000 per year
- Assistance in recruiting private practitioners to participate in program
- Professional recruitment and promotion

Oral Health Branch

- Establishment of Memoranda of Understanding to allow students to work in Community Dental Clinics in a total of nine Area Health Services
- Professional support for associated Rural Health Support Education and Training research project
- Central funding of $8,000 to cover accommodation costs and incidental expenses in 2001

UDRH at Broken Hill

- Academic multi-disciplinary support
- Contribution to joint fractional academic appointment
- Support for travel for academic staff member
- Staff and student accommodation
- Infrastructure to support program delivery

Dental Board of NSW

- Collaboration in the development of criteria for Community Dental Clinic accreditation in accordance with Section 57(4)(b) of the Dentists Act 1989.
• Accreditation of the various Community Dental Clinics
• Support for research into dental graduates attitudes to rural dental practice in 2000/1

Did the students learn through participation in the ADA NSW Risk Management session?

The evaluation of the Risk Management sessions was overwhelmingly positive and supporting data can be found on pages 169, 217, 258 and 283. Several students commented that the session should be made available to all final year students. As the RPP will be mandatory from 2004, this recommendation will eventuate with ongoing support from the ADANSW and GIFS. As a consequence of ADANSW involvement with the RPP, students have access to information and experienced personnel. This has assisted ADANSW in developing policy to support dental students.

Has there been any inclusion of oral health into other health curricula?

In 2002 and by virtue of my presence in the UDRH at Broken Hill, academic staff decided to offer an ‘Oral Health Elective’ as a component of their Community Health Worker program offered to Indigenous students. The curriculum for this elective was developed in collaboration with my successor as RPP coordinator, who had considerable expertise in Indigenous Oral Health. In 2003, one student applied for, and was accepted to, the Elective program.

Did the students achieve what they wanted to?

There is considerable evidence, documented in previous chapters, to positively support this statement (pages 112, 164, 210 and 253). ‘Learning contracts’ from 2000 to 2002 and subsequently ‘learning goals’ in 2003, provided a focus for goal-centred learning. As described by many students, having a learning focus enhanced the value of the experience (pages 117, 158, 204 and 245).

It was however observed that while many goals were achieved, there was insufficient time during the RPP to fully achieve all goals (pages 166, 183, 210 and 254). It was
also noted that, in the absence of any awareness of rural NSW by the majority of students, the development of goals prior to the placement was limited (pages 116, 165 and 264).

All of the students who submitted self-assessments awarded themselves a ‘pass’ grade (pages 118, 168, 213 and 255). The students in the 2000 to 2002 cohorts developed their own self-assessment strategies and the majority of the students aligned these with their placement goals. In 2003, the students were provided with a self-assessment template with space allowed for them to develop their own criteria within assessment area guidelines (Appendix 4). There was a lower rate of compliance with this format and as there was no specific area for assessment of goals, evaluation of goal achievement is limited. As documented at length in phase 2, interviews and reflective statements support the fact that most students achieved all or more than they had expected to.

Table 38 summarises the themed RPP goals for the entire RPP cohort. The majority of students indicated their desire to find out more about living and working in rural areas.

<table>
<thead>
<tr>
<th>Grouped themes for student goals</th>
<th>Number of students mentioning theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn about dentistry in a different setting</td>
<td>85</td>
</tr>
<tr>
<td>Experience rural lifestyle</td>
<td>73</td>
</tr>
<tr>
<td>Assist in career decision making</td>
<td>53</td>
</tr>
<tr>
<td>Learn about oral health issues in the country</td>
<td>41</td>
</tr>
<tr>
<td>Get more clinical experience</td>
<td>34</td>
</tr>
<tr>
<td>New life experience</td>
<td>34</td>
</tr>
<tr>
<td>Holiday</td>
<td>24</td>
</tr>
<tr>
<td>Meet new people (non dental)</td>
<td>23</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1</td>
</tr>
</tbody>
</table>

Both before and after the RPP, the students recorded their perceptions of the advantages and limitations of a rural career. Their perceptions were grouped in themes and this information is summarised in Tables 39 and 40. As the students were restricted to three items it is not possible to make specific comment however it is clear
that there were common themes. After the RPP, despite the lower response rate, there was a greater mention of 'increased remuneration', 'decreased cost of living' and 'professional support'. The three advantages mentioned most often were the same before and after the program.

Table 39: Perceived advantages of a rural career before and after the RPP 2000 to 2003

<table>
<thead>
<tr>
<th>Grouped themes for perceived advantages</th>
<th>Number of comments pre-RPP (n=125)</th>
<th>Number of comments post-RPP (n=105)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural lifestyle</td>
<td>82</td>
<td>62</td>
</tr>
<tr>
<td>Range of clinical experience</td>
<td>79</td>
<td>67</td>
</tr>
<tr>
<td>Community spirit</td>
<td>51</td>
<td>63</td>
</tr>
<tr>
<td>Increased employment opportunities</td>
<td>39</td>
<td>27</td>
</tr>
<tr>
<td>Increased remuneration</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Decreased stress</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Decreased cost of living</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Professional support</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 40: Perceived limitations of a rural career before and after the RPP 2000 to 2003

<table>
<thead>
<tr>
<th>Grouped themes for perceived limitations</th>
<th>Number of comments pre-RPP (n=125)</th>
<th>Number of comments post-RPP (n=105)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance from family and friends</td>
<td>97</td>
<td>79</td>
</tr>
<tr>
<td>Professional isolation</td>
<td>69</td>
<td>59</td>
</tr>
<tr>
<td>Limited social activities</td>
<td>54</td>
<td>40</td>
</tr>
<tr>
<td>Accessibility of city</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>Need to be able to be independent</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Limited education options for children</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Cultural isolation</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Limited services</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Community identity</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Limited opportunities to meet life partner</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Limited opportunities for spouse employement</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Difficult to leave area when established</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
Again, despite the lower response rate, there was greater mention of the need to be independent. Students referred to the need to learn how to drive, cook and establish new social networks. Many of the students were apparently living at home with their parents and had not been required to develop social and domestic independence. Faced with the prospect of commencing work, it is likely that the additional need to develop independence would be a barrier to leaving home, especially to work some distance from family. Within the ‘miscellaneous’ category, students referred to limitations such as “weather” and “lack of ocean”.

The three major limitations of a rural career were the same before and after the placement. These are in alignment with medical and allied health literature (see for example (2, 136, 140, 142, 154, 156, 162)) and are discussed further in chapter 12.

This overall analysis of the perceived advantages and limitations indicates that the placement provides validation of many pre-conceptions. It is important to note that the effects on individual students vary immensely (pages 126, 174, 220 and 258) and this validates the decision to use triangulation as a basis for this thesis (page 66).

Does the RPP provide a template for extramural education and optimising such opportunity?

The structure of the RPP was successfully used as a basis for rural placements for pharmacy students and, following a presentation to veterinary science academics, has been used as a template for clinical placements in this area. While the RPP has been an apparent success in fulfilling its aims, there have undoubtedly been areas that could be strengthened. The need for academic support and presence was underestimated as the program developed. The need for consistent and accurate data collection from staff must be stressed; visible academic leadership would assist in this regard and this should influence the timing and location of student placements.
Can the RPP develop into a mandatory program?
The RPP will be a mandatory component of the BDent curriculum from 2004. This research will inform the structure, timing and location of the placements. It is important to review the basic aims of the RPP; the need to reconcile educational outcomes, service delivery, professional needs and experiential aims is important and this is discussed further in chapter 12.

Did the students meet other health students?
Those students who stayed in University or Hospital accommodation socialised with a range of health students including nursing, physiotherapy, pharmacy and medical students. Those who stayed in private accommodation, although having much more luxurious surroundings, did not meet other health students.

Did participants work in rural areas when they graduated?
114 of the participants in the RPP (90%) provided year one employment details. These data will also be considered, with data from non-participants, in Section 2 of this chapter. Table 41 summarises the year 1 employment locations for the RPP students and has been grouped according to ARIA classifications. As described in chapter 3, this classification categorises areas according to access to various services and groups these scores into ‘Very Accessible’ (VA), ‘Accessible’ (A), ‘Moderately Accessible’ (MA), ‘Remote’ (R) and ‘Very Remote’ (VR) (153). For the purposes of this research and clarity of reporting, “Rural” comprises areas categorised into the MA, R and VR groups.
Figure 13: Map to show Accessibility / Remoteness Index of Australia (ARIA) classifications (from gisca webpage (153))

Fig 7: ARIA Values for Postcodes.

In the table below, shaded cells indicate those students who attended the RPP and who subsequently worked in ‘Rural’ areas throughout Australia (areas $>3.51$ on map above). ‘Accessible’ (A) areas are represented by an ARIA value between 1.84 and 3.51.
### Table 41: Year One employment locations for RPP attendees

<table>
<thead>
<tr>
<th></th>
<th>City: Teaching Hospital</th>
<th>City: Private Practice</th>
<th>Interstate: Rural+</th>
<th>NSW: Rural+</th>
<th>NSW: 'A' areas+</th>
<th>Overseas</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPP 2000 (n=20)</td>
<td>5 (25%)</td>
<td>6 (30%)</td>
<td>1 (5%)</td>
<td>7 (35%)</td>
<td>0</td>
<td>1 (5%)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(n=28)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RPP 2001 (n=28)</td>
<td>5 (18%)</td>
<td>10 (36%)</td>
<td>1 (3%)</td>
<td>7 (25%)</td>
<td>4 (15%)</td>
<td>0</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>RPP 2002 (n=32)</td>
<td>9 (28%)</td>
<td>10 (31%)</td>
<td>4 (13%)</td>
<td>7 (22%)</td>
<td>0</td>
<td>0</td>
<td>2 (6%)</td>
</tr>
<tr>
<td>RPP 2003 (n=48)</td>
<td>9 (19%)</td>
<td>24 (50%)</td>
<td>1 (2%)</td>
<td>10 (1%)</td>
<td>2 (4%)</td>
<td>1 (2%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Whole cohort</td>
<td>28 (22%)</td>
<td>50 (39%)</td>
<td>7 (6%)</td>
<td>31 (24%)</td>
<td>6 (5%)</td>
<td>2 (1%)</td>
<td>4 (3%)</td>
</tr>
<tr>
<td>(n=128)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A total of 4 of the 128 RPP students (3%) could not be traced to determine their post graduation employment. Three students did not provide career interest scores and were therefore excluded. The study group therefore comprised 121 RPP students.

