STRATEGIC POSITIONING IN AUSTRALIAN HIGHER EDUCATION: RESHAPING PERSPECTIVES

Marian Ashikin Mahat
ORCID: 0000-0001-6401-7432

Submitted in total fulfilment of the requirements of the degree of

Doctor of Philosophy
January 2016

LH Martin Institute for Tertiary Leadership and Management
Melbourne Graduate School of Education
The University of Melbourne

Produced on archival quality paper
Abstract

Key forces shaping higher education drive institutions to make strategic choices to locate themselves in niches where they can make use of their resources effectively and efficiently. However, the concepts of strategy in higher education are contested due to the nature and complexity of the sector and the university.
As an industry facing increasing dual pressure toward marketization and competition, this study calls for an analysis of higher education as an industry, and a call for a more business-oriented framework. Working with perspectives offered by strategic management theory, and within the case study context of medical education, this study makes a contribution to higher education research by investigating the notion of strategic positioning in Australian higher education.

Drawing on data from qualitative semi-structured interviews and quantitative analysis of performance data, the study produced four major findings. Firstly, the findings provide empirical evidence of strategic positioning and niche-finding behaviour by medical schools despite the highly structured and regulated field. Secondly, the study has made a contribution through the development of a visual profiling tool to assist medical schools to plan and monitor profiles in order to inform strategy formulation. Thirdly, this study has contributed to deeper understanding of the competitive forces which affect the nature of competition in medical education. Finally, the study has made a contribution by extending Porter’s five forces framework that incorporates regulatory bodies as a sixth and equivalent force, and two additional elements to the buyers’ and suppliers’ perspectives.

This study provides important implications for higher education theory and practice. Theoretically, the study provides sufficient empirical evidence that an analysis of higher education as an industry using an extended version of Porter’s five forces is justifiable and possible. Practically, the findings of this study can assist researchers, practitioners and policy makers to recognize how medical schools have contrasting institutional priorities and values and consequently understand and predict ways in which they compete with one another for various resources. This has implications at both institutional and systems levels—in areas such as funding, governance and workforce.

This study has contributed to greater understanding of higher education as an industry, by providing rich empirical data within the medical education context. The study has provided insights into the dimensions of activities on which medical schools can position themselves, the ways the planning and monitoring of profiles can inform strategy formulation, and the competitive forces that shape medical education. This knowledge can assist in developing a deeper understanding and knowledge of strategic positioning in higher education.
Declaration

I hereby declare that this thesis comprises only my original work towards the Doctor of Philosophy.
To the best of my knowledge and belief, this thesis contains no material previously published or written by any other person except where due acknowledgement has been made in the text. The thesis is fewer than the maximum word limit in length, exclusive of tables, maps, bibliographies and appendices, and complies with the stipulations set out for the degree of Doctor of Philosophy by the University of Melbourne.

Marian Mahat
January 2016
Preface

Publications arising from this thesis.

Refereed journals, books, and book chapters


Refereed Conference Proceedings/Presentations


Acknowledgements

This thesis could not have been written without the support of many wonderful people. My debt is clearly huge. My gratitude, I hope, is correspondingly enormous.
To my supervisors. My deepest gratitude to Professor Leo Goedegebuure and Professor Hamish Coates for their continued guidance, support and encouragement. Most particularly, for the constant ‘knocks on the head’ in order for me ‘to see the light’.

To my Advisory Committee. Thank you to Professor Lynnette Yates and Professor Alan Pettigrew, as well as to Leo and Hamish for sharing their knowledge, skills, and expertise with me. Your constructive and timely feedback guided me along the way.

To staff at medical schools. My sincere appreciation for your time and generosity for participating in this study. Without your contributions and thoughtful perspectives, the study would not have been possible.

To experts in their field. For your expert advice at various stages of this PhD journey. In particular, to Dr Peter Bentley, Professor Ben Canny, David De Bellis, Professor Merran Evans, Jon File, Linley Martin, Professor Vin Massaro, Professor Geoff McColl, Professor Lynn Meek, and Professor Peter Noonan for their timely expert advice and contributions in operationalizing the study.

To my colleagues and fellow PhD, past and present. My warmest thanks for the opportunity to work with you, to learn from you and to share deep conversations about life, career, and family. I am particularly thankful to Carol, Ian, Katherine, Mollie, Linda, Nora, and Paula who contributed intellectually as well as emotionally throughout this journey.

To comrades and friends in higher education. To name each and every one of you would be exhaustive. Your knowledge of higher education has been very illuminating. Our discussions enriched my understanding of higher and medical education, and in particular the strategic management of universities.

To my family. I am eternally grateful to Ani and Aza for the physical, emotional and creative support they provided me in the last few months of my candidature. To Kak Long, Ayom, and Suffian, for being there when I was not. To Mak and Father, who inculcate in me the love of learning. To Praveen, for the constant push to go forth. And finally, but definitely the first, to Indraneel and Annushka, my sources of strength and inspiration throughout my journey. This thesis is dedicated to you both.
In a gentle way, 
you can shake the world.

