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Preparing Medical Students to Undertake a Cultural Immersion Experience: Introducing Frameworks for Preparatory and Post-Immersion Activities

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The University of Notre Dame's School of Medicine requires all second year medical students to undertake the Kimberley Remote Area Health Placement Program (hereinafter the 'Program'). The Program provides opportunities to learn life skills required for remote area living via an immersion experience in which students live with, and do useful non-clinical work for, a host community or organization for one week in a remote area in Western Australia. A series of preparatory and post-immersion activities (including film viewing, debating and site visits) are provided to prepare students for the experience. In 2009, the style and format in which these activities were delivered was changed in response to student feedback.

The changes comprised altering the format of the Program Handbook from an information repository to a workbook equipping students with critical thinking frameworks such as: de Bono's Six Thinking Hats (1992) and graphic organizers to facilitate reflection on preparatory and post-immersion activities. All changes were based on humanistic, cognitive and constructivist approaches to learning. These changes were followed by improvements in students' perceptions of several activities.

Activities preparing students to undertake and reflect on a cultural immersion experience involve student engagement in active learning and critical thinking. Educators involved in preparing students for placements in other underserved, culturally and/or geographically diverse settings may employ these approaches to learning and adapt the activities described in this paper as suited to the needs of their particular professional group.

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Keywords: medical education, immersion experience, critical thinking, rural and remote area health, underserved areas

Introduction

Immersion experiences for students in the medical, nursing and teaching professions have been used to better prepare professionals for working, and to address workforce shortages, in cross-cultural and underserved areas (Bond & Jones, 1994; Dowell, Crampton & Parkin, 2001; Genor, 2000; Kavanagh, 1998; Newbury, Shannon, Ryan & Whitrow, 2005; Northern Ontario School of Medicine, 2008; Northern Ontario School of Medicine, n.d.; Stachowski & Mahan, 1998).

One of these underserved areas is rural and remote Australia, where the healthcare workforce situation has been likened to a drought and 'Without much rain forecast for the next 10 years' (Gregory, Armstrong & Van Der Weyden, 2006). The University of Notre Dame, Fremantle responded by establishing a School of Medicine (SoM) with the mission of graduating knowledgeable, skilful, dutiful and ethical doctors who will want to work in Australia's areas of unmet need (including rural and remote Australia). To fulfill its mission, the SoM developed a broad strategy of experiential learning (Kolb, 1984) in rural and remote areas throughout the four-year course, comprising:

1. A first year rural health placement in the Wheatbelt region (covering 154 square kilometers with a population of 69,000) (Wheatbelt Development Commission, 2010a; Wheatbelt Development Commission, 2010b);
2. A second year remote area health placement (termed the Program) in the Kimberley region (see Figure 1); and
3. Clinical placements in rural and remote areas during the third and fourth (final) years of medical training.
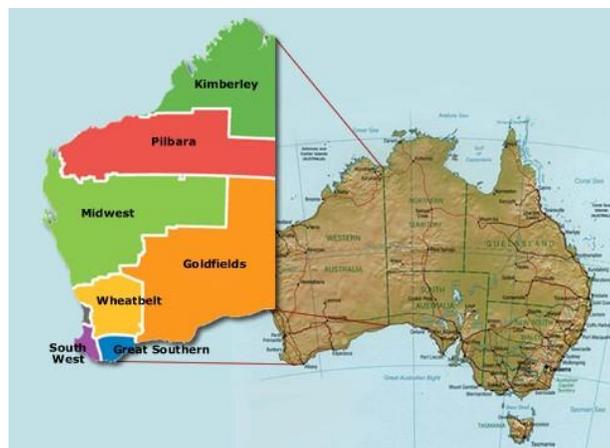

Figure 1. Map of Western Australia showing the Kimberley and Wheatbelt regions.

Rural background (defined as primary and/or secondary schooling) of the doctor and his/her spouse is the most important factor in determining whether a doctor works in a rural or remote area (Dunbabin & Levit, 2003; Laven, Beilby, Wilkinson & McElroy, 2003). However, 'rural background' may be regarded as an attribute that can be identified through

the medical student selection process and as competencies in 'rural and remote area living' (as opposed to 'rural and remote area clinical practice') that can be acquired through the medical curriculum. Furthermore, when newly trained doctors make decisions about the geographical and specialty areas of their work, they need to
be able to conceptualize themselves (Burack et al., 1997), and/or have had first-hand experience, in that role (Laurence & Elliot, 2007). Based on this evidence, the SoM developed the Program to provide all second year students with the experiences required to learn life skills needed for remote area living. Students live with, and undertake useful, non-clinical work for, a host community or organization for one week in the Kimberley.

The Kimberley region covers over 420,000 square kilometers (the size of Great Britain) with a population of just over 34,000, about one half of whom are Aboriginal people (Kimberley Development Commission, 2010). Hosts may include pastoral stations, schools, Aboriginal communities, aged- and child- care centers, and small businesses. Hosts are not paid, but derive immediate benefit from the Program as students provide additional human resources (described by some hosts as 'an extra pair of arms and legs'). Long-term benefits identified by hosts include the provision of a structured, constructive means for prospective doctors to appreciate the richness of remote area living, and encouragement to think and act cross-culturally (Toussaint & Mak, 2010).