The career interest scores for these students are analysed and the results are tabulated below (Table 42).

---

* The Accessibility/Remoteness Index of Australia (ARIA) was used as a basis for the definition of rural. For the purposes of this project, 'Rural' comprises those areas defined as "Moderately Accessible", 'Rural' and 'Remote' (153). The 'Accessible' (A) areas were on the Eastern seaboard of NSW. Please also refer Figure 13.

* Four fourth year students participated in RPP 2000 and thus graduated in 2001. They are included in the 2001 data.
Table 42: Specific career interest score details for all students providing career interest scores and for whom year one employment location could be determined

<table>
<thead>
<tr>
<th>Pre-RPP score (n=121)</th>
<th>Number of students working in rural area</th>
<th>Number of students not working in rural area</th>
<th>Post-RPP score</th>
<th>Number of students working in rural area</th>
<th>Number of students not working in rural area</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>7</td>
<td>3</td>
<td>≥ 10</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>9 or higher</td>
<td>15</td>
<td>8</td>
<td>≥ 9</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>8 or higher</td>
<td>21</td>
<td>22</td>
<td>≥ 8</td>
<td>29</td>
<td>38</td>
</tr>
<tr>
<td>7 or higher</td>
<td>31</td>
<td>42</td>
<td>≥ 7</td>
<td>35</td>
<td>63</td>
</tr>
<tr>
<td>6 or higher</td>
<td>34</td>
<td>55</td>
<td>≥ 6</td>
<td>37</td>
<td>71</td>
</tr>
<tr>
<td>5 or higher</td>
<td>35</td>
<td>73</td>
<td>≥ 5</td>
<td>38</td>
<td>76</td>
</tr>
<tr>
<td>Under 5</td>
<td>3</td>
<td>10</td>
<td>Under 5</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>38</td>
<td>83</td>
<td>TOTAL</td>
<td>38</td>
<td>83</td>
</tr>
</tbody>
</table>

Constructing 2 x 2 tables allowed the chi squared test to be used to determine associations between pre- and post-placement scores and working in rural areas in year one. These results are shown in Table 43. It is apparent that a post-placement score under 5 is not associated with early rural practice although 3 students who recorded a pre-placement score of 5 did indeed chose rural employment. The program obviously resulted in an increased career interest score for these three students.
Table 43: Significance of associations between the value of pre- and post-placement scores and working in a rural area after graduating

<table>
<thead>
<tr>
<th>pre-RPP career interest scores</th>
<th>Observed percentage difference</th>
<th>x2</th>
<th>P</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>40%</td>
<td>7.31; 1df</td>
<td>0.007</td>
<td>12% to 71%</td>
</tr>
<tr>
<td>9 or higher</td>
<td>41%</td>
<td>15.07; 1df</td>
<td>&lt;0.0001</td>
<td>19% to 62%</td>
</tr>
<tr>
<td>8 or higher</td>
<td>37%</td>
<td>9.41; 1df</td>
<td>0.002</td>
<td>9% to 44%</td>
</tr>
<tr>
<td>7 or higher</td>
<td>27%</td>
<td>10.45; 1df</td>
<td>&lt;0.0001</td>
<td>13% to 43%</td>
</tr>
<tr>
<td>6 or higher</td>
<td>25%</td>
<td>7.21; 1df</td>
<td>0.007</td>
<td>11% to 41%</td>
</tr>
<tr>
<td>5 or higher</td>
<td>9%</td>
<td>0.46; 1df</td>
<td>0.5</td>
<td>-16% to 34%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>post-RPP career interest scores</th>
<th>Observed percentage difference</th>
<th>x2</th>
<th>P</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>46%</td>
<td>9.59; 1df</td>
<td>&lt;0.0001</td>
<td>18% to 74%</td>
</tr>
<tr>
<td>9 or higher</td>
<td>25%</td>
<td>7.85; 1df</td>
<td>0.005</td>
<td>7% to 43%</td>
</tr>
<tr>
<td>8 or higher</td>
<td>26%</td>
<td>9.83; 1df</td>
<td>&lt;0.0001</td>
<td>12% to 42%</td>
</tr>
<tr>
<td>7 or higher</td>
<td>23%</td>
<td>4.44; 1df</td>
<td>0.03</td>
<td>6% to 40%</td>
</tr>
<tr>
<td>6 or higher</td>
<td>27%</td>
<td>3.8; 1df</td>
<td>0.05</td>
<td>10% to 42%</td>
</tr>
<tr>
<td>5 or higher</td>
<td>33%</td>
<td>3.4; 1df</td>
<td>0.06</td>
<td>24% to 42%</td>
</tr>
</tbody>
</table>

There were 41% more students recording a pre-placement score of nine or higher who then worked in rural areas than those who recorded a pre-placement score of less than nine. This is highly significant (x2 =15.07; 1df; P<0.0001). The 95% confidence interval for the difference covered the range from 19% of those scoring nine and higher working in rural areas to 62% of those scoring nine and higher working in rural areas. There were 27% more students recording a pre-placement score of seven or higher who then worked in rural areas than those who recorded a pre-placement score of less than seven. This is also highly significant (x2 =10.45; 1df; P<0.0001). The 95% confidence interval for the difference covered the range from 13% of those scoring seven and higher working in rural areas to 43% of those scoring seven and higher working in rural areas.

On review of the post-placement scores, there were 46% more students recording a post-placement score of ten who then worked in rural areas than those who recorded a pre-placement score of less than ten. This is highly significant (x2 =9.59; 1df; P<0.0001). The 95% confidence interval for the difference covered the range from
18% of those scoring nine and higher working in rural areas to 74% of those scoring nine and higher working in rural areas. There were 26% more students recording a post-placement score of eight or higher who then worked in rural areas than those who recorded a post-placement score of less than eight. This is highly significant ($\chi^2 = 9.83$; 1 df; $P < 0.0001$). The 95% confidence interval for the difference covered the range from 12% of those scoring eight and higher working in rural areas to 42% of those scoring eight and higher working in rural areas.

This indicates that high career interest scores (9 and 10 before the placement and 10 after the placement) resulted in a significantly higher percentage of graduates working in rural areas. Generally, the higher the pre-placement career interest score, the higher percentage of graduates who worked in rural areas. The post-placement scores did not demonstrate this linear trend. Career interest scores for those students who did not attend the RPP were not collected.

In view of professional workforce needs (see Chapter 3), this information might inform student admission processes and this is discussed further in chapter 12.

**Can additional RPP clinical placements be developed?**

The existing Memoranda of Understanding and the accreditation criteria agreed by the Dental Board of NSW are applicable to any identified additional placement opportunities. As has been described in chapters 9 and 10, the major limitations to the development of new placements relate to the practicalities of providing adequate academic support for both staff and students involved with placements (pages 229, 268 and 328).

**What are the options for closer placements for mature students?**

There are numerous opportunities to work with colleagues in the Oral Health Branch and the Area Health Services in the Inner West and to the South of Sydney so that students unable to leave family may still participate in an extramural program. Such placements, while providing experience in a non-metropolitan location, could not be
labelled ‘Rural’ as this may lead to misconceptions by those students who have never left the city before. The students, who were based in Hunter Area Health Service in 2002 and 2003, spent the majority of their placements in the rural areas within the AHS and were able to differentiate between these areas and the Newcastle clinics. There was nevertheless concern that they were not having a ‘real’ rural experience.

It was interesting to note that students in 2003 who were offered closer placements in the Hunter AHS actually chose not to avail themselves of these placements. It is possible that students with family did not choose to apply for the RPP. The option of closer placements should be maintained for the more mature BDent cohort who will participate in mandatory placements (pages 236 and 328).

**Are longer placements achievable and/or desirable?**

While the RPP provides an overview of rural lifestyle and practice, the time constraints precluded full development of learning goals and contracts as mentioned above. Equally importantly, the level of patient care provided was limited by the range of experiences provided over a short period of time (pages 135, 179, 224 and 262). On completion of orientation and allowing for travel, students had a maximum of seven days to work in the Community Dental Clinics. The additional outreach, private practice and local orientation requirements further reduced this time and students noted that they would have liked to have more clinical experience (pages 139, 183, 227 and 265). This observation reiterates earlier comments that relate to the aims of mandatory placements and is discussed further in chapter 12.

**Is a Sydney-based orientation appropriate?**

The Sydney-based orientation held in 2003 had advantages. The students were able to attend the orientation as a larger group, the travel costs were minimised and additional academic support from Sydney-based colleagues was readily available. There were limitations to this orientation. The attendance rates and willingness to be involved with interviews and group discussions were disappointing and have been described. There was very little evidence of the camaraderie that characterised the group orientation in
Broken Hill. The size of this group (24) precluded individual support in the development of self-assessment criteria with a low return rate of this element of the program. The motivating factors listed by this group are discussed in chapter 10 and it is possible that some students had no motivation to attend other than to have a holiday. It is likely that when the RPP becomes a mandatory and assessable curriculum component, attendance and compliance will improve. The need to evaluate a city-based orientation in this context is apparent.