Mahatma Gandhi

The difficulty lies, not in the new ideas, 
but in escaping from the old ones, which ramify, 
for those brought up as most of us have been, 
into every corner of our minds.

John Maynard Keynes
Table of Contents
Chapter 1  Introduction ........................................................................................................... 1

1.1  Context and rationale ........................................................................................................ 1
1.2  Focus and aim of the study ................................................................................................ 3
1.3  Situating strategy in the current study .............................................................................. 4
1.4  Research questions ............................................................................................................ 5
1.5  Scope of study .................................................................................................................... 6
1.6  Structure of thesis ............................................................................................................... 7

Chapter 2  Mapping the Context .......................................................................................... 11

2.1  Introduction ........................................................................................................................ 11
2.2  Australian higher education .............................................................................................. 11
  2.2.1  Regulation in Australian higher education ................................................................. 18
  2.2.2  The current state of play ............................................................................................ 20
2.3  Australian medical education: History and overview ...................................................... 23
  2.3.1  Policies and reviews .................................................................................................... 23
  2.3.2  Medical schools and student profiles ......................................................................... 27
  2.3.3  Internal structure and governance ............................................................................. 32
  2.3.4  Accreditation ............................................................................................................. 35
  2.3.5  Funding ....................................................................................................................... 36
  2.3.6  Admission criteria, program, curricula and assessment ............................................ 37
  2.3.7  Staff ........................................................................................................................... 43
  2.3.8  Medical Research Institutes ....................................................................................... 43
  2.3.9  Academic Health Science Centres ............................................................................ 44
  2.3.10 Rural schools .............................................................................................................. 45
  2.3.11 Medical education and training ................................................................................. 48
  2.3.12 Regulation in Australian medical education ............................................................. 50
2.4  Summary ............................................................................................................................ 54
Chapter 3  Defining Strategy .................................................................55

3.1  Introduction .................................................................................. 55
3.2  Strategy defined ............................................................................ 55
3.3  Strategy in higher education .......................................................... 69
3.4  Strategy in medical education ......................................................... 72
3.5  Summary ......................................................................................... 75

Chapter 4  The Conceptual Framework .............................................. 77

4.1  Introduction .................................................................................... 77
4.2  Overview of Porter’s five forces framework .................................... 77
   4.2.1  Critique of Porter’s five forces framework ............................... 81
   4.2.2  Strategic industry analysis of higher education .................... 83
4.3  Applying Porter’s five forces framework to medical education ......... 85
   4.3.1  Threat of new entrants .......................................................... 87
   4.3.2  Bargaining power of suppliers .............................................. 90
   4.3.3  Bargaining power of buyers ............................................... 91
   4.3.4  Threat of substitute products ............................................. 91
   4.3.5  Intensity of rivalry among competing firms ....................... 92
   4.3.6  Overall assessment of medical education industry ............... 95
4.4  Summary ......................................................................................... 96

Chapter 5  Operationalizing strategic positioning in higher education .... 97

5.1  Introduction .................................................................................... 97
5.2  A profiling tool for strategic positioning ....................................... 97
5.3  Positioning indicators in higher education ..................................... 103
5.4  Overview of final dimensions and indicators ................................. 108
   5.4.1  Teaching and learning ....................................................... 112
   5.4.2  Student profile ................................................................. 114
   5.4.3  Research ............................................................................ 116
   5.4.4  Knowledge exchange ....................................................... 118
5.4.5 International orientation ................................................................. 119
5.5 Summary ............................................................................................. 120

Chapter 6 Design and method of investigation ........................................ 121

6.1 Introduction ......................................................................................... 121
6.2 Research design .................................................................................. 121
  6.2.1 Case study approach ....................................................................... 121
  6.2.2 Sampling and selection ................................................................... 124
  6.2.3 Data sources .................................................................................. 129
6.3 Research analysis .................................................................................. 132
  6.3.1 Data Analysis ................................................................................. 132
  6.3.2 Presentation of the analysis ............................................................. 133
  6.3.3 Rigour and trustworthiness ............................................................. 135
6.4 Summary ............................................................................................... 136

Chapter 7 Findings: Strategic positioning of medical schools .................. 137

7.1 Introduction .......................................................................................... 137
7.2 Strategic positioning of medical schools .............................................. 137
  7.2.1 Mission .......................................................................................... 138
  7.2.2 Teaching and learning .................................................................... 144
  7.2.3 Student profile ............................................................................... 148
  7.2.4 Research ....................................................................................... 150
  7.2.5 Knowledge exchange ..................................................................... 155
  7.2.6 International orientation ............................................................... 157
  7.2.7 Location ....................................................................................... 158
  7.2.8 Size .............................................................................................. 159
  7.2.9 Age .............................................................................................. 161
7.3 Discussion .............................................................................................. 162
7.4 Summary ............................................................................................... 167
10.3  Contributions to research ................................................................. 255