The immersion experience of being in host workplace and home can be powerful, and sometimes a life changing, learning experience. To gain maximal benefit from this privilege students need to be prepared both cognitively and emotionally to undertake what is essentially the role of a participant observer in remote area life (Smith, 1997). This is done through a series of preparatory and post-immersion activities where attendance is required. The aim of these activities is to:

1. Reduce students' anxiety; associated with being in a new environment;
2. Raise students' awareness of how they may be perceived by the community as representatives of Western medicine and the Catholic church, in the light of these organizations' history in the Kimberley (Batty, 2003; Hunter, 1991);
3. Facilitate students' reflection about the SoM's mission and their role in achieving this; and
4. Provide students with a variety of techniques to facilitate learning from the immersion experience. The latter point is particularly relevant given that immersion programs by their 'very nature, provide nearly limitless teachable moments and learning opportunities' (Kavanagh, 1998). Students are unlikely
to recognize or be able to learn from these 'moments' if they 'have difficulty understanding and valuing different cultural norms because of their lack of awareness of—and strong prior socialization in—their own cultures' (Crampton, Dowell, Parkin & Thompson, 2003); termed the 'paralyzed paradigm effect' by Kavanagh (1998). On the other hand, medical students need to be able to recognize that the 'exaggerated credit rating' given to culture by those with the power to preserve it, may be contributing to health inequalities which disadvantage those without the power to make such decisions (Sutton, 2009).

Review of published and grey literature on cultural immersion programs in medical and health professional education revealed only a few papers relevant to the Program and this action research project which focuses on preparing students for an immersion experience and facilitating post-immersion reflective learning. Most 'cross-cultural exchange' programs are primarily *clinical* rather than *cultural immersion* programs, and focus on working in a clinical setting rather than learning about how culture contributes to health outcomes by

being a participant observer in the health context being studied (Mutchnick, Moyer & Stern, 2003).

Five participant observer cultural immersion programs were identified and their key features are summarized in Table 1. Preparatory and post-immersion activities and resources were a feature of all but one of the programs. Their importance is highlighted by Crampton, Dowell, Parkin and Thompson (2003) and the Northern Ontario School of Medicine. A report on the Integrated Community Experience written after its first year of implementation stated that students require 'detailed information about the community they will enter…orientation with regards the customs and beliefs of different communities' and that 'orientation…should start early in the academic year and be mandatory' (Northern Ontario School of Medicine, 2006).

Table 1. Features of the Program in comparison with other cultural immersion experiences.

Feature	The Program	Cultural immersion experience				
		Integrated Community Experience (Northern Ontario School of Medicine, 2008; Northern Ontario School of Medicine, n.d.)	Indigenous culture rural week (Newbury, Shannon, Ryan & Whitrow, 2005)	Early Community Contact Week (Dowell, Crampton & Parkin, 2001).	Field School (Kavanagh, 1998)	Field experience Bond & Jones, 1994).
Location	Kimberley region, Western Australia	Northern Ontario, Canada	South Australia	East Cape region, New Zealand	South Dakota, USA	Texas, USA & Cuernavaca, Mexico
Host community/ communities	Kimberley residents*	Aboriginal Canadians	Aboriginal people at Iga Warta and Spear Creek	Maori	Lakota	Mexican
Health profession	Medicine	Medicine	Medicine	Medicine	Nursing	Nursing, post-graduate training course
Course requirement	Course requirement	Course requirement	Optional	Optional	Optional	Optional
Length of immersion	1 week in year 2 of a 4-year course	4 weeks in year 1 & 2 X 4 weeks in year 2 of a 4-year course	1 week in year 2 of a 6-year course	1 week in year 3 of a 6-year course	6 weeks	2 weeks
Number of students	100 - 105	56	36	51	10-12	9-10
Preparatory activities/ resources	See Table 2	3 sessions (6 hours) – Values & healing, Cultural considerations in patient communication, Medicine, health & the history of relationship between Aboriginal & non-Aboriginal peoples.	Not stated	1 briefing session to outline program & educational objectives, & answer students' questions	Not stated	2 days –course expectations & requirements, cultural variable in seeking and delivering health care, Mexican culture & beliefs, participant-observation methodology.
Activities during the immersion	Useful non-clinical work for the host organisation & use this experience to meet personal learning objectives	Academic studies, including clinical placements in patient communication, cultural activities & a 'self-study'	Interact with Aboriginal people in Aboriginal controlled community settings	Health needs assessment, induction into East Cape Maori world as a guest, *Click link below table to view in web browser* assimilation	Tribal health-related efforts and participate in community life	Intensive Spanish course, historical & health service visits, participant-observation research
Accommoda-tion	Private homes of staff of the host organisation	On an Aboriginal community, details not provided	Not stated	Communal visitors quarters	Bureau of Indian Affairs school dormitory	Private homes of Mexican hosts
Post-immersion activities/ resources	See Table 2	Present 'self-study' 1 week after immersion.	Not stated	Not stated	Not stated	Present research study 1 week after immersion.

*Includes Aboriginal and non-Aboriginal people in towns, remote communities & pastoral stations

http://academics.georgiasouthern.edu/ijsotl/v5n1/Images/MAK-Table1Cap.jpg

The teaching profession has also employed cross-cultural student teacher placements to address the educational needs of indigenous and culturally diverse students in urban and rural areas (Genor, 2000; Stachowski & Mahan, 1998). Although, the programs described by Stachowski & Mahan (1998) and Genor (2000) are *teaching* (as opposed to immersion) placements because student teachers perform teaching duties, they have more similarities with the Program than *clinical* placements in the health professions which focus primarily, if not exclusively, on the acquisition of clinical skills; in contrast, these student teachers are explicitly required to be involved in the community and to 'locate themselves within our culturally diverse society and examine their attitudes towards others', not as an addition to, but as a pre-requisite for fulfilling, their teaching duties.

Like medical students undertaking the Kimberley Program, student teachers in both the Cultural Immersion and the Overseas' Projects are required to undergo 'extensive

preparation (including seminars, readings, workshops, sessions with consultants from the host cultural groups) for the cultural values, beliefs, lifestyles and education practices in the placements sites for which they have applied', and serve the host community outside school by completing one service learning project during their teaching placement (Stachowski & Mahan, 1998).