**How many students should attend the RPP at one time?**

In determining group size, it should be noted that the main limiting factor is the ability to provide adequate academic and clinical support for all participants. The students attending in 2000 and 2001 responded more favourably to all learning requirements. They were more active participants in this research project than those who attended in subsequent years. Additional considerations relate to availability of accommodation and clinical opportunities. The local mentors provide much of the required daily support and it is important that they are consulted about the number of places available. Based upon this project, the smaller groups of 12 were supported at a higher level as supported by the response rates quoted above; the group size did not have any impact on student interest as demonstrated by career interest scores.

**What were the outcomes for the RPP students from rural backgrounds?**

Of the entire cohort who completed questionnaires (98%), seven students were from rural backgrounds according to their home postcode location during primary and secondary education (pages 126, 174, 221 and 258).

Of these seven, three (43%) were employed in rural areas after graduation. These three students had career interest scores ≥ 8 both before and after the program. The other four students had career interest scores < 8 before and after the program. Table 44 compares these students with other participants in the RPP who were not from rural backgrounds.
Table 44: 2 x 2 table summarising year one employment locations for RPP students from rural and non-rural backgrounds

<table>
<thead>
<tr>
<th></th>
<th>Rural employment</th>
<th>Non-rural employment</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural background</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Non-rural background</td>
<td>36</td>
<td>81</td>
<td>117</td>
</tr>
<tr>
<td>TOTAL</td>
<td>39</td>
<td>85</td>
<td>124</td>
</tr>
</tbody>
</table>

The small number of students from a rural background means that statistical analysis is limited however the odds ratio for this group is 1.69. Based on these small numbers students from rural backgrounds who attended the RPP were not significantly more likely to work in rural areas on graduating. This does not support the findings from other studies (137, 154-157, 160) and a meta-analysis of predictors for rural careers (160).

SECTION 2: COMPARISON OF RURAL PLACEMENT PROGRAM COHORT WITH NON-PARTICIPATING FINAL YEAR STUDENTS

Phase 2 of this thesis describes and evaluates the introduction of the RPP from qualitative and quantitative perspectives. The preceding section includes the outcomes of the RPP based upon the data obtained from participants. This section includes an analysis and comparison of the data from the entire RPP cohort with those students who did not participate. Early career choices for the majority of dental graduates have been determined and this provides useful information for all stakeholders in the RPP.

Study group for overall analysis

During the period 2000 to 2002, a total of 128 final year dental students participated in the RPP. The total number of students graduating from the Faculty of Dentistry over this time was 228. Those students who participated in the RPP therefore comprised 56% of the graduating students from 2000 to 2003.

Of the 228 graduates, it was possible to locate 214 (90%) and determine their year 1 career choice. Four RPP students and ten RPP students could not be traced through
public records. As many of the 128 RPP participants had maintained varying degrees of contact, email was used as an initial basis for data collection. The dental register, maintained by the Dental Board, and ADA records validated information and provide details of practice location for 114 dental graduates.

**Year one career choice**

Tables 45 a) - e) summarise the year one career choices made by each of the graduating cohorts and all of the graduates of the Faculty of Dentistry from 2000 to 2003. ARIA classifications have been used as described previously. Graduates working overseas have been included in the ‘non rural’ group. The outcomes and analyses therefore relate to those graduates who chose to work in ‘Rural’ (MA, R and VR) areas anywhere in Australia compared with those not working in ‘Rural’ areas.

**Table 45a: 2 x 2 table to show year one career choice for dental graduates from 2000**

<table>
<thead>
<tr>
<th>(n=50, two missing values for non-RPP students)</th>
<th>Working in ‘Rural’ area</th>
<th>Not working in ‘Rural’ area</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended RPP</td>
<td>8</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Did not attend RPP</td>
<td>7</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>TOTAL</td>
<td>15</td>
<td>35</td>
<td>50</td>
</tr>
</tbody>
</table>

A total of 15 students (30%) chose to work in rural areas on graduation. 16% more RPP students worked in rural areas than non-RPP students. The odds ratio was 2.19 however the chi-squared test confirmed that this result was not statistically significant ($\chi^2 = 1.587; 1\text{df}; P=0.21$). The 95% confidence interval for the difference covered the range from 9% more rural employees in the non RPP group to 43% more rural employees in the RPP group.
Table 45b: 2 x 2 table to show year one career choice for dental graduates from 2001

<table>
<thead>
<tr>
<th>(n=52, four missing values for three non-RPP and one RPP students)</th>
<th>Working in ‘Rural’ area</th>
<th>Not working in ‘Rural’ area</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended RPP</td>
<td>8</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>Did not attend RPP</td>
<td>9</td>
<td>16</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17</td>
<td>35</td>
<td>52</td>
</tr>
</tbody>
</table>

A total of 17 (33%) students chose to work in rural areas on graduation. This proportion is similar to that of graduates in the 2000 graduating group (30%). 30% of RPP students were working in rural areas and 36% of non-RPP students were working in rural areas. The odds ratio for this group was less than one (0.75). The RPP did not have a statistically significant effect ($\chi^2 = 0.239; 1$df; $P=0.62$) on the 2001 cohort compared to those who did not attend. The 95% confidence interval for the difference covered the range from 31% more rural employees in the non RPP group to 19% more rural employees in the RPP group.

Table 45c: 2 x 2 table to show year one career choice for dental graduates from 2002

<table>
<thead>
<tr>
<th>(n=53, six missing values for two RPP and four non-RPP students)</th>
<th>Working in ‘Rural’ area</th>
<th>Not working in ‘Rural’ area</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended RPP</td>
<td>11</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td>Did not attend RPP</td>
<td>9</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20</td>
<td>33</td>
<td>53</td>
</tr>
</tbody>
</table>

A total of 20 (38%) students chose to work in rural areas on graduation. This is a similar proportion of graduates to the 2000 and 2001 graduates (30% and 33% respectively). 36% of RPP students were working in rural areas and 39% of non-RPP students were working in rural areas. Again, the odds ratio for this group was less than
one (0.9). The RPP did not have a statistically significant effect \((x^2 = 0.033; 1\text{df}; P=0.85)\) on the 2002 cohort compared to those who did not attend. The 95\% confidence interval for the difference covered the range from 28\% more rural employees in the non RPP group to 23\% more rural employees in the RPP group.

Table 45d: 2 x 2 table to show year one career choice for dental graduates from 2003

<table>
<thead>
<tr>
<th></th>
<th>Working in 'Rural' area</th>
<th>Not working in 'Rural' area</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended RPP</td>
<td>12</td>
<td>35</td>
<td>47</td>
</tr>
<tr>
<td>Did not attend RPP</td>
<td>1</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13</td>
<td>46</td>
<td>59</td>
</tr>
</tbody>
</table>

A total of 13 (22\%) students chose to work in rural areas on graduation. This is a lower proportion of graduates than the 2000, 2001 and 2002 graduates (30\%, 33\% and 38\% respectively). 25\% of RPP students were working in rural areas and 8\% of non-RPP students were working in rural areas; 17\% more RPP students worked in rural areas than non-RPP students. The odds ratio for this group was 3.77. These percentages were not statistically significant \((x^2 = 1.646; 1\text{df}; P=0.2)\) for the 2003 RPP cohort compared to those who did not attend. The 95\% confidence interval for the difference covered the range from 9\% more rural employees in the non RPP group to 43\% more rural employees in the RPP group.

Table 45e: 2 x 2 table to show year one career choice for all dental graduates from 2000 to 2003

<table>
<thead>
<tr>
<th></th>
<th>Working in 'Rural' area</th>
<th>Not working in 'Rural' area</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended RPP</td>
<td>39</td>
<td>85</td>
<td>124</td>
</tr>
<tr>
<td>Did not attend RPP</td>
<td>26</td>
<td>64</td>
<td>90</td>
</tr>
<tr>
<td>TOTAL</td>
<td>65</td>
<td>149</td>
<td>214</td>
</tr>
</tbody>
</table>
30% of the entire cohort worked in rural areas immediately after graduating. 31% of all RPP students were working in rural areas and 29% of non-RPP students were working in rural areas. The odds ratio for this group was 1.13; this is not significant. The 2% percentage difference was highly statistically significant ($x^2 = 24.12; 1\text{df}; P<0.0001$) for the 2003 RPP cohort compared to those who did not attend. The 95% confidence interval for the difference covered the range from 9% more rural workers in the non RPP group to 14% more rural employees in the RPP group. This confirms that over the entire group, there was no significant difference in rural year one employment for RPP and non-RPP students.

**Implications**

While the RPP had a statistically significant impact on the career interest scores of the 2001, 2003 and whole cohorts (pages 177, 261 and 277), this did not result in a statistically significant impact on year one career decision for any of the groups or the entire RPP cohort. It is important to note while the effect on the entire group is not significant, the program undoubtedly influenced several students at an individual level (pages 130, 177, 223 and 261).

The average percentage of new graduates from 2000 to 2003 who chose to work in rural areas during their first year of employment was 30%. If there are 64 graduates from the Faculty each year, this is likely to result in approximately 20 graduates working in rural areas on an annual basis. There are no graduate destination data available prior to 2000 against which to make a comparison. It is possible that the introduction of the RPP and the fact that most participants would recommend rural practice to colleagues had an impact on all of the students. A survey of those graduates who chose ‘rural’ employment in year 1 may provide valuable information on their career decision making and the potential influence, whether direct or indirect, of the RPP. The effect of the RPP on career decision making in subsequent years would also be worthy of future investigation. Over the entire cohort, 18% of graduates chose to work in a teaching hospital environment. It is possible that the introduction of similarly
supported year one experience in regional and rural areas may be of greater attraction to new graduates.
CHAPTER 12

CONCLUSIONS AND RECOMMENDATIONS

The 128 students who participated in the RPP were placed in a total of nine Area Health Services accredited by the Dental Board of NSW. The students were based in eleven community dental clinics and provided additional clinical services on an outreach basis.