10.3.1  A new understanding of strategic positioning in higher education .... 255
10.3.2  A visual profiling tool to inform strategy formulation ...................... 256
10.3.3  The competitive forces that shape medical education .................... 257
10.3.4  Extending Porter’s five forces framework ..................................... 257

10.4  Implications for theory .................................................................... 258

10.5  Implications for practice ................................................................. 259

10.6  Directions for future research ......................................................... 261

References .............................................................................................. 266

Appendix A  List of experts .................................................................... 314

Appendix B  Positioning Indicators ........................................................... 315

Appendix C  Interview protocol ............................................................... 338

Appendix D  Profile of Medical Schools .................................................. 342
List of Tables

Table 1: Timeline of significant changes in Australian higher education from 1988 onwards .................................................................13

Table 2: Australian medical schools .................................................................................................................................28

Table 3: Details of medical programs .............................................................................................................................40

Table 4: Rural medical schools ................................................................................................................................................47

Table 5: Ten schools of thought .............................................................................................................................................68

Table 6: Functions of visualisation ......................................................................................................................................99

Table 7: Overview of dimensions and indicators ...............................................................................................................109

Table 8: List of medical schools ...........................................................................................................................................126

Table 9: Profile of universities and medical schools ...........................................................................................................127

Table 10: Profile of participants ...........................................................................................................................................128

Table 11: List of interviews ......................................................................................................................................................134

Table 12: Number of international students, 2014 ..............................................................................................................214

Table 13: Strategy formulation process ..................................................................................................................................245
# List of Figures

Figure 1: Enrolment trend in Australian higher education, 1988 – 2014 ......................... 22  
Figure 2: Commencing medical students, 2002 – 2014 .......................................................... 30  
Figure 3: Medical school graduates, 2002 – 2013 .............................................................. 31  
Figure 4: Sydney Medical School’s organizational structure ........................................... 33  
Figure 5: UNSW Medicine’s organizational structure ....................................................... 34  
Figure 6: Australian medical education regulatory architecture ................................... 53  
Figure 7: Porter’s five forces framework ........................................................................... 80  
Figure 8: Medical education through the lens of Porter’s framework .............................. 86  
Figure 9: Total student enrolments by institutions, 2014 ................................................ 93  
Figure 10: Funding awarded by NHMRC, 2015 ................................................................. 94  
Figure 11: Indicator selection process ............................................................................. 104  
Figure 12: Median medical school profile ...................................................................... 107  
Figure 13: Strategic positions of medical schools ............................................................ 165  
Figure 14: Sample profile of medical school ................................................................. 184  
Figure 15: Median medical school profile ..................................................................... 184  
Figure 16: Positions and performances of medical schools ............................................ 205  
Figure 17: Porter’s revised framework ............................................................................. 251
Abbreviations