Student feedback, both anecdotal (from informal conversations and a random, de-identified 10% audit of students' reflections on the Program submitted in 2008 for formative assessment by their clinical debriefing tutor) and formal (collected via routine evaluation questionnaires administered after the Program) suggested that not all medical students understood the importance of these preparatory and post-immersion activities. In addition, during an evaluation of the program to assess the Program's benefits and limitations as perceived by Kimberley residents, some hosts reported that some students were 'under-prepared' for the immersion experience (Toussaint & Mak, 2010).

Staff responded to these observations by changing the *style and format* in which the preparatory and post-immersion resources and activities were delivered, while maintaining the content. The changes comprised altering the format of the Program Handbook from an information repository to a workbook which provided students with critical thinking frameworks, such as de Bono's Six Thinking Hats (1992) and graphic organizers, which they were encouraged to use to reflect on preparatory and post-immersion activities. See Appendix 1 for a detailed description of the activities associated with the Program (2008-9) and the models/frameworks of learning that were consciously applied as part of the action research project.

The aim of the action research project was to apply an action research cycle 'observe, act, reflect' (Stringer, 2004) to view:

1. Whether these changes were educationally sound, and

2. Their effect on students' perceptions of the usefulness of these activities. As Stringer (2004) highlights, this is a continuous improvement model. Thus, no definite conclusions are drawn; instead, findings related to intermittent results are reported upon as is done in this current study.

Rationale Behind the Changes

The changes introduced were based on humanistic, cognitive and constructivist approaches to learning (Merriam & Caffella, 1999). The humanistic orientation to learning states that human motivation is based on a hierarchy of needs as outlined by Maslow in 1954 (Huitt, 2007), and that if the lowest needs on this hierarchy (i.e. hunger, thirst, security and protection) are not attended to, it is difficult for an individual to attend to higher order needs such as self-actualization which is the goal of learning. Some of the preparatory resources and activities, e.g. Kimberley culture: 'Fitting in' and 'getting on' Photostory™ and interactive discussion, Aboriginal culture and linguistics workshop and the handbook which contains maps, staff and emergency contact details and a list of things to pack, were designed to provide students with the information they needed to meet their basic needs in a new environment so that they can concentrate on learning which is a higher order need.

The cognitive orientation to learning argues that learning derives from the reorganization of experiences in order to make sense of stimuli coming from the environment. For this reorganization to occur, the stimuli, e.g. film or debate, needs to pass through the sensory

memory (which retains things for only a few seconds) to the short term working memory (which can retain only 5-7 chunks of information for a short time) and into the long term memory (in which unlimited amounts of information can be stored in inter-related networks for extended periods of time, and from which information can be retrieved). Students' attention during passive learning activities such as lectures, films or debates is typically maintained for 10-15 minutes, after which learning drops off because no more information can be stored in the short term memory and no opportunity exists for the information to be processed into the long term memory (Biggs & Tang, 2007). In addition, it is well recognized that asking students to review what they have learnt at the end of a lecture leads to better retention of learning because it provides opportunity for the information to be processed into the long term memory (Biggs & Tang, 2007). Therefore, requiring students not just to attend a film or debate, but to first complete an associated task, e.g. write notes and critically appraise the information using a prescribed framework and then report it to the group at the end of the session, should facilitate passage of the information into the long term memory and linkage of the new information to existing knowledge so that it becomes retrievable.

Ausubel's notion of reception learning states that to process new knowledge, the teacher should provide the learner with a means of preparing their cognitive structure for the learning experience about to take place (NSW HSC Online, n.d.a). This means is referred to as an 'advance organizer', a 'device to activate the relevant schema or conceptual pattern so that new information would be more readily 'subsumed' into the learner's existing cognitive structure or mental depiction' (NSW HSC Online, n.d.a). Whilst students on the immersion experience were thinking about tasks, they were not critically thinking, i.e. raising questions, communicating effectively or using information to assess and abstract ideas. The critical thinking frameworks that students used to reflect on the preparatory films and debates represent 'advance organizers' that can also be used to process their experiences during the immersion experience in their host workplace and home where they do not have access to academic supervision. This concept was articulated succinctly many decades ago by Louis Pasteur –'In the fields of observation chance favors only the prepared mind.' Bloom (1956), offered instructional tasks at six levels (Bloom's Taxonomy) to encourage higher levels of thinking. The changes made to the immersion handbook reflected Bloom's taxonomy to encourage critical and lateral thinking.

The constructivist orientation to learning views knowledge 'as a constructed entity made by each and every learner through…an active process of integrating new experiences and information with existing concepts. Rather than simply absorbing ideas…students take those ideas and assimilate them with their pre-existing notions and experience to modify their knowledge and understanding in a more complex, complete and refined way.'(NSW HSC Online, n.d.b). The debates and tasks associated with each debate stimulated students to use a range of Bloom's six levels (1956) with a number of graphic organizers designed to facilitate retrieval and evaluation of their existing knowledge, attitudes and beliefs about rural and Aboriginal health. Students were required to undertake each task individually before discussing their thoughts with a colleague. They were then invited to report back to the whole group. This strategy embraced both the personal (knowledge is constructed by the individual through their own interpretations) and social (knowledge is constructed through social interaction among individuals where their dialogue leads to a shared interpretation) perspectives of constructivism (Merriam & Caffella, 1999; NSW HSC Online, n.d.b). Nettelbeck (2005) asserts that graphic organisers are easily embedded into teaching programs with a supportive, cooperative, risk-taking culture. They allow teachers to diversify tasks.