The RPP was developed and implemented by an academic coordinator, supported by twelve local coordinators, twenty six clinical mentors and over one hundred additional staff. Many of these staff had ongoing involvement from 2000 to 2003.

Stakeholders in the RPP were the Faculty of Dentistry, ADA NSW, the UDRH at Lismore and Broken Hill, the Oral Health Branch of NSW Health and the Dental Board of NSW. ADA NSW provided over $25,000 to support travel bursaries and the Oral Health Branch provided additional local support.

The original aims of the RPP were achieved. The program provided a student-centred experiential learning opportunity, contributed to clinical care for local residents and resulted in positive attitudes to rural lifestyle and dental practice.

Using an action research methodology with triangulation of qualititave and quantitative methods, additional research questions were generated throughout the study and an overall analysis has been provided. This provides future direction for research associated with rural placements and opportunities for collaboration with stakeholders to investigate other recruitment and retention strategies.

This chapter summarises the findings from the research in five separate sections. Recommendations are made in each section and are summarised at the end of this chapter.
EXPERIENTIAL LEARNING

Practical considerations

The strengths and limitations of the RPP have been described. Based on personal reflections, student and staff feedback the program was undoubtedly student-centred however total commitment to providing such an opportunity over a two-week period was demanding for both staff and students.

Program structure

The balance and structure of the program was recognised with students appreciating the range of experiences provided for them. Location-specific limitations were reported. These were due to either local mentor’s interpretation of the aims of the program or the unavailability of various opportunities. An example of the latter was the students’ desire to work with the RFDS dentist when such opportunities are only available at Broken Hill. Within very broad guidelines, local mentors were encouraged to develop programs that optimised existing clinical opportunities. While the program structure differed at the various locations, an opportunity to share the various learning experiences was provided at the post-placement briefing. The attendance at these sessions was variable.

The introduction of mandatory placements necessitates consideration of a more ‘standardised’ experience, particularly if the clinical care provided during the program is an integral element of clinical experience and assessment. The RPP has successfully provided students with a brief exposure to rural lifestyle and practice and if this continues to be the primary aim, variable program structures will not be detrimental. Independent of future directions and based on outcomes from 2002 and 2003, basic program structure guidelines that define specific program elements, should be provided to mentors.
Pre-placement briefing

As described, the aims of these sessions varied according to the program structure and were achieved to a varying extent dependent upon the numbers of students attending. Considerable time was spent addressing the practical concerns despite the students having been provided with a comprehensive handbook and the opportunity to email the coordinator with such concerns. As the BDent students will be fully conversant with the use of Information Technology and will be used to receiving and providing web-based information, it is anticipated that this element of the pre-placement briefing will be significantly reduced. It is recommended that the handbook is available through the BDent website and that the RPP coordinator is available through an electronic forum.

Reflection on previous learning and attitudes was included in the session in 2000 and 2002 when reflective statements were a requirement of the program. In 2001 and 2003 there was insufficient time to include this element however the acknowledged value of pre-experiential reflection for subsequent learning indicates that this element should be a component of the pre-placement briefing.

As the students were required to develop individual learning contracts and self-assessment criteria this required unanticipated levels of academic support. While students were able to develop learning themes, academic support was required to develop these into learning contracts. The BDS students were generally unfamiliar with the concepts and practicalities of self-assessment. It is expected that the BDent students will have worked with learning contracts and have existing self-assessment skills. This is likely to decrease the requirement for academic support. Learning contracts and self-assessment are considered further below.

The motivating factors for student participation were highly consistent and in alignment with individual learning goals. These were used to establish core components of the orientation program. In light of mandatory participation and based upon co-researcher input into this study, this element will not be required in future pre-placement briefings.
Two week placement

The RPP structure was developed with specific reference to students’ identified goals and motivating factors. The orientation program components, range of experiences and opportunity to provide clinical care were designed to be in alignment with these goals. This student-centred structure and the consequent experiential learning opportunities, should be maintained however it is important to consider the primary role of the RPP. Of the three original RPP aims, the development and implementation of a student-centred experiential learning experience should now be considered as an RPP objective.

The RPP aims therefore become twofold; to develop a positive attitude to rural lifestyle and dental practice, and to contribute to dental care for rural residents. As the RPP is a two-week program with a maximum of seven working days available for clinical care and mindful of the findings from this study that indicate the major strength of the program was the exposure to rural lifestyle and practice, it is recommended that the latter becomes the primary focus for the mandatory RPP. Obviously this does not preclude clinical experience during the RPP; opportunities for additional clinical experience were clearly identified as student goals and have implications for stakeholder involvement.

Opportunities to develop additional optional rural experience, with clinical experience as a primary aim, should be investigated. Many students referred to the possibility of longer placements and noted that the development of learning contracts and goals was limited by their lack of prior rural experience. Initial investigative experiential placements would facilitate the development of rigorous learning contracts with the opportunity for longitudinal research projects based in rural locations.

Orientation

Orientation programs held at the UDRH at Broken Hill were more successful than those held in either Sydney (2003) or in Port Macquarie (2002). Camaraderie and peer support for learning were evident with students resident in the orientation location. In
addition, the academic support provided by the multi-disciplinary staff at the UDRH ensured that all planned elements of the orientation took place. The ability to develop learning contracts and self-assessment with individual students on an ad hoc basis was a strength; academic support was provided before breakfast, during lunch breaks and while transporting students around Broken Hill.

Modifications to the learning and assessment elements (see below) would mean that this level of academic support would no longer be required and this might support larger group orientation at a central location. This would also undoubtedly decrease program expenses.

If orientation were to be centralised, potentially in Sydney, this would reduce the time commitment made by academic and professional colleagues who facilitate the various orientation components. The input from the UDRH staff would be limited although additional learning sessions could be arranged for those students subsequently based at Broken Hill. In this situation, orientation could then be provided on a whole-group or smaller group basis. If the former, this would need to take place at the beginning of the year to ensure that all students participated prior to their placements. Students attending the RPP later in the year may have limited recollection of an early-year orientation and this would favour smaller group orientation just prior to the clinical placement. In either case, the length of the clinical placements would be increased.

From a practical perspective central orientation has significant merits however the RPP experiences to date have indicated that those students attending the orientation at Broken Hill have benefited from the larger group size in terms of peer support. The sense of camaraderie and adventure had a significant impact on several students who, by their own admission, had spent little time with student colleagues prior to the RPP.

From a personal perspective, the immeasurable support provided by the staff at the UDRH was invaluable in program administration, organisation and delivery. The commitment to rural dentistry was integral to associated research and political endeavours.
The content of the orientation will be determined by the learning and assessment requirements however the program should include cross-cultural awareness, the ADANSW Risk Management session, Area in Context and Oral Health issues in rural and remote areas. The orientation also provides scope to include additional curriculum competencies according to need and applicability. The coordinator should liaise with the Associate Dean (Curriculum) to develop problem-based learning opportunities to achieve these competencies.

The RPP orientation included social elements and it was apparent that students attending orientation outside Sydney participated in, and enjoyed, the social program. The majority of students referred to their enjoyment of the RPP and the social elements are likely to have been influential. As the aim of the RPP is to support the development of positive attitudes to rural lifestyle, social elements remain a key component. This is a central role for the UDRH at Broken Hill who have a full-time student coordinator to assist in the provision of such opportunities.

It is therefore recommended that the RPP in 2004 provide an opportunity to evaluate the two different approaches to orientation. Providing half of the BDent cohort with a Broken Hill based orientation and half with a city-based orientation would allow evaluation of costs, benefits and outcomes.

Clinical placements

As described above, broad guidelines for program development were provided to local mentors. Mentors were encouraged to develop and submit proposed clinical rosters for coordinator input. This was achieved in 2000 and 2001 as the program was smaller and the level of academic involvement higher. The coordinator amended rosters to optimise clinical experience and minimise non-clinical time.

In 2002, some of the mentors were unable to finalise and send rosters to me prior to the placements. This led to a wider variation in experience than had been anticipated. In an
attempt to address this in 2003, mentors were provided with a ‘roles and responsibilities’ document that defined timing requirements. Despite this, two mentors did not supply draft rosters and again, the program structure was varied. It transpired that one of the mentors had been inundated with offers of support from local dentists and had arranged practice visits with all of these dentists. All of the students attending these placements indicated that they would have liked more clinical experience and less observation. Another mentor had not pursued contacts with the local profession and as a consequence the students did not visit any practices.

Independent of considerations of program aims, it is recommended that mentors be provided with a ‘roster template’ to indicate desired program structure with an indication of the amount of clinical experience desired. It should be remembered that each mentor has different resources (infrastructure, support personnel and clinical supervisors) available and that this will have an impact on clinical rostering. It is recommended that an agreement be established with the OHB and the local mentors to ensure that minimum clinical session numbers are attained. This would require an acceptance that OOS for the duration of the program may decrease (see below). If clinical experience remains a primary aim for the RPP, the number of clinical sessions expected may be higher than if this becomes a secondary aim (see above).

There were no staff or student concerns about clinical supervision and it is therefore assumed that the terms of the MOU and the level of staff support provided were adequate. This should be maintained and all staff involved should be aware of supervisory requirements.