AAC&U   American Association of Colleges and Universities
AAMRI   Association of Australian Medical Research Institutes
ACCLaiM Australian Collaboration for Clinical Assessment in Medicine
ACER    Australian Council for Educational Research
ACGME   Accreditation Council of Graduate Medical Education
AGS     Australian Graduate Survey
AHELO   Assessment of Higher Education Learning Outcomes
AHRTTC  Advanced Health Research and Translation Centre
AHSC    Academic Health Science Centre
AMAC    Australian Medical Assessment Collaboration
AMC     Australian Medical Council
AMSA    Australian Medical Students’ Association
ANPHA   Australian National Preventive Health Agency
ANU     Australian National University
AQF     Australian Qualifications Framework
AQHE    Assessing Quality in Higher Education
ARC     Australian Research Council
ASCED   Australian Standard Classification of Education
ASQA    Australian Skills Quality Authority
ATN     Australian Technology Network of Universities
AUQA    Australian University Quality Agency
B.C.    Before Christ
BMBS    Bachelor of Medicine and Bachelor of Surgery
BMed/MD Bachelor of Medical Studies/Doctor of Medicine
BMed-JMP Bachelor of Medicine - Joint Medical Program
BOTPLS  Bridging Course for Overseas Trained Professionals Loans Scheme
CAE     Colleges of Advanced Education
CEO     Chief Executive Officer
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEQ</td>
<td>Course Experience Questionnaire</td>
</tr>
<tr>
<td>CHEA</td>
<td>Council for Higher Education Accreditation</td>
</tr>
<tr>
<td>COAG</td>
<td>Council of Australian Governments</td>
</tr>
<tr>
<td>CPMEC</td>
<td>Confederation of Postgraduate Medical Education Councils</td>
</tr>
<tr>
<td>CRICOS</td>
<td>Commonwealth Register of Institutions and Courses for Overseas Students</td>
</tr>
<tr>
<td>DOHA</td>
<td>Department of Health and Ageing</td>
</tr>
<tr>
<td>ERA</td>
<td>Excellence in Research for Australia</td>
</tr>
<tr>
<td>ESOS</td>
<td>Education Services for Overseas Students</td>
</tr>
<tr>
<td>GAMSAT</td>
<td>Graduate Medical School Admissions Test</td>
</tr>
<tr>
<td>GCA</td>
<td>Graduate Careers Australia</td>
</tr>
<tr>
<td>GEMSAS</td>
<td>Graduate Entry Medical School Admissions System</td>
</tr>
<tr>
<td>Go8</td>
<td>Group of Eight</td>
</tr>
<tr>
<td>GPET</td>
<td>General Practice Education and Training</td>
</tr>
<tr>
<td>HDR</td>
<td>Higher Degree Research</td>
</tr>
<tr>
<td>HECS</td>
<td>Higher Education Contribution Scheme</td>
</tr>
<tr>
<td>HELP</td>
<td>Higher Education Loan Programme</td>
</tr>
<tr>
<td>HEQCO</td>
<td>Higher Education Quality Council of Ontario</td>
</tr>
<tr>
<td>HESA</td>
<td>Higher Education Support Act</td>
</tr>
<tr>
<td>HWA</td>
<td>Health Workforce Australia</td>
</tr>
<tr>
<td>IPP</td>
<td>Institutional Performance Portfolio</td>
</tr>
<tr>
<td>IRU</td>
<td>Innovative Research Universities</td>
</tr>
<tr>
<td>LHD</td>
<td>Local Health District</td>
</tr>
<tr>
<td>MBBS</td>
<td>Bachelor of Medicine, Bachelor of Surgery</td>
</tr>
<tr>
<td>MCAT</td>
<td>Medical College Admission Test</td>
</tr>
<tr>
<td>MChD</td>
<td>Doctor of Medicine and Surgery</td>
</tr>
<tr>
<td>MD</td>
<td>Doctor of Medicine</td>
</tr>
<tr>
<td>MDANZ</td>
<td>Medical Deans Australia and New Zealand</td>
</tr>
<tr>
<td>MERI</td>
<td>Medical Education Research and Innovation</td>
</tr>
<tr>
<td>MRI</td>
<td>Medical Research Institutes</td>
</tr>
<tr>
<td>MSOD</td>
<td>Medical Schools Outcomes Database</td>
</tr>
<tr>
<td>MYEFO</td>
<td>Mid-Year Economic and Fiscal Outlook</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>NBEET</td>
<td>National Board of Employment Education and Training</td>
</tr>
<tr>
<td>NFU</td>
<td>Nederlandse Federatie Van Universitair Medische Centra</td>
</tr>
<tr>
<td>NHMRC</td>
<td>National Health and Medical Research Council</td>
</tr>
<tr>
<td>NSSC</td>
<td>National Standards and Skills Council</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation Development</td>
</tr>
<tr>
<td>PBL</td>
<td>Problem-Based Learning</td>
</tr>
<tr>
<td>PELS</td>
<td>Postgraduate Education Loan Scheme</td>
</tr>
<tr>
<td>PEST</td>
<td>Political, economic, social and technological</td>
</tr>
<tr>
<td>PMC</td>
<td>Postgraduate Medical Council</td>
</tr>
<tr>
<td>RCTS</td>
<td>Rural Clinical Training and Support</td>
</tr>
<tr>
<td>RHMT</td>
<td>Rural Health Multidisciplinary Training</td>
</tr>
<tr>
<td>RMIT</td>
<td>Royal Melbourne Institute of Technology</td>
</tr>
<tr>
<td>RSC</td>
<td>Rural Clinical Schools</td>
</tr>
<tr>
<td>RUN</td>
<td>Regional Universities Network</td>
</tr>
<tr>
<td>RUSC</td>
<td>Rural Undergraduate Support and Coordination</td>
</tr>
<tr>
<td>SCOTESE</td>
<td>Standing Council on Tertiary Education, Skills and Employment</td>
</tr>
<tr>
<td>SES</td>
<td>Socio-Economic Status</td>
</tr>
<tr>
<td>SES</td>
<td>Student Experience Survey</td>
</tr>
<tr>
<td>SRC</td>
<td>Social Research Centre</td>
</tr>
<tr>
<td>SRE</td>
<td>Sustainable Research Excellence</td>
</tr>
<tr>
<td>SWOT</td>
<td>Strength, weaknesses, opportunities and threats</td>
</tr>
<tr>
<td>TEQSA</td>
<td>Tertiary Education Quality and Standards Agency</td>
</tr>
<tr>
<td>U.K.</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>U.S.</td>
<td>United States</td>
</tr>
<tr>
<td>UES</td>
<td>University Experience Survey</td>
</tr>
<tr>
<td>UMAT</td>
<td>Undergraduate Medical and Health Science Admissions Test</td>
</tr>
<tr>
<td>VALUE</td>
<td>Valid Assessment of Learning in Undergraduate Education</td>
</tr>
<tr>
<td>VET</td>
<td>Vocational Education and Training</td>
</tr>
</tbody>
</table>
1.1 Context and rationale

Strategic leadership and management in higher education are becoming increasingly significant as the higher education landscape continues to transform. If past trends are any indication, in most systems, higher education costs will continue to climb and government funding will likely shrink. Notable diverse pressures continue to shape higher education such as expansion of systems, diversification of provisions, more heterogeneous student bodies, new funding arrangements, an increasing focus on accountability and performance, new forms of institutional governance, global networking, mobility, and collaboration.