Students were required to reflect on the information presented during the "Working in the Kimberley' talk by Kimberley doctors and the health service tour by imagining themselves working as a doctor in this health service using the 'looks like, sounds, like, feels like' framework which encourages students to conceptualize themselves as a doctor in a remote area. This task is supported by the findings of Burack et al. (1997) who state that when making decisions about where they will work in terms of geographical area and medical specialty, students need to be able to conceptualize themselves in that role.

Method

To assess the effect of these changes on students' perceptions of the usefulness of these activities, we compared student feedback in 2009 with that from 2008. Student feedback was collected in both years using an evaluation questionnaire in which the student's identity remained anonymous. The questionnaire used in 2009 was identical to the one used in 2008 with the exception of three additional questions:

1. Did the preparatory resources and activities helped alleviate anxiety associated with travelling to a new environment?
2. Did the film 'Yajilarra' help you prepare for and/or help you address your learning?
3. Did the debate 'Notre Dame medical graduates' education in theology, philosophy and ethics makes them more effective at working "out bush"' help you prepare for and/or help you address your learning?

The first additional question was required to determine if the preparatory activities reduced students' anxiety. The other two questions were required because increase in student numbers (from 94 in 2008 to 106 in 2009) required inclusion of one additional debate so that all students could participate, and because a film was released in August 2009 about the health and social effects of banning take-away alcohol sales in one of the towns where many students are placed.

Results

The proportions of students in 2008 and 2009 who reported that each activity was helpful/not helpful in achieving their learning objectives were compared using a chi-square test. Student comments were also coded into positive, negative and other.

Of the 94 and 106 second year students in 2008 and 2009, respectively 94 and 102 undertook the immersion experience and were eligible to complete the questionnaire. The remaining students were permitted to defer this course requirement to 2010 because of illness or family circumstances. Response rates to the questionnaire were 94% (88/94) and 82% (84/102) in 2008 and 2009, respectively.

The preparatory resources and activities were effective in alleviating anxiety in 33% of students, ineffective in 35% and had no effect in 31%.

Significant improvements were reported in the usefulness of the Bungarun leprosarium tour and museum viewing (64.8% in 2008 and 83.3% in 2009, $\rho=0.01$), the Derby health service tour (80.7% in 2008 and 92.9% in 2009, $\rho=0.02$) and the evidence-based medicine tutorial (53.4% in 2008 and 70.2% in 2009, $\rho=0.03$).

In contrast to these improvements, a significant decline in the reported usefulness of one debate and the debates as a whole (78.3% in 2008 and 66.3% in 2009, $\rho<0.001$) was observed. The comments indicate that while some students appreciated the value of debates as an innovative way of exploring complex health and social issues, others felt they required too much work and time.

No changes were observed in the reported usefulness of the films, five debates, the handbook, *Kimberley culture: 'Fitting in' and 'getting on'* Photostory™ and interactive discussion, Aboriginal culture and linguistics workshop, *Working in the Kimberley* (talk by Kimberley doctors) or the immersion experience. Appendix 2

Appendix 2 details the students' perceptions of the usefulness of the handbook, and preparatory and post-immersion activities in 2008 compared with 2009.

Discussion

Using the action research cycle, the first set of improvements were observed after the first cycle. Improvements in students' perceptions of the usefulness of the: Bungarun leprosarium tour and museum viewing; Derby health service tour; and, the evidence-based medicine tutorial occurred after altering the format of the Program Handbook from an information repository to a workbook which provided students with critical thinking frameworks. These improvements indicate that activities preparing students to undertake and reflect on a cultural immersion experience increase when involving student engagement in active learning and critical thinking. In 2010, in response to reported decline in the usefulness of debates, four of the debates were replaced with student-lead symposia on similar issues. The action research cycle continues to be applied to the Program to monitor the impact of this, and other, improvements implemented in response to student- and host- feedback.

One limitation in using a quantitative method to assess the effect of these changes to the *style and format* was that the study's statistical power to detect a difference was limited by a small sample size. It was neither feasible nor possible to increase the sample size by combining data from 2006 and 2007 to that of 2008, because the only preparatory resource provided in 2006 was a pre-immersion briefing about safety and logistical issues, and because the content of many of the preparatory and post-immersion resources and activities in 2007 was different to that in 2008.

A further limitation was the limited data about the reasons for the observed changes in students' perceptions because most students responded to the question without providing comments, and few comments provided an explanation of the authors' reasons for their response (see Appendix 2, Comments columns). Ideally, it would have been useful to include qualitative data from interviews with students and hosts to add another dimension to the quantitative data. However, this was not possible as resources were not available for collection and analysis of qualitative data by an independent researcher, and if DBM interviewed the students we could not be sure that the data would be unbiased since students knew that she designed the Program and was responsible for their assessment.

A powerful tool for cross-cultural learning (the first step of which requires 'understanding of your personal beliefs'), is not exclusively a solitary task or a process engaged in with one mentor (Schon, 1987), but can be enhanced in collaborative settings in which students and their teachers 'feel free to examine [one's knowledge], 'acknowledge one's confusions', 'ask

critical questions' and 'engage in critical dialogue' (Genor, 2000). The program at The University of Wisconsin-Madison Elementary Education facilitates this process by requiring student teachers to undertake action research during their placement and to communicate their research issue to their peers in an interactive oral presentation (Genor, 2000). Both the University of Wisconsin-Madison Elementary Education and the Kimberley Programs require students undertaking placements to examine their knowledge and beliefs, and 'engage in critical dialogue' with their colleagues – one through action research projects, and the other through debating contemporary issues regarding remote area health and Aboriginal health.