Post-placement briefing

The attendance at these sessions was variable. There was no discussion of ‘critical incidents’ although students enthusiastically discussed their positive experiences from the RPP. This information has been quoted elsewhere in this research. As described in chapter 2 the BDent students will participate in a conference week at the end of Year 4. Students will be required to present their research and to report on experiences from
their elective and rural placements. Reflection on these experiences will facilitate shared learning and will provide an opportunity for discussion of career paths and issues of professional development. This will fulfil the aim of the current post-placement briefing session. It is recommended that students submit learning and assessment elements electronically thus obviating the need for this post-placement session.

Placement locations
All of the mentors at the existing clinical placement locations have indicated their ongoing support for the program. The need to accommodate 64 students on mandatory placements and on a continuing basis requires careful consideration. This is compounded in 2004 by the need to provide elective RPP opportunities for final year BDS students. It is also important to avoid placing excessive demands on mentors and host clinics.

It is therefore suggested that in 2004, two placement options are provided for BDent students. Placement 1 would be based in Broken Hill with students attending clinical placements in Broken Hill, Dubbo and Orange. Placement 2 would comprise a Sydney orientation with students subsequently attending clinical placements in the Northern Oral Health Network. Students wishing to stay close to Sydney would be accommodated in the Hunter AHS and in newly established locations. Independent of any decision to introduce longer elective rural placements, additional placement locations will need to be identified for those students unable to leave family for two weeks. Such opportunities may exist within the Greater Sydney area. The criteria for placement in closer locations will need to be defined.

Placements 1 and 2 would be offered at different times during the year. BDS students could be offered placements in Broken Hill, Albury and Queanbeyan during the four-week inter semester break. This would provide up to 28 placements. Orientation for this entire group would be in Sydney. Additional placements could be developed to increase the number of BDS places.
If the recommendation for mandatory rural placements followed by extended elective rural placements is accepted, consultation with mentors at the existing clinical placement locations should be initiated to determine the viability of both short and long placements in their areas. With the support of the Oral Health Branch, additional locations could be developed as described in chapter 11.

**Participants**

All final year students will be required to attend the RPP. If longer additional rural placements are developed, the number of places available will need to be determined mindful of local mentors and service provision requirements in the teaching hospitals.

**Timing**

While 2004 provides a unique challenge in accommodating two final year cohorts, the timing of the RPP is dependent on several factors. Students attending the RPP will obviously not be able to provide clinical care at the teaching hospitals; if all of the students attend the program en bloc there will be clinical care implications. While there are two groups of final year students there will undoubtedly be pressure on the existing teaching hospital infrastructure. The opportunity to rotate students to extramural facilities will ease this pressure.

The level of clinical expertise is likely to vary within the final year cohort. While many students will have the skills and expertise to provide care in a rural setting, other students may benefit from additional experience in the teaching hospital environment.

Simultaneous placement of all final year students would place considerable pressure on the RPP coordinator. The level of personal support would be greatly diminished. Based on the experiences in 2004, this could result in decreased support from RPP staff and decreased compliance from students. The latter could be addressed through learning and assessment requirements.
It is recommended that the RPP be staggered with four placements spread over the final year. With a maximum student cohort of 64, up to 16 students would attend each placement. Placements 1 and 2 would be alternated to avoid excessive demands on rural mentors. Each location would therefore have 4-5 students present for a maximum of four weeks per year (under four weeks for the Placement 1 students who would have orientation in Broken Hill). Students would indicate their placement preference and finalise this in consultation with their academic mentors in the teaching hospitals.

**Academic support**

Currently, the academic appointment of the RPP coordinator is at Senior Lecturer level on a 0.4 Full Time Equivalent (FTE) basis and is jointly funded by the Faculties of Medicine, through the UDRH at Broken Hill, and Dentistry. Appointment at this level has intrinsic research, service and administration requirements, particularly for academic career advancement.

The level of academic support required throughout the RPP is high, as participating students require considerable input into learning and assessment requirements. Rationalisation of these components would ease the academic burden. Facilitation of orientation components during the program is also required. The larger numbers of students and placements associated with the RPP 2003 demonstrated that large numbers of students in diverse locations resulted in sub-optimal levels of support. Staggered placements would address this issue.

The initial development and subsequent revision of the RPP required considerable administrative effort. As noted throughout this thesis, considerable time was spent travelling between the various locations. Electronic communication and teleconferencing assisted with staff support however those mentors who received personal, face-to-face support had a greater appreciation of the RPP. While some travel expenses were provided by the UDRH at Broken Hill, a large proportion of the RPP associated expenses were borne by the coordinator. It is recommended that all travel
and communication expenses are provided and that this should be negotiated between the Faculties.

Fractional appointment has considerable advantages in terms of employment diversity, career flexibility, personal development and income generation, and more generally, the benefits offered by university employment. The nature of this academic appointment does however require sufficient flexibility that the coordinator can spend blocks of time on site.

With four two-week placements and the associated administrative load, and more particularly, the pressure of two cohorts in 2004, the need for decreased research and/or service requirements should be considered. If longer rural placements are developed, it is likely that a full time rural academic would be required. Full time employment would allow sufficient time for all academic commitments and would therefore have greater appeal for an academic seeking career advancement.

Information Technology

There was a low level of use of electronic communication during the RPP. It is expected that the BDent students, who have participated in web-based education throughout their degree program, will have higher levels of participation. The use of web-based forums to contribute to group discussion and evaluation is also likely to be higher and should be promoted to the students. As mentioned above, the ability to submit learning and assessment elements electronically should also be investigated.

While videoconferencing provides the possibility for rural orientation on site, this technology was not readily available at all clinical sites during this study. As the technology becomes more reliable, it is feasible that all students could travel to clinical locations and participate in orientation and problem-based learning via this medium. This would be particularly beneficial if longer rural placements were developed; students on placement would be able to participate in all teaching hospital based curriculum elements. It is also likely that videoconferencing would reduce the
requirement for site visits for academic support and it is recommended that this option be pursued.

**Student learning**

The RPP allowed the opportunity to use various student-centred learning and assessment tools.

Reflective statements provided considerable insight into personal construct and there was a high level of response to this element. It was suggested that students should maintain a ‘learning journal’ to support the compilation of the statements and several of these were submitted in 2000. While journals were advocated to subsequent groups, the level of emphasis was far less than in 2000. All students were aware that these journals were confidential and were for personal learning benefit. The number of students using journals therefore cannot be determined. From a personal perspective, the use of a journal from 2000 has allowed me to review and reflect on incidents that I could not even remember! The journal has also allowed me to reflect on my personal and professional growth as a researcher. This is discussed further below. It is recommended that students be required to submit reflective statements in fulfilment of PPD requirements (see chapter 2). Despite the lack of objective evaluative tools for such statements, evidence of reflection, attribution of meaning and evidence of ongoing learning are evidence for desired graduate outcomes.

At various times, and as described in Phase 2, ‘learning outcomes’, ‘learning goals’ and ‘learning contracts’ were included within the RPP structure. While there were reported student benefits to each of these, the variable response rates and the annually changing requirements preclude definitive conclusions as to which element was most effective in promoting learning. It is apparent that the RPP experience itself was of immense learning value to the students and it is arguable that this learning would have occurred independent of the selected learning strategy. Fulfilment of learning contracts undoubtedly provides opportunity to objectively assess the student. There was an eclectic group of learning contracts defined by RPP students; these were constructed
with reference to personal goals and showed considerable diversity in content area and depth. If completion of a learning contract is used as an assessment tool, there will need to be guidelines for such contracts. Mindful that the program is relatively short and the support levels required are high, there is potential to develop a list of learning contracts for students to choose from. This strategy might assist future research into rural placements and may also provide a structure for other areas of rural research. This may also provide opportunity to focus student learning onto oral health issues affecting rural and remote communities.

**Student assessment**

As an integrated and mandatory curriculum component, there is a need for academic rigour with regard to assessment of the RPP. Any strategy must be in alignment with University and Faculty assessment principles (see chapter 2) and should also be aligned with the curriculum objectives.

With the primary aim of having a positive impact on perceptions of rural lifestyle and practice, the RPP clearly lies within the PPD theme. Elements of the program also lie within the D&C theme and there is potential for an increased D&C component based on the comments relating to learning contracts above. LS and TPC theme content could also be included within a problem-based approach however it is recommended that the primary thematic domain for this assessment is PPD. If longer placements are developed then opportunities exist to include TPC and clinical competency assessment methods.

The lack of objective criteria to assess personal writing has been discussed. It is therefore recommended that the RPP assessment be non-graded and summative for PPD (see later)

The value of self-assessment has been considered at length and with reference to the literature (see chapter 3). The students also acknowledged the value of this assessment and generally, despite the voluntary nature of the program, response rates were high.
As the BDS students had scant knowledge of self-assessment, considerable support was required to develop areas and criteria for assessment. While the BDent students are likely to be more conversant with this strategy, the current structure still requires students to determine the areas in which they wish to assess themselves and then develop appropriate criteria for this assessment. Inclusion of the RPP within the PPD theme provides structure for both of these elements and it is likely that an existing self-assessment strategy can be modified for use in the RPP. It is therefore recommended that existing self-assessment methods used in the PPD theme are reviewed and amended as required for use in the RPP.

Peer assessment was used in the RPP 2000. Half of the students selected this method and reported that they had found this a difficult and unreliable method to use. As there was intensive academic support required and in view of the additional academic burden imposed by mandatory placements, it is recommended that peer assessment is not included in the RPP.

Several students commented that the ability to provide clinical care without formal assessment assisted their learning in this environment. In 2003, clinical supervisor assessment was included as an element of the program and there was a high level of compliance with this. Some students sought assessment from all staff involved and others selected mentor assessment only. During subsequent discussions, it appeared that external assessment was used for personal validation. This is difficult to substantiate however as fewer students returned self-assessments than staff assessments. It is recommended that students be encouraged to obtain oral feedback from staff and reflect on this, in conjunction with their self-assessment, in their reflective statements.