Increasingly, universities face the formidable task of coping with competition and finding a position where they can best defend themselves against competitive forces and to establish competitive advantage (Porter, 1985).

Strategic leadership in higher education is not a new phenomenon. Indeed, in 1963, Clark Kerr argued that:

“Charging ‘full-cost’ and providing unlimited across-the-board programs are no longer viable as the basic principles of operation. Cost should be more carefully scrutinized. And not all universities need to provide coverage of all fields of knowledge; rather, some might concentrate more on what is most needed and what they do best” (Kerr, 1963, p. 190).

The higher education world is undergoing rapid transformation, and is operating in a highly turbulent and dynamic environment that calls for universities to plan and anticipate uncertainties by developing appropriate and sustainable response strategies. Despite previous research, which has argued that strategy, in the business sense, does not apply to a substantially public and a more institutionalised sector such as higher education (Amaral, Jones, & Karseth, 2002; Gumport, 2001) and is, moreover, not achievable in complex, loosely coupled organizations such as universities (Leslie, 1996; Musselin,
anecdotal evidence from higher education has begun to show the contrary, and accordingly challenged these assertions.

Previous studies on research in higher education, even those which have focused on similar theoretical perspectives, have failed to converge on a set of common explanations to clarify strategic positioning in higher education. Some authors argue that universities have an innate tendency to strategize, by differentiating and positioning themselves, while many others argue that universities are likely to become less diverse over time. There are others still whose results have been inconclusive. Most models and frameworks for analysis in higher education are based on defining the governance structure or steering models (see examples of Clark, 1983; Hood, James, Peters, & Scott, 2004; Hood, 1998; Olsen, 1988; van Vught, 1989), and focus on issues of governance, organizational management and leadership, and on specific national contexts, particularly the United States and to a lesser extent Europe (Fumasoli & Lepori, 2011). Additionally, with a few exceptions, much of this has limited empirical basis (Fumasoli & Lepori, 2011), provide limited implications at the organizational and system levels (Fumasoli & Huisman, 2013; Fumasoli & Lepori, 2011), and have not provided sufficient prospects for operationalizing strategy in higher education (Bonaccorsi & Daraio, 2007). Consequently, there is a need not only to study strategy in higher education, but to design a study that provides empirical results, institutional and system level analysis, and offer appropriate opportunities for operationalizing strategy.

The current competitive forces in higher education have confronted the very functioning of universities in its present form and style. Changes to the landscape of higher education such as reduced funding, and the increasing emergence of private providers and new business models, continually disrupts the competitive structure of the industry. The higher education environment is formed by its relationship with students and staff, the intensity of competition among universities that vie for the same value-creating opportunities which affects the ability to generate income, all of which are then additionally influenced by the government (Martinez & Wolverton, 2009a, 2009b).

Accordingly, as an industry facing increasing pressure toward marketization and competition, this study calls for an analysis of higher education, as an industry,
and a call for a more business-oriented framework. The goal is to gain a foundational perspective on the competitive landscape, its environment, its organizations, and the groups and individuals that make up the higher education sector. Understanding the industry’s structure is essential for effective strategic positioning so that institutions can defend themselves against competitive forces and shape them in their own favour (Porter, 2008b). Gaining such a perspective sets the groundwork for further analysis of individual universities with respect to their particular value-chain advantage and strategically attractive competitive positions.

1.2 Focus and aim of the study

This study sets out to investigate the notion of strategic positioning in Australian higher education, more specifically within medical education. In Australia, some faculties of medicine have annual revenues larger than some universities, or larger than all faculties put together within its university. Additionally, medical education is an intensely evidence-driven professional field that operates in an increasingly regulated environment as compared to other fields within universities, which can have an impact on the role and character of strategy.

There are currently 18 medical schools in Australia (MDANZ, 2015a), which provide professional qualifications over a range of medical specializations and foci (such as dentistry), and have alliance(s) with or operate a hospital, hospital service, or medical centre, or several of these. These medical schools are located within Australia’s universities, of which there are 40 (TEQSA, 2015). Like all universities, governance and internal structures differ between medical schools.

Within the regulated environment of medical education, there are operational or technical aspects of regulation that medical schools need to deal with (Tan & Litschert, 1994) while managing their interactions with external entities such as regulatory agencies (Post & Mahon, 1980). In Australia, medical education is regulated by several regulatory bodies, such as the Federal Department of Education (for student numbers and funding), the Federal Department of Health (for rural and regional health training), states departments of health (for clinical placements and health care services funding), and the Australian
Medical Council (for teaching and learning standards and outcomes). In addition, there are a range of other health organizations, such as hospitals and local health systems, and Australian Health Practitioner Regulation Agency, which may have a direct and indirect impact on the strategic management of medical schools.