The University of Notre Dame, Fremantle, graduated its first cohort of medical practitioners in December 2008. It takes at least five years for a medical graduate to develop the qualifications required to practice independently in a remote area so we cannot definitively assess the effectiveness of this university's contribution to Australia's rural and remote area medical workforce until the latter half of this decade. It is encouraging that the Postgraduate Medical Education Council of Western Australia (2008) reported that many graduates of the University of Notre Dame, Fremantle, indicated their willingness to work outside the metropolitan area and requested that more intern and post-graduate training positions be developed in rural health services. Data from the *Medical Schools Outcomes Database (MSOD) and Longitudinal Tracking Project,* the world's first study to longitudinally track medical students in all Australian medical schools throughout their medical education, training and post-graduate practice, will be invaluable in evaluating the outcomes of medical education programs (such as the Program) which have specified workforce objectives, (Medical Deans Australia and New Zealand, 2010).

Rural health workforce shortages continue in Australia (Gregory, Armstrong & Van Der Weyden, 2006), the United States of America (Fink, Phillips, Fryer & Koehn, 2003) and many other countries (Simeons S & Hurst J, 2006), despite a multitude of strategies aimed at addressing the problem. Educators utilizing participant observation immersion experiences to address workforce shortages in rural, cross-cultural and other underserved areas may employ the approaches to learning and adapt the activities described in this paper to create preparatory and post-immersion activities suited the needs of their professional group.

References

Batty, D. (Director /Producer) (2003). *Sisters, Pearls and Missions Girls.* [Motion picture]. Australia: Rebel Films.

Biggs, J. & Tang, C. (2007). *Teaching for Quality Learning at University*. New York: Open University Press.

Bloom, B. (1956). *A taxonomy of educational objectives: Handbook1: Cognitive domain*. New York: McKay.

Bond, M.L. & Jones, M.E. (1994). Short-term cultural immersion in Mexico. *Nursing and*

Health Care, *15*(5), 248–253.

Burack, J.H., Irby, D.M., Carline J.D., Ambrozy D.M., Ellsbury Z.K.E. & Stritter F.T. (1997). A Study of Medical Student' Speciality-Choice Pathways: Trying on Possible Selves. *Academic Medicine, 71*(6), 534-541.

Crampton, P., Dowell, A., Parkin, C. & Thompson, C. (2003). Combating Effects of Racism Through a Cultural Immersion Medical Education Program. *Academic Medicine*, *78*(6), 595–598.

De Bono, E. (1992). *Six thinking hats for school: K-2 resource book*. Des Moines IA: McQuiag Group.

Dowell, A., Crampton, P. & Parkin, C. (2001). The First Sunrise: an Experience of Cultural Immersion and Community Health Needs Assessment by Undergraduate Medical Students in New Zealand. *Medical Education*, *35*(3), 242-249.

Dunbabin, J & Levit, L. (2003). Rural Origin and Rural Medical Exposure: Their Impact on the Rural and Remote Medical Workforce in Australia. *Rural and Remote Health*; 3, Retrieved 26 April 2010 from http://www.nswrdn.com.au/client_images/6171.pdf

Gregory A.T., Armstrong R.M. & Van Der Weyden M.B. (2006). Rural and Remote Health in Australia: how to avert the deepening health care drought. *Medical Journal of Australia,* 185(11-12), 654-660.

Fink, K.S., Phillips, R.L. Jr., Fryer, G.E & Koehn, N. (2003) International medical graduates and the primary care workforce for rural underserved areas. *Health Affairs, 22*(2), 255-262.

Hogan, M. (Producer) & Latimer, J. (Producer). (2009). *Yajilarra.* [Motion picture]. Australia.

Huitt, W. (2007). *Maslow's Hierachy of needs.* Retrieved March 23, 2010 from http://www.edpsycinteractive.org/topics/regsys/maslow.html

Hunter, E.M. (1991). Stains on the Caring Mantle. Doctors in Aboriginal Australia have a history. *Medical Journal of Australia,* 155(11/12), 779-83.

Kavanagh, K.H. (1998). Summers of No Return: Transforming Care Through a Nursing Field School. *Journal of Nursing Education*, *37*(2), 71-79.

Kimberley Development Commission. (2010a) *The Kimberley.* Retrieved April 23, 2010 from http://www.kdc.wa.gov.au/kimberley/ff_area.asp

Kimberley Development Commission. (2010b) *Population Structure & Characteristics.* Retrieved April 23, 2010 from http://www.kdc.wa.gov.au/kimberley/tk_demo.asp

Kirkman, T.W. (1996). *Statistists (sic) to Use. Contingency Tables. Do Different Treatments Cause Different Effects?* Retrieved October 10, 2009, from http://www.physics.csbsju.edu/stats/contingency.html

Kolb, D. (1984). *Experiential learning: experience as the source of learning and development.* New Jersey: Prentice Hall.

Laurence, C. & Elliot, T. (2007). When, what and how South Australian Pre-Registration Junior Medical Officers' Career Choices are made. *Medical Education, 41*(5), 467-75.

Laven, G.A., Beilby, J.J., Wilkinson, D. & McElroy, H.J. (2003). Factors Associated with Rural Practice Among Australian-Trained General Practitioners. *Medical Journal of Australia, 179*(2), 75–79.

Mak, D. (2008). *Kimberley Culture: 'Fitting in' and 'Getting on'* Photostory™. Retrieved October 10, 2009, from http://donnamak.blogspot.com

Medical Deans Australia and New Zealand. (2010) *MSOD PROJECT: A National Database for Medical Education Research and Workforce Planning.* Retrieved April 26, 2010 from http://www.medicaldeans.org.au/msod.html

Merriam, S.B. & Caffella, R.S. (1999). Key Theories of Learning. In Merriam, S.B. & Caffella, R.S. *Learning in Adulthood.* (pp. 248-266). San Francisco: Jossey-Bass.