Based on these observations it is therefore recommended that the RPP be summatively assessed within the PPD theme in a non-graded fashion. Successful completion of the RPP would require students to submit as a minimum, a

a) reflective statement (with reference to staff feedback), and

b) self-assessment.
Depending upon the introduction of additional problem-based learning, there is an option to use learning contracts although this will require further consideration as described above.

Students failing to submit either or both of these requirements would be required to complete an additional PPD assessment requirement as decided by the Theme Head.

Program evaluation

Many of the evaluative tools used during the RPP were designed to serve the dual function as research tools. Individual and group interviews were originally designed for research purposes only but as has been discussed elsewhere, the relationships between fourth generation evaluation, qualititative research methods in the context of action research and action learning are symbiotic. While this research concludes with the 2003 cohort there is considerable scope for the RPP research to continue. Areas for future research are considered later in this chapter. If research into this program is to continue, it is recommended that evaluation tools include the same measure of career interest as used in this study. As a minimum, investigations into perceptions of advantages and limitations of rural careers would also inform stakeholders and future professional initiatives although the method for collecting this data might be improved (see later).

Mindful of the Faculty’s decision to develop evaluative tools that consider both outcomes and delivery, an appropriate open and closed response questionnaire should be made available on the BDent website through a rural bulletin board. A brief pre-placement questionnaire would facilitate ongoing research as discussed above. Both forms should be submitted electronically. The use of the website for submission of evaluation data and immediate feedback has been highly successful and this facility will be used for RPP feedback from 2004.
The role of the stakeholders has been discussed in Phase 2 and ongoing evaluation of the ADANSW Risk Management session will be required. In order that this is tailored to the needs of ADANSW, it is recommended that this discrete evaluation be administered on completion of the session. If longer placements are developed, it may be pertinent to request feedback in the form of a modified Student Experience Questionnaire to determine approaches to learning during the RPP (see later). While this tool would also be valid for the shorter RPP, it is important that students are not subjected to excessive evaluation processes. Use of the Student Experience Questionnaire with specific additional open response items is worthy of consideration and investigation of this option is recommended.

Professional collaboration

The role and importance of the various stakeholders has been discussed. The need for ongoing collaboration and reporting is apparent. As the RPP involves more students and if longer placements are developed, additional support from both existing and additional stakeholders will be required. Program costs could be minimised with central orientation and as suggested above, this option should be pursued.

Should further clinical locations be identified, support from the Dental Board will be required for accreditation purposes. It has been suggested that students could provide clinical care for public sector patients under the Oral Health Fee for Service scheme; this provides authority for the provision of care in private practice. The lack of professional practice accreditation processes means that accreditation by the Board would be problematic, however as professional accreditation evolves, this may become possible in the future.

There is a national and state precedent for supporting rural placements for health students; despite repeated attempts from 2000 to 2003, support for dental students has not been forthcoming. It is recommended that attempts to garner national and state funding for the RPP continue. The central funding provided by the Oral Health Branch provides $8,000 for local costs. This equates to $125 for each of the 64 students. As
noted by the Network Manager in 2002, the approximate cost to the Network for each student was $450. There is obviously a need to request additional funding to cover the additional student places. In addition the existing MOU with the various Area Health Services expire in 2005 and will require re-establishment. Should additional placements be developed, new MOU will be required.

It was apparent during the RPP, particularly in 2003, that the students considered the range of clinical service provided within the public sector to be limited. This information has direct relevance to the Oral Health Branch as it develops recruitment and retention strategies (see below).

The existing level of funding provided by ADANSW and GIFS will provide an average of almost $400 for each of the ultimate cohort of 64 students. As travel costs vary according to destination, it is recommended that the travel bursaries be allocated to each student according to the cost of public transport to their destination. The students may then choose to pool this money and travel by private vehicle. At the time of writing an MOU to this effect, between the Faculty and the ADANSW, is under consideration.

The outcomes of this research support the need for further research and the development of additional recruitment and retention strategies. The dental workforce issues affecting rural communities have been documented in chapter 3. More recently, a report from the Dental Statistics Research Unit at Adelaide has estimated that in order to address projected dental workforce needs, each dental school needs to increase its number of graduates by 25 per year (215). While this may provide the number of dentists required, it is important that strategies to recruit and retain dentists in the rural, and especially public sector, workforce. The report also confirmed the existing differences between metropolitan and rural areas.

In 2002 (152) there were 47 dentists resident and practising in 'Moderately Accessible' (MA), 'Remote' (R) or 'Very Remote' (VR) communities (153). The majority of these dentists had graduated more than 20 years ago and 46 were male. 19 of this group
(40%) responded to a questionnaire and of these 18 (95%) indicated that they planned to retire or leave their rural practice within the following five years. As described, it was anticipated that the RPP would assist in efforts to recruit new graduates to rural areas.

While the program had a significant effect on rural career interest scores, there was no significant difference in the percentage of the participating students who worked in rural areas in year one of employment compared with those who did not participate in the program. On average from 2000 to 2003, 30% of each year chose to work in rural areas throughout Australia in the first year of employment; this equates to approximately 19 graduates per year. If all of these graduates chose to work in rural NSW, this would maintain the status quo however it would not provide sufficient numbers for the predicted increased workforce needs.

Any increase in recruitment is therefore significant. In light of this and despite the statistics for the entire RPP cohort, the program undoubtedly led to at least six participants choosing to work in rural areas. Personal email messages attest to the influence that the RPP had on their decision-making. However, based on reported outcomes, the RPP in itself will not address the current and predicted rural workforce issues. Other schemes such as student scholarships and bonding should be considered.

This study considered the year one career choices made by all final year graduates. As the RPP made a significant difference to career interest scores, a longitudinal study of all RPP participants is warranted to determine whether there is any significant impact on later career choice.

The advantages and limitations of a rural career, as documented by the RPP students, provide insight into barriers to recruitment (see chapter 11). It is recommended that strategies to both maximize the perceived advantages and/or minimise the perceived limitations be developed in collaboration with stakeholders. Such strategies might include a targeted promotion campaign to new and recent graduates that focuses on the rural lifestyle, range of clinical experience and the associated community spirit. Either
direct or indirect, for example through student loans, financial enhancement might be offered to offset costs associated with visiting family and friends. Strengthening professional support may also assist and, as a consequence of the RHSET project (152), this is an initiative being developed by the ADA, in the form of a Rural Dentists Network. As many of the perceived advantages and limitations are specific to individuals, the provision of individual mentoring and practical support may also be of assistance. As many new graduates (average of 22% over the whole RPP cohort) chose to spend their first year in the supportive teaching hospital environment, strategies such as Vocational Training in both rural and metropolitan areas would assist in recruitment and thus allow a focus on the development of individual retention strategies and packages.

Provision of clinical care
While the RPP students provided clinical care for residents, the amount of clinical experience obtained was varied. There were no reported adverse clinical incidents and patients were reportedly pleased with the clinical care that the students provided. Staff feedback was positive with reference to their professionalism, communication and clinical skills. In its current format, the RPP provides a maximum of seven days for students to provide clinical care. Realistically, this is unlikely to make a significant difference to clinical output unless vacant facilities exist. As mentioned above, it is recommended that mentors be provided with an indication of minimal clinical experience required. As has also been previously recommended, clinical experience should be considered a secondary aim for the RPP and longer additional elective placements, with a major focus on clinical care, should be developed. Some students commented that the range of clinical experience obtained was limited. This is not considered to be a significant issue for the RPP however if longer placements are developed, the range of clinical experience obtained will require greater scrutiny.

A major deficiency of this study (see below) was the inability to determine exact records of treatment provided on which to determine clinical output during the RPP compared with usual clinical output. During the RPP it became apparent that there was
little motivation for either the staff or the students to maintain accurate statistical records. Additional academic support and guidance is required. The available evidence would suggest that there is little difference between the Occasions Of Service (OOS) provided during the RPP. This is consistent with rural placement experience in South Australia [Richards, 2002 #22].

The Information System for Oral Health (ISOH) has this capacity however compliance with the request for such data was limited. As students are familiar with this system it is difficult to explain why the data was not consistently collected. Additional staff support is required in this area to develop accurate accountability. It is highly recommended that a consistent approach to the recording and reporting of OOS data is developed and implemented.

**RESEARCH CRITIQUE**

The decision to use an action research methodology and both qualitative and quantitative methods was valid. While the statistical analysis in chapter 11 provides an oversight into the outcomes of this study, the thesis is enriched by the qualitative data provided by co-researchers. The action research methodology allowed the research aims and methods to be continually revised based on the outcomes of the previous research cycles.

This cohort study included all RPP participants but did not include any data from non-participants. The research would have been enriched by collecting data from non-participants specifically with regard to rural background, perceived advantages and limitations of rural careers, and rural career interest scores. Statistical analysis of participant career choice indicated that an average of 30% of participants selected rural practice on graduation. The ability to determine year one career details for non-participants from public records and personal contacts, has demonstrated that there is no significant difference in career choice between the two groups. The need for a longitudinal study of graduate career destinations is apparent as the RPP may have an impact on later career choice.
The only variable considered in the analysis of the two groups was participation in the RPP. There are numerous other factors that contribute to career decision-making and using the non-participants as a control group is therefore flawed. Ideally, the final year student group would have been randomly allocated to attend the RPP. As the aim of the voluntary RPP was to provide as many students as possible with the opportunity to participate, this was not considered to be an option.

The student-centred program was developed in alignment with BDent curriculum goals (see chapter 2). It would have been interesting to investigate the outcomes from a traditional, didactic program to determine whether the student-centred program was of greater significance, particularly in terms of supporting the development of positive attitudes to rural lifestyle and dental practice.