For the most part, studies on strategy so far have only provided theoretical perspectives and empirical research in business literature. To date, there is very little empirical research within higher education on the topic of strategy, and much less so in the particular context of medical education. This study fills this gap: first theoretically, by using perspectives in strategic management theory, and second empirically, by analysing profiles of medical schools. The study seeks to make a number of both theoretical and practical contributions to the study of strategic positioning in higher education. In doing so, it will provide a deeper understanding and knowledge of the phenomenon.

1.3 Situating strategy in the current study

When investigating this complex terrain, any synthesis can never truly capture all perspectives. This study chooses a particular angle from which to illuminate the whole. As universities increasingly operate in a highly turbulent and dynamic environment, where the dual growth of marketization and competition is evident, this study calls for an analysis of higher education as an industry. Accordingly, this study applies Porter’s strategic positioning and five forces of competitive analysis (Porter, 1985, 2008b) to the medical education industry. In higher education, institutional strategy is best crafted when decision makers understand the context in which their organizations operate. Porter’s framework value is rooted on the forces of competition immersed in the traditional dynamics of economics (King, 2008). From the perspective of higher education industry, a synthesis of Porter’s five force framework is invaluable in gaining and maintaining an overall strategic plan. The analysis helps create a comprehensive picture of the forces that shape an industry and helps decision makers have a wider competitive horizon than a day-to-day myopic operational outlook (King, 2008).
Empirical analysis plays a very important role in order to help disentangle some of the complex processes affecting strategic positioning and the possible causal relationships. In the context of Porter’s strategic positioning perspective, an effective visualisation tool of a university’s performance could further assist management to direct their resources towards a limited set of strategic dimensions, in order to avoid becoming ‘stuck in the middle’ (Mahon & Murray, 1981), adopt strategies which emphasise some dimensions at the expense of others (Kim & Lim, 1988), or choose between alternative strategies (Lukas, Tan, & Hult, 2001; Tan & Litschert, 1994). Accordingly, this study extends the Australian University Profiles (Coates et al., 2013; Mahat et al., 2014) to the medical school context. The Australian University Profiles is a profiling tool which provides insights into universities’ dimensions of activities using ‘positioning’ indicators. Such a profiling tool would enable universities to focus on performance across dimensions and to better position themselves against a landscape of ‘sameness’. This would encourage differentiation, explore benchmarking opportunities and present powerful reference points for various stakeholders (Mahat & Goedegebuure, 2014).

Subsequently, the two chapters on literature review (chapters three and four) aim to unpack the concepts of strategy and the competitive forces that currently structure medical education. Chapter three provides a discussion on various conceptualisations of strategy, and the literature review of strategy in higher and medical education. Chapter four examines the medical education industry through the theoretical application of Porter’s five forces framework. It provides an analysis of each of the environmental forces in the context of Australian medical education. Chapter five operationalizes strategic positioning in higher education by extending the Australian University Profiles to the medical education context. It describes the dimensions of positions that a medical school can choose to focus on and the indicators within.

1.4 Research questions

The development of the research question is a necessary key step in producing relevant results to be used in evidence-based research and practice. In this study, a single primary research question has guided the study:
**Primary research question:** To what extent do medical schools aim to differentiate themselves from each other in the context of a regulated environment?

Three subsidiary research questions structure analysis of the primary question:

**Subsidiary research question one:** What are the principal dimensions/characteristics on which medical schools can position themselves?

**Subsidiary research question two:** How does planning and monitoring of profiles inform strategy formulation in medical schools?

**Subsidiary research question three:** What competitive forces structure the medical education industry, and consequently, affect strategy formulation in medical schools?

The research questions will guide analysis of the empirical component of the study. By aligning the study to these research questions, it will influence interpretation of the results and helps guide a successful research outcome.

### 1.5 Scope of study

This study focuses on phenomena which could be defined and investigated in many different ways. Consequently, the scope of the study is defined at the outset in order to sharpen the focus and precision of the findings. Key scope constraints are summarised below and will be documented and discussed throughout the study. In combination with the study’s findings, many of these limits mark out frontiers for future research.

- This study focuses on strategy formulation rather than strategy implementation. More specifically, it focuses on Porter’s strategic positioning and the five forces of competitive analysis.

- The study draws the distinction between objective and perceived environment. It does not focus on uncertainty or changes in the environment.
• This study draws on the Australian Institution Profiles, a profiling tool to investigate profiles of medical schools. Although this is developed and adapted in the study, the selection of this framework may focus analysis on particular aspects of positioning and performance.

• The study is developed in an Australian context, although it draws heavily on higher education research in the United States and Europe. While it is likely that many aspects of the study might generalise internationally, many assumptions and observations apply most directly to the Australian context.

• This study focuses on medical schools as a case study. While it is likely that the empirical findings may be extendable to other higher education programs and disciplines, the dimensions and indicators have been developed with medical school as a basis.