Mutchnick, I.S., Moyer, C.A., Stern, D.T. (2003). Expanding the Boundaries of Medical Education: Evidence for Cross-Cultural Exchanges. *Academic Medicine, 78*(10), S1-S5.

Nettelbeck, D. (2005). *The learning and thinking context.* Camberwell Vic: ACER.

Newbury, J.W., Shannon, S., Ryan, V. & Whitrow, M. (2005). Development of rural week for medical students: impact and quality report. *Rural and Remote Health*; 5, Retrieved April 23, 2010 from http://www.rrh.org.au/articles/subviewnew.asp?ArticleID=432

Northern Ontario School of Medicine. (2006). *Report of the Module 106 Integrated community Experience (ICE): 2006*. Sudbury and Thunder Bay: Lakehead University and Laurentian University.

Northern Ontario School of Medicine. (2008). *A Brief Overview of the Curriculum at the Northern Ontario School of Medicine*. Sudbury and Thunder Bay: Lakehead University and Laurentian University.

Northern Ontario School of Medicine. (n.d.). *Aboriginal Community Experience Handbook.* Sudbury and Thunder Bay: Lakehead University and Laurentian University.

NSW HSC Online. (n.d.a). *Professional Development Node. Cognitive Theories of Learning.* Retrieved October 10, 2009 from http://www.hsc.csu.edu.au/pro_dev/teaching_online/how_we_learn/cognitive.html

NSW HSC Online. (n.d.b). *Professional Development Node. Constructivism.* Retrieved October 10, 2009, from http://www.hsc.csu.edu.au/pro_dev/teaching_online/how_we_learn/constructivism.html

Phillips, R. (Ed.). (2000). Action Inquiry. In *Staff Development in Evaluation of Technology-based Teaching Development Projects: An Action Inquiry Approach.* Retrieved October 24, 2009, from http://www.tlc.murdoch.edu.au/archive/cutsd99/handbook/section3a.html

Postgraduate Medical Education Council of Western Australia. (2008). *WA medical student survey – internships*. Unpublished report, Department of Health, Western Australia, Perth.

Schon, D. (1987). From Technical rationality to reflection in action. In *Educating the reflective practitioner* (chapter 2). CA: San Francisco.

Simeons, S. & Hurst, J. (2006). *The Supply of Physician Services in OECD Countries.* Retrieved April 24, 2010, from http://www.oecd.org/dataoecd/27/22/35987490.pdf

Smith, M. K. (1997). Participant observation and informal education. In *The encyclopaedia of informal education*, Retrieved February 24, 2010, from www.infed.org/research/participant_observation.htm

Stringer, E. (2004). *Action research in education*. Upper River Saddle, NJ: Pearson Education, Inc.

Sutton, P. (2009). Culture Worriers. *The Australian*. Retrieved October 18, 2009, from http://www.theaustralian.com.au/news/arts/culture-worriers/story-e6frg8px-1225721010699

Torres, M (Director/Producer/Writer) (1999). *The Healing Sounds of the Bungarun Orchestra.* [Motion picture]. Australia: ABC.

Toussaint, S. & Mak D.B. (2010). 'Even if we get one back here, it's worth it...': Evaluation of an Australian Remote Area Health Placement Program. *Rural and Remote Health*; 10, Retrieved September 10, 2010 from http://www.rrh.org.au/articles/showarticlenew.asp?ArticleID=1546

Wheatbelt Development Commission. (2010). *The Wheatbelt region*. Retrieved March 23, 2010 from http://www.wheatbelt.wa.gov.au/wheatbelt.php

Appendix 1

Preparatory and post-immersion activities/resources associated with the Program in 2008 and 2009.

Activity/Resource	Style/format of delivery in 2008	Change implemented in 2009
Handbook	• Included timetables, maps, contact details and readings • Formatted as an information repository	• Same information but formatted as a workbook with instructions for students to make notes, record their reflections/critical appraisals using the frameworks specified below • Students were informed that if they recorded their thoughts and reflections prospectively, it would help them write their reflection
Film 1: *Sisters, pearls & missions girls* (Batty, 2003)	• Students asked to write 3-5 dot points about what they learnt	• Critical appraisal using de Bono's (1992) Six thinking hats • At the end of the film, student volunteers are asked to report their thoughts for one of the 'hats' to the whole group

Film 2: *The Bungarun orchestra* (Torres, 1999)	• Students asked to write 3-5 dot points about what they learnt	• Critical appraisal using de Bono's (1992) Six thinking hats • At the end of the film, student volunteers are asked to report their thoughts for one of the 'hats' to the whole group
Film 3: *Yajilarra* (Hogan, 2009)	• Not applicable	• Film about the effects of take away alcohol restrictions in a Kimberley town was introduced to the Program at short notice, several months after its release
Photostory™: *Kimberley culture: 'Fitting in' and 'getting on'* (Mak, 2008) and interactive discussion	• No task associated with this activity	• Knowledge (Bloom, 1956): Write 5-6 dot points summarizing what you will do to fit in and get on in the Kimberley
Debate 1: Medical practitioners should not be allowed to work in Australia without understanding the medical profession's history with regard to Aboriginal Australians	• Students asked to write 3-5 dot points about what they learnt	• Knowledge (Bloom, 1956): Write 3-5 dot points on what you learnt from this debate • At end of debate students are asked to discuss their points with the person sitting next to them, then several students are asked at random to report the main points of their discussion to the whole group
Debate 2: Aboriginal health outcomes have declined as a result of policy changes introduced since 1967 to remove discrimination and ensure equal rights	• Students asked to write 3-5 dot points about what they learnt	• Plus, minus, interesting (PMI) (de Bono, 1992) analysis of this debate • At end of debate students are asked to discuss their points with the person sitting next to them, then several students are asked at random to report the main points of their discussion to the whole group
Debate 3: Medical culture is responsible for the current shortage of health care staff in rural/remote	• Students asked to write 3-5 dot points about what they learnt	• Evaluation (Bloom, 1956): • Using a graphic organizer (2 stars, one wish), provide 2 positive comments and 1 constructively critical comment about this debate • At end of debate students are asked to discuss their points with the person sitting next to them, then several students are asked at random to report the main points of their discussion to the whole group
Debate 4: '[The Australian prime minister's] apology will sanction a view of history that cements a detrimental psychology of victimhood, rather than a stronger one of defiance, survival and agency.' Noel Pearson	• Students asked to write 3-5 dot points about what they learnt	• Knowledge, comprehension and application (Bloom, 1956): Using Y chart graphic organizer, comment on document what went well, what didn't go so well and what improvements would you suggest. • At end of debate students are asked to discuss their points with the person sitting next to them, then several students are asked at random to report the main points of their discussion to the whole group