Ethical requirements meant that students’ failure to participate was not questioned and those who did not respond were not subject to any prejudice. As several of the research methods were also educational requirements of the program, this meant that submission of these elements was not enforceable. As the students were aware of this it resulted in a minority of students who attended the RPP 2003, failing to comply with any of the required educational elements. This could have been addressed by clearly differentiating between research methods and educational elements however the amount of qualitative data available would have been reduced.

Action Research requires involvement of the chief researcher and as a consequence, I was personally involved with all elements of the RPP. As a participant, the researcher is unable to be ‘objective’ and the co-researchers had full awareness of my role. This may have led to bias during data collection. As I had initiated the RPP concept, was involved in program delivery and was also researching outcomes, it was not difficult for students to determine my commitment to the program. Strong personal relationships and empathy were established during the program and it is possible that students recorded increased levels of interest and provided positive comments, in an attempt to respond in the way that I wanted them to. This might be countered by
evidence from the 2003 cohort, with whom I spent considerably less time, but on whom the program had a significant effect (chapter 11).

Time constraints and the end of my employment contract meant that I was not able to obtain the same amount of information from stakeholders and co-researchers after the RPP 2003. This was a limitation of this research although it had originally been anticipated that the research would encompass the RPP from 2000 to 2002. The addition of data from 2003 has supported the findings from previous years and more importantly, has provided valuable input to the recommendations in this chapter.

While this thesis contributes to knowledge in the area of rural placements to students, the outcomes cannot be generalised. The failure of co-researchers to formally validate RPP reports is a limitation however it can be argued that a failure to question the reports infers tacit approval. The verbal validation obtained by telephone contact would support this assumption.

There are limitations to this research however the outcomes contribute to the developing literature relating to rural dentistry and specifically, dental student placements. There has been little research into the latter and this research provides a platform for future research.

**AREAS FOR FUTURE RESEARCH**

Based on this research and as stated above, the RPP in isolation is not likely to address rural workforce needs. There are however areas worthy of future research. These can be grouped into two broad categories.

**Research into rural placements for dental students**

The introduction of mandatory placements provides an opportunity to research their impact against that of the voluntary RPP program. Similarly, a decision to focus the RPP aim (as recommended above) would provide opportunities for comparative analysis.
The development of a RPP database, that maintains employment records for all participants, would facilitate investigation into the later career choices made by those attending the RPP.

As all students will participate in the RPP from 2004, there is the opportunity to research the impact of the various program elements. As described above, the development of two different placements provides an opportunity to evaluate elements such as the location of the orientation program and the subsequent clinical placement.

Collection of OOS data will allow research into student productivity and will contribute to a valid cost benefit analysis of the RPP. There are opportunities to collaborate with other dental schools in comparative studies; the educational aims and dedicated student clinics associated with the South Australian model provide scope for comparative studies.

The introduction of a longer elective rural placement would be accompanied by research into short- and long-term outcomes. There would also be an opportunity to research the clinical experience obtained by participating students with those based in a metropolitan teaching hospital.

**Research into recruitment strategies**

As previously described, the findings from this research provide additional research opportunities and it is recommended that the faculty promote the establishment of a rural workforce group with stakeholder representation. This would provide leadership for professional collaboration in recruitment and retention strategies and would provide a research focus for all staff and students involved with the RPP.

In Chapter 11 I describe the associations between pre- and post-placement career interest scores and year one career choice. The faculty's admissions procedure allows evaluation of applicant motivation for a research career; the use of a career interest
score in its admissions policy would provide an indication of future career direction and, if approved by the Admissions Committee, would promote selection on this basis.

If longer elective placements were introduced this would provide significant opportunity to investigate other elements of the rural workforce and service provision. Students commented on the limited range of treatment provided in the Community Dental Clinics; this could be further investigated. Attitudes of dentists working in the rural public sector could be investigated. Similarly, there is only one female dentist working in MA, R and VR areas of NSW. As the proportion of female graduates increases this has significance and investigation of gender specific recruitment and retention strategies has merit.

Establishment of a rural workforce group would thus initiate, prioritise and coordinate collaboration in research into the rural oral health workforce. This would also provide opportunities for the recruitment of postgraduate research students.

SUMMARY OF RECOMMENDATIONS

Generic recommendations

It is recommended that the RPP should be included within the PPD and D&C theme group and that the Head of this theme should contribute to RPP development.

Assessment for the RPP should be summative and non-graded and should include reflective statements and self-assessment. The former should include reference to feedback from clinical supervisors and the latter should be based on an existing self-assessment template. Both of these elements should be submitted electronically on completion of the RPP.

The RPP should comprise a pre-placement briefing, an orientation program and clinical placements. It is recommended that the conference week, planned for the end of year 4, is structured to provide shared learning from the RPP.
The aims of the pre-placement briefing should be to establish collegiality and to introduce reflective practice and reflective statements. The RPP Handbook and self-assessment templates should be made available on the BDent website.

The RPP coordinator should liaise with the Associate Dean (Curriculum) to determine curriculum theme and competency requirements for the RPP and to revise the existing orientation program components to this end. It is recommended that the cross-cultural workshop, area in context session and ADANSW Risk Management session be retained in the orientation program.

RPP mentors should be provided with an indication of minimum clinical experience required for each student during the RPP. Mentors should access the BDent website to facilitate communication with students and the RPP coordinator.

It is recommended that a consistent approach to Occasions Of Service (OOS) data is developed and supported, and that there is agreement with the Oral Health Branch that the clinical placement of students during the RPP takes priority over OOS, to allay mentor concerns about decreased productivity. The OHB should be approached with regard to increasing central funding available to cover student accommodation and incidental program expenses.

The RPP evaluation should be based on the University’s Student Experience Questionnaire with the addition of career interest scores and of open response items that relate to advantages and limitations of rural careers. It is recommended that the Faculty’s existing web-based evaluation tools be expanded to allow electronic submission of RPP evaluative data. Evaluation of the ADANSW Risk Management session should be completed in hard copy on site.

It is recommended that the RPP coordinator’s travel and communication expenses be supported, subject to discussions between the Faculty and the UDRH at Broken Hill. Videoconferencing should be used to support staff development to minimise the need for travel.
Efforts to obtain federal and state funding for rural placements must continue. It is recommended that the Faculty establish a rural working group to support research and lobbying. The working group, with professional representation including rural practitioners, would initiate, prioritise and coordinate collaboration in research into rural oral health workforce issues.

**Practical recommendations for rural placements in 2004**

It is recommended that all BDent students should attend a two-week RPP during 2004 with the existing aims of promoting positive attitudes to rural lifestyle and dental practice, and contributing to service delivery. BDS students should be offered elective RPP places during the mid-semester break as determined by placement availability in the Southern and Western Networks. Additional clinical placements should be developed to allow maximum opportunity for BDS students and to provide additional, closer options for BDent students unable to leave Sydney. It is suggested that options in the greater Sydney area be pursued to this end.

The BDent RPP should be staggered throughout the final year with up to 16 students attending the RPP at any one time. It is recommended that two RPP options are developed, one based in the Far West Network and the other based in the Northern Network, and that these are used alternately. The former would comprise local orientation and the latter would comprise city-based orientation. Pre-placement briefings should be held in Sydney and post-placement briefings would be replaced with the shared learning opportunity provided by the Year 4 conference week.

It is recommended that the BDS students participate in pre-placement briefings, orientation and post-placement briefings in Sydney. The existing RPP structure and content should be retained for this group.
Recommendations for rural placements from 2005

It is recommended that from 2005 the RPP have a primary focus on the development of positive attitudes to rural lifestyle and practice with students able to provide clinical care during the program.

Opportunities for rural placements for more junior students should be investigated and elective programs optimised.

It is also recommended that additional, longer rural placements be developed for students. Selection criteria for these longer placements should be developed and suitable placements and mentors identified. The primary aim of the longer placements would be clinical care and students would attend as a rotation component of their final year of studies. To this end, the Faculty is developing six-month placements for final year students.
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# APPENDIX 1: SCHWAB’S TABLE OF INVENTION

<table>
<thead>
<tr>
<th>University of Sydney</th>
<th>Faculty of Dentistry</th>
<th>Students</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. University of Sydney</td>
<td>Need for community education ref strategic plan</td>
<td>Optimise collaborative work</td>
<td>Quality education</td>
</tr>
<tr>
<td></td>
<td>Commitment to rural ed.</td>
<td>Ensure good ed outcomes</td>
<td>VFM</td>
</tr>
<tr>
<td></td>
<td>Inter-fac collaboration</td>
<td>Community / Professional involvement</td>
<td>Generic attributes</td>
</tr>
<tr>
<td>2. Faculty of Dentistry</td>
<td>Policy</td>
<td>Curriculum development</td>
<td>Student-centred</td>
</tr>
<tr>
<td></td>
<td>Student support</td>
<td>Policy</td>
<td>Competency</td>
</tr>
<tr>
<td></td>
<td>Strategic direction</td>
<td>Research</td>
<td>Generic attributes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ed opportunities</td>
</tr>
<tr>
<td>3. Students</td>
<td>Infrastructure</td>
<td>Quality education</td>
<td>Friendship</td>
</tr>
<tr>
<td></td>
<td>Student support</td>
<td>Broad experience</td>
<td>Peer support</td>
</tr>
<tr>
<td></td>
<td>Policy</td>
<td>Mentoring</td>
<td>Group learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Input to decision-making</td>
<td>Cultural support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consultation</td>
<td></td>
</tr>
<tr>
<td>4. Stakeholders</td>
<td>Clear protocols</td>
<td>Communication</td>
<td>Support</td>
</tr>
<tr>
<td></td>
<td>Recognition</td>
<td>Opportunities for collaboration</td>
<td>Employment</td>
</tr>
<tr>
<td></td>
<td>Collaboration</td>
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<td>Collegiality</td>
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<tr>
<td></td>
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<td>Standards</td>
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## APPENDIX 2: DEVELOPMENT OF THEMATIC TABLE