1.6 Structure of thesis

The remainder of the thesis is structured as follows.

Chapter two: Mapping the context. This chapter sets the scene for Australian higher education and medical education, providing a historical and contextual review. In particular, it looks at the various aspects and features of medical education, including policy and reviews; accreditation; and external and internal governance. It concludes by mapping the regulatory context for medical schools.

Chapter three: Defining strategy. This chapter presents a broad review of the literature on strategy. It begins with a discussion of different conceptualisations of strategy. This chapter also provides a broad discussion of strategy in higher education and review the limited research on strategy in medical education.

Chapter four: The conceptual framework. The fourth chapter advances the conceptual framework which examines the medical education industry through the theoretical application of Porter’s five forces framework. This chapter begins by
providing an overview of the five forces as defined by Porter, including a critique of the framework. It is then followed by a review of studies that have applied the framework to the higher education industry. Subsequently, it will proceed to explore each of the forces in the context of Australian medical education, by looking at the current policy context in, structure of, and interactions within the system.

Chapter five: Operationalizing strategic positioning in higher education. This chapter describes the dimensions of positions and indicators, which will then be used in the profiling tool. It provides the rationale for extending the Australian University Profiles to analyse medical schools’ positions within the system and a discussion on the choice of positioning dimensions and indicators that a medical school can choose to focus on. The final section in this chapter provides an overview of the five dimensions and 23 indicators used in the profiling tool.

Chapter six: Design and method of investigation. This chapter outlines the underlying assumptions, rationale and design of the study. It begins with an account of the qualitative case study approach selected for this investigation, followed by how participants and medical schools were selected, and finally, how data was collected and analysed.

Chapter seven: Findings: Strategic positioning of medical schools. Chapter seven is the first of three chapters presenting the results of the research. This chapter presents the findings for the first research question: What are the principal dimensions/characteristics on which medical schools can position themselves? The chapter concludes with a discussion of the empirical findings by comparing them with the literature.

Chapter eight: Findings: Planning and monitoring of profiles. This chapter is the second of three chapters presenting the results of the research. The chapter presents the findings for the second research question: How does planning and monitoring of profiles inform strategy formulation in medical schools? The chapter concludes with a discussion of the empirical findings by comparing them with the literature.
Chapter nine: Findings: Competitive forces in medical education. This chapter is the last of three chapters presenting the results of the research. The chapter presents the findings for the third research question: What competitive forces structure the medical education industry, and consequently, affect strategy formulation in medical schools? As with the two prior chapters, this chapter concludes with a discussion of the empirical findings by comparing them with the literature.

Chapter ten: Conclusion, implications and future research. The study concludes in chapter ten with a discussion of the conclusion, implications and future research. It is organized into five sections. The first section provides an overview of the study. The second section discusses the contributions the findings of the study have made to research. Next, the third and fourth sections consider the implications of the study to higher education theory and practice. The final section provides directions for future research and some concluding remarks.
Chapter 2

Mapping the Context

2.1 Introduction

The overall aim of this research is to investigate the notion of strategic positioning in Australian higher education, more specifically within medical education. This chapter sets the scene with an overview of Australian higher education, followed by an in-depth review of medical education and medical schools in Australia. It also sets the regulatory context for Australian medical schools.

2.2 Australian higher education

For the greater part of Australian history, universities have been the major providers of higher education. However, the impetus for the creation of the early universities in Australia was not to satisfy demand but rather to recreate social order and the institutions of the ‘Mother Country’ which resembled English universities with some features of the Scottish tradition (Commonwealth of Australia, 1993). Founded in 1850, the University of Sydney was Australia’s first university. By 1914, an additional five universities were established with 3,300 students (or 0.1 percent of the Australian population) enrolled across the six universities (Breen, 2002).

Post-World War II (WWII) and accompanying return of young men, saw an increase in student enrolment in recognition of the increased demand for teachers and the rising importance of higher education in national economic growth (Commonwealth of Australia, 1993). Expansion of higher education post-WWII justified the creation of non-research higher education institutions, or what was known as the binary system, in order for students- to ‘receive the kind of education best suited to their innate abilities and purposes in life’ (Commonwealth of Australia, 1965).
As university enrolments continued to rise steadily until the mid-1970s, new universities were established to accommodate the demand. By 1975, there were 148,000 students enrolled in 19 universities and just under 130,000 students enrolled in the 75 Colleges of Advanced Education (CAE) (Commonwealth of Australia, 1993). By the mid-1980s however, growth slowed down due to the financial crisis at the time with a total of 279,000 students¹ in the sector, with numbers spread equally among university and colleges of advanced education (Commonwealth of Australia, 1993).