Debate 5: The importance of doctors to the health and well-being of rural/remote communities is over-rated*	• Students asked to write 3-5 dot points about what they learnt	• Analysis (Bloom 1956): Critically appraise the debate using a framework of your choice • At end of debate students are asked to discuss their points with the person sitting next to them, then several students are asked at random to report the main points of their discussion to the whole group
Debate 6: Strategies to attract recruit and retain medical practitioners to remote area practice have not been cost-effective*	• Students asked to write 3-5 dot points about what they learnt	• Judge (Bloom, 1956): Judge the debate using the debate judging score sheet (Matter 20 point, manner 20 points, method 10 points) • At end of debate students are asked to discuss their points with the person sitting next to them, then several students are asked at random to report the main points of their discussion to the whole group
Debate 7: Notre Dame medical graduates' education in theology, philosophy & ethics makes them more effective at working in a rural or remote area.*	• Introduced in 2009	• Evaluation (Bloom, 1956): Critically appraise the debate using a framework of your choice • At end of debate students are asked to discuss their points with the person sitting next to them, then several students are asked at random to report the main points of their discussion to the whole group
Bungarun leprosarium tour and museum viewing	• No task associated with this activity	• Experiential learning (Kolb, 1984): See the old jail, cemetery and museum. • Why was there a jail in this health care facility? • What was the legislative basis for involuntary admission of Aboriginal people with leprosy at the leprosarium?
Aboriginal culture and linguistics workshop	• No task associated with this activity	• Knowledge (Bloom, 1956): Make notes and reflect on the information presented/workshop experience using a framework of your choice
Evidence-based medicine tutorial	• Each student to read all 5 readings	• Divide the 5 readings between PBL group members so that everyone reads the 1-page article and two people read each of the other 4 longer articles • Critically appraise each article using an appropriate framework
	• Open the tutorial by presenting the critical appraisal and key learnings from each article. This should take 15- 20 minutes in total. • Use the information from papers 1-5 and any other relevant prior learning you may have to discuss the following questions (this should take 30-40 mins): • How would you explain to a literate, Westernised person with diabetic nephropathy, the cause of their disease? • If you had renal disease and were given a Central Australian Aboriginal explanation of your disease, how would you feel? How would you react? • How would you explain to a traditional Aboriginal person with diabetic nephropathy, the cause of their disease? • What primary, secondary and tertiary prevention interventions could be used to reduce the development/impact of diabetic nephropathy? Which target	

	populations would you apply these interventions in? (NB Primary prevention - preventing the disease; Secondary prevention - early detection and treatment of the disease; tertiary prevention - minimizing the impact of the disease on someone who already has it) • How might you apply the concepts from the "Elements of diffusion" paper a) in clinical practice working with patients 1-on-1 and b) in working with communities or populations?	
Working in the Kimberley (talk by Kimberley doctors) & Derby health service tour	• No task associated with this activity	• Conceptualization of self as a remote area doctor (Burack et al., 1997) and evaluation (Bloom, 1956): Make notes and reflect on the information presented and health service tour by imagining yourself working as a doctor in this health service using the 'looks like, sounds, like, feels like' framework
Developing personal learning objectives	• Introduced in 2009	• Evaluation (Bloom, 1956): Identify tasks which you will undertake during your immersion experience to achieve the learning objectives generated from this week's problem
Reflection (for formative assessment by clinical debriefing in November)	• Evaluation (Bloom, 1956): Describe and reflect on your experiences of the preparatory films and debates and the trip, including the way in which these experiences have influenced your thinking and feelings about what it would be like to live and work as a doctor in a remote area; and also why people choose to live or not to live in remote areas. You should include comparisons between this remote area experience and your first year Wheatbelt rural experience	

• Debates 5 and 6 were post-immersion activities in 2008; debates 6 &7 were post-immersion activities in 2009.

Appendix 2. Student responses to 'Did activity *x* help you prepare for and/or help you address your learning objectives?', by year, 2008-9.