<table>
<thead>
<tr>
<th>Co-researchers</th>
<th>Motivating factors</th>
<th>Research questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students</strong></td>
<td>Various: shared and individual – generated in pre-placement briefing</td>
<td>Did students achieve what they wanted to?</td>
</tr>
<tr>
<td><strong>Me</strong></td>
<td>Provide experiential learning opportunity</td>
<td>Did I provide an experiential learning opportunity?</td>
</tr>
<tr>
<td></td>
<td>Broaden OH into general health</td>
<td>Were the students aware of the role of OH in general health?</td>
</tr>
<tr>
<td></td>
<td>Address OH workforce issues</td>
<td>Has there been any impact on workforce?</td>
</tr>
<tr>
<td></td>
<td>Expand education beyond Uni</td>
<td>Does the RPP provide a template for extramural education?</td>
</tr>
<tr>
<td></td>
<td>Expose others to OH</td>
<td>Has there been any consequent inclusion of OH in other courses?</td>
</tr>
<tr>
<td></td>
<td>Keep teaching!</td>
<td>Did I keep teaching and did my skills develop?</td>
</tr>
<tr>
<td></td>
<td>Research</td>
<td>Did I learn how to do action research?</td>
</tr>
<tr>
<td></td>
<td>Enjoyable learning</td>
<td>Was it fun?</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Desire to support students</td>
<td>Did the staff support the students?</td>
</tr>
<tr>
<td></td>
<td>Honorary titles??</td>
<td>Was this an incentive?</td>
</tr>
<tr>
<td></td>
<td>Recruit colleagues</td>
<td>Did any staff recruit as a consequence of the RPP?</td>
</tr>
<tr>
<td></td>
<td>Passion for rural practice</td>
<td>Did the staff inspire the students?</td>
</tr>
<tr>
<td><strong>Faculty</strong></td>
<td>Develop student-centred curriculum</td>
<td>Is the RPP a student-centred curriculum?</td>
</tr>
<tr>
<td></td>
<td>Optimise educational opportunity</td>
<td>Did the RPP optimise educational opportunity?</td>
</tr>
<tr>
<td></td>
<td>Trial placements for BDent</td>
<td>How can the RPP develop into mandatory component?</td>
</tr>
<tr>
<td><strong>UDRH</strong></td>
<td>Multi-disciplinary student facility</td>
<td>Did the students meet other students?</td>
</tr>
<tr>
<td></td>
<td>Introduction of OH into other courses</td>
<td>Did we introduce OH into other programs?</td>
</tr>
<tr>
<td></td>
<td>Positive impact on workforce</td>
<td>Has there been any impact on rural workforce?</td>
</tr>
<tr>
<td><strong>NSW Health</strong></td>
<td>Support Faculty</td>
<td>Did they?</td>
</tr>
<tr>
<td></td>
<td>Increase service in RPP clinics</td>
<td>What difference did the students make?</td>
</tr>
<tr>
<td></td>
<td>Address rural workforce issues</td>
<td>Has there been any impact on rural workforce?</td>
</tr>
<tr>
<td><strong>ADANSW</strong></td>
<td>Support Faculty</td>
<td>Did they?</td>
</tr>
<tr>
<td></td>
<td>Address rural workforce issues</td>
<td>Has there been any impact on rural workforce?</td>
</tr>
<tr>
<td></td>
<td>Introduce Risk Management to students</td>
<td>Did the Risk Management session fulfil its aims?</td>
</tr>
<tr>
<td></td>
<td>Increase exposure</td>
<td>Are the students more aware of the ADA?</td>
</tr>
<tr>
<td><strong>Dental Board</strong></td>
<td>Support Faculty</td>
<td>Did they?</td>
</tr>
<tr>
<td></td>
<td>Address rural workforce</td>
<td>Has there been any impact on rural workforce?</td>
</tr>
</tbody>
</table>
## APPENDIX 3: GROUPED RESEARCH THEMES

<table>
<thead>
<tr>
<th>Area of interest</th>
<th>Research questions</th>
<th>Research methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional collaboration</td>
<td>Has there been any impact on the rural dental workforce? Did the RPP staff support and inspire the students? Were honorary titles an incentive to become involved with the RPP? Did any staff recruit as a consequence of the RPP? What contribution did the students make to patient care? Have the stakeholders supported the Faculty? Did the Risk Management session fulfill its aims? Are the students more aware of the ADA?</td>
<td>Establish data for existing workforce and compare. Post questionnaire Staff questionnaire/uptake Staff questionnaire Staff questionnaire / ISOH records Staff questionnaire / faculty opinion Session evaluation Post questionnaire</td>
</tr>
<tr>
<td>Educational opportunity</td>
<td>Did the students achieve what they wanted to? Is the RPP a student-centred experiential learning opportunity? Does the RPP provide a template for extramural education and optimising such opportunity? Can the RPP develop into a mandatory program?</td>
<td>Post questionnaire / review self-assessment / interviews Analysis of program and learning Transferability to new centres/ new curricula Stakeholder feedback Post questionnaire</td>
</tr>
</tbody>
</table>
APPENDIX 4: RURAL PLACEMENT PROGRAM

ASSESSMENT
University of Sydney - Faculty of Dentistry
RPP MENTORS ASSESSMENT FORM
(Please ensure that this form is completed and returned to the student on the final morning of the RPP.
Students are required to submit this form within one week of completing their RPP)

Name of student: ............................................................................................................
Name of mentor: ............................................................................................................

LEARNING CONTRACT

STUDENT ASSESSMENT

<table>
<thead>
<tr>
<th></th>
<th>UNSATISFACTORY</th>
<th>Tick box</th>
<th>SATISFACTORY</th>
<th>Tick box</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Clinical skills</td>
<td>Totally dependent upon supervisor</td>
<td></td>
<td>Minimum input from supervisor</td>
<td></td>
</tr>
<tr>
<td>b) Communication skills</td>
<td>Unable to establish working relationships with colleagues</td>
<td></td>
<td>Established good working relationships with colleagues</td>
<td></td>
</tr>
<tr>
<td>c) Interest and involvement in the RPP</td>
<td>Totally focussed on own needs</td>
<td></td>
<td>Identified needs and made appropriate and creative response</td>
<td></td>
</tr>
<tr>
<td>d) Attendance</td>
<td>Attended less than 90% of all sessions with inadequate explanation</td>
<td></td>
<td>Attended 90%+ of all sessions</td>
<td></td>
</tr>
<tr>
<td>e) Knowledge</td>
<td>Inadequate knowledge base and unable to identify learning needs</td>
<td></td>
<td>Excellent knowledge base and able to identify areas for development of knowledge</td>
<td></td>
</tr>
<tr>
<td>f) Overall performance</td>
<td>Total unsatisfactory (/5)</td>
<td></td>
<td>Total satisfactory (/5)</td>
<td></td>
</tr>
</tbody>
</table>

Did the student fulfill the learning contract? If not, why?

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Please comment on any aspects of the student’s participation that were particularly impressive.

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Please comment on any aspects of the student’s participation that caused you concern.

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MENTOR’S SIGNATURE: .................................................. DATE: ...........................................

STUDENT’S SIGNATURE: .................................................. DATE: ...........................................
**LEARNING CONTRACT**

**STUDENT SELF-ASSESSMENT**

<table>
<thead>
<tr>
<th></th>
<th>UNSATISFACTORY</th>
<th>Tick box</th>
<th>SATISFACTORY</th>
<th>Tick box</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>b)</td>
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<tr>
<td>f)</td>
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</tbody>
</table>

**Did you fulfill your learning contract? If not, why not?**

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**Please comment on any aspects of the RPP that were particularly valuable to you.**

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**Please comment on any aspects of the RPP that caused you concern.**

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ACADEMIC ADVISOR'S SIGNATURE: ............................................................ DATE:  

RPP SUPERVISOR'S SIGNATURE: .............................................................. DATE:  

STUDENT'S SIGNATURE: ................................................................. DATE:  

360
Name of Student: .................................................................
Name of Academic Advisor: ....................................................
Rural Placement Location: ........................................................

LEARNING CONTRACT:

STUDENT ASSESSMENT

<table>
<thead>
<tr>
<th></th>
<th>UNSATISFACTORY</th>
<th>Satisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Development of learning contract</td>
<td>Totally dependent upon advisor</td>
<td>Developed contract with minimum input from supervisor</td>
</tr>
<tr>
<td>b) Communication skills</td>
<td>Unable to establish working relationships with colleagues</td>
<td>Established good working relationships with colleagues</td>
</tr>
<tr>
<td>c) Interest and involvement in the project</td>
<td>Totally focussed on own needs</td>
<td>Identified needs and made appropriate and creative response</td>
</tr>
<tr>
<td>d) Accessing information</td>
<td>Unable to elicit adequate information</td>
<td>Obtained, analysed and evaluated information</td>
</tr>
<tr>
<td>e) Self-assessment ability</td>
<td>Unable to evaluate own performance and identify need for change</td>
<td>Able to discuss RPP meaningfully and recognise strengths and weaknesses</td>
</tr>
<tr>
<td>f) Overall performance</td>
<td>Total unsatisfactory (/5)</td>
<td>Total satisfactory (/5)</td>
</tr>
</tbody>
</table>

Please comment on any aspects of the student’s participation in the RPP that were particularly impressive.

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Please comment on any aspects of the student’s participation that caused you concern.

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ACADEMIC ADVISOR'S SIGNATURE: ..............................................DATE: .............................................

STUDENT'S SIGNATURE: ..........................................................DATE: ............................................