Activity	2008, n=88				2009, n=84				2008 vs 2009
	Yes	No	NR*	Comments	Yes	No	NR*	Comments	
Handbook	88.60%	8.00%	3.40%	9 total: 5 +ve (useful info, good maps), 4 -ve (too long)	82.10%	13.10%	4.80%	5 total: 3 +ve (very well organised, useful info, interesting), 1 -ve (useless info) 2 other (should contain cultural/ linguistic info)	N/S†
Films (all)	67.60%	23.90%	8.50%		76.60%	15.90%	7.50%		NS†
Film 1: *Sisters, pearls & missions girls*	69.30%	22.70%	8.00%	12 total: 7 +ve (interesting, good historical background), 5 -ve (too long, not important)	77.40%	15.50%	7.10%	3 total: 3+ve (excellent, good historical background)	NS†
Film 2: *The Bungarun orchestra*	65.90%	25.00%	9.10%	9 total: 2 +ve (useful, helped with learning objectives), 7 -ve (irrelevant, didn't need both films)	75.00%	19.00%	6.00%	8 total: 2 +ve (good historical insight, informative), 6 -ve (not relevant)	NS†
Film 3: *Yajilarra*	-	-	-	-	77.40%	13.10%	9.50%	9 total: 9+ve (excellent, best prep resource)	-
Photostory™: *Kimberley culture: 'Fitting in' and 'getting on'* and interactive discussion	69.30%	26.10%	4.50%	11 total: 1 +ve (very useful info) 10 ve (not unnecessary, it's common sense)	59.50%	32.10%	8.30%	12 total: 6 +ve (very important for our trip) 6 -ve (not necessary, it's common sense)	NS†
Debates (all)	78.30%	13.40%	8.30%	19 total: 10 +ve (debates are great, a lot of substance, true professionalism), 9 -ve (too much work, waste of time)	66.30%	24.00%	9.70%	31 total: 8 +ve (debates are great, loved all the debates, an innovative way to get people to think about these issues), 23 -ve (waste of time, inappropriate, should be part of the philosophy curriculum, did not agree with the judge's decisions)	χ2=22.4, df=2, *p*<0.001
Debate 1: Medical practitioners should not be allowed to work in Australia without understanding the medical profession's history with regard to Aboriginal Australians	72.70%	17.00%	10.20%		69.00%	22.60%	8.30%		N/S†
Debate 2: Aboriginal health outcomes have declined as a result of policy changes introduced since 1967 to remove discrimination and ensure equal rights	80.70%	13.60%	5.70%		67.90%	22.60%	9.50%		N/S†
Debate 3: Medical culture is responsible for the current shortage of health care staff in rural/remote									N/S†
Debate 4: '[The Australian prime minister's!] apology will sanction a view of history that cements a detrimental psychology of victimhood, rather than a stronger one of defiance, survival and agency.' Noel Pearson	80.70%	13.60%	5.70%		65.50%	25.00%	9.50%		NS†

*No response
†Not statistically significant at alpha=0.05

http://academics.georgiasouthern.edu/ijsotl/v5n1/Images/Handbook_to_Deb4.jpg

Appendix 2. Student responses to 'Did activity *x* help you prepare for and/or help you address your learning objectives?', by year, 2008-9.

Activity	2008, n=88				2009, n=84				2008 vs 2009
	Yes	No	NR*	Comments	Yes	No	NR*	Comments	
Debate 5: The importance of doctors to the health and well-being of rural/remote communities is over-rated	78.70%	10.10%	11.20%		66.70%	22.60%	10.70%		NS†
Debate 6: Strategies to attract recruit and retain medical practitioners to remote area practice have not been cost-effective	80.70%	11.40%	8.00%		64.30%	26.20%	9.50%		χ2=6.8, df=2, ρ=0.03
Debate 7: Notre Dame medical graduates' education in theology, philosophy & ethics makes them more effective at working in a rural or remote area.	-	-	-		65.50%	25.00%	9.50%	-	-
Bungarun leprosarium tour and museum viewing	64.80%	27.30%	8.00%	7 total: 7 other (similar to the film, should have a guided tour)	83.30%	9.50%	7.10%	4 total: 3 +ve (interesting, very good to see), 1 other (very hot)	χ2=9.3, df=2, ρ=0.01
Aboriginal culture and linguistics workshop	86.40%	6.80%	6.80%	10 total: 10+ve (interesting, excellent, I learnt more about Aboriginal people in 4 hours that I had my whole life, absolutely worth the 4 hours)	89.30%	6.00%	4.80%	15 total: 6 +ve (very interesting & informative, very good, could have done another session), 9 -ve (too long and detailed)	NS†
Evidence-based medicine tutorial	53.40%	35.20%	11.40%	13 total: 13 other (did not do the required pre-reading)	70.20%	17.90%	11.90%	4 total: 1 +ve (interesting), 1 -ve (poorly explained), 2 other (didn't do the tutorial)	χ2=6.8, df=2, ρ=0.03
Working in the Kimberley (talk by Kimberley doctors)	81.80%	10.20%	8.00%	5 total: 3 +ve (excellent speaker, great motivator, great personal view on working/living as a doctor in the Kimberley), 2 other (too tired)	91.70%	3.60%	4.80%	4 total: 2 +ve (great, informative), 2 other (too tired, need more info)	NS†
Derby health service tour	80.70%	8.00%	11.40%	2 total: 1 +ve (great to see how health works in Derby), 1 -ve (session ran late)	92.90%	1.20%	6.00%	7 total: 7 +ve (informative, enjoyable)	χ2=7.6, df=2, ρ=0.02
Developing personal learning objectives					59%	29%	13%	2 total: 1 +ve (informative), 1 other (my	
Immersion experience	83.10%	9.00%	7.90%	13 total: 7 +ve (amazing hosts, I learned a lot, the best ever can I go back next year, fantastic placement, very highly recommended), 4 -ve (good holiday but not useful learning, bad placement), 2 other (more info and perspectives on social factors rather then health science, spoke to many locals despite low grade placement)	84.20%	7.90%	7.90%	9 total: 7 +ve (brilliant, fantastic, excellent), 2 -ve (supervisor unorganised and unprofessional, bit disappointing)	NS†

*No response
†Not statistically significant at alpha=0.05

http://academics.georgiasouthern.edu/ijsotl/v5n1/Images/Deb5_to_Immers.jpg