In the early years, the Australian Federal government had virtually no control or influence over universities. Except for the Australian National University (ANU) that was established under the Commonwealth legislation, all the other public universities were established as an act of state and territory legislation. The inquiry by the Committee on Australian Universities in 1957 became the first of many national reviews of Australian university education and heralded the beginning of government influence on higher education (Commonwealth of Australia, 1957). Broadly speaking the reviews are of two kinds—those that seek to renew a policy environment with a concomitant effect on government funding and its regulatory requirements, and those responding to externalities such as crises in the international student market with more of a direct regulatory effect on providers, for example through more stringent entry standards and stronger oversight (Commonwealth of Australia, 2013b). Table 1 provides some of the significant changes in Australian higher education since 1988.

Two major reforms (bold in Table 1) in Australian higher education are critical to understanding the way the national landscape has changed to how it is today. The first in 1989 was the ‘Dawkins reforms’ which saw structural changes within the system. The second in 2008 was the expansionist Labor policy, which followed the ‘Bradley review’. Both will be discussed in turn.

¹Effective Full-time Student Load (EFTSL)
Table 1: Timeline of significant changes in Australian higher education from 1988 onwards

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1988 | - Higher Education Funding Act 1988  
      - Employment, Education and Training Act 1988  
      - Abolition of Tertiary Education Commission and introduction of National Board for Education, Employment and Training (NBEET), including its advisory Higher Education Council and Australian Research Council |
| 1989 | - Introduction of the Unified National System and conversion of Colleges for Advanced Education to universities (“the Dawkins Reforms”)  
      - Introduction of the Higher Education Contribution Scheme (HECS)  
      - Direct Commonwealth funding of higher education providers conducted via individual negotiations between universities and the Department, monitored by the Higher Education Council |
| 1990 | - Relative Funding Model corrects misalignment of Commonwealth funding between universities by 1995, becoming basis for Triennial Funding Rounds |
| 1991 | - Education Services for Overseas Students (Registration of Providers and Financial Regulation) Act 1991 |
| 1993 | - Commission for Quality Assurance in Higher Education established |
| 1995 | - Australian Qualifications Framework established |
| 1997 | - Education Services for Overseas Students (ESOS) (Registration Charges) Act 1997 |
| 1998 | - West Review (Learning for Life) recommended increased tuition fee flexibility and demand-driven funding, yet these recommendations were not adopted by the Government  
      - Introduction of full-fee domestic student places |
<p>| 1999 | - Workplace Reform Program. Increased funding made available in return for institutional changes in workplace relations, management and administration |</p>
<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2000 | - Formal abolition of National Board of Employment Education and Training (NBEET) and its advisory Councils.  
- Education Services for Overseas Students Act (ESOS) provides legal framework for overseas students studying on a student visa  
- Australian Universities Quality Agency (AUQA) commences |
| 2001 | - Australian Research Council (ARC) Act 2001; ARC becomes independent entity for the distribution of research grants  
- Backing Australia’s Ability. Expansion of government competitive research funding, established Centres of Excellence, increased targeted university places and introduction of the Postgraduate Education Loans Scheme (PELS)  
- ESOS Assurance Fund commences operation – provides 3rd layer tuition assurance and protection to overseas students  
- The National Health and Medical Research Council (NHMRC) Act was amended to give the agency some independence from the Department of Health and Ageing (DOHA), following the Wills Review of Health and Medical Research. |
| 2004 | - Transitional HESA arrangements  
- Abolition of PELS (replaced later by FEE-HELP) and Bridging for Overseas-Trained Professionals Loan Scheme (BOTPLS)  
- Introduction of the Student Learning Entitlement |
| 2005 | - Commonwealth Grant Scheme established along with student entitlement to Commonwealth supported places – negotiations managed through funding agreements and Institutional Performance Portfolios  
- FEE-HELP scheme commences – expansion of private provider market  
- Changes to discipline funding clusters  
- New funding arrangements introduced including workplace productivity and national governance protocols |
<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2006 | - Introduction of Voluntary Student Unionism  
      - Review of the ESOS National Code  
      - The 2006 Senate Community Affairs Legislation Committee Inquiry into the NHMRC Amendment Bill 2006, oversaw the split of NHMRC from the Department of Health and Ageing (DOHA). |
| 2007 | - Review of HESA – funding clusters adjusted from 2008  
      - National Code of Practice for Registration Authorities and Providers of Education and Training to Overseas Students |
| 2008 | - Bradley Review of Australian Higher Education – recommends demand-driven funding as well as a range of other changes  
      - VET FEE-HELP scheme commences – increasing intersections for providers between VET and higher education  
      - Changes to discipline funding clusters and student contributions  
      - AUQA Second Round audits begin  
      - The Cutler Review of Australian Innovation Venturous Australia (2008) provided recommendations to update and broaden the innovation policy agenda |
| 2009 | - Phasing out of fee paying undergraduate places at public universities  
      - Changes to discipline funding clusters and student contributions and loadings  
      - Innovation White Paper, Powering Ideas an Innovation Agenda for the 21st Century (2009): articulates a 10 year agenda for innovation policy (Sustainable Research Excellence (SRE), Excellence in Research for Australia (ERA), Super Science initiatives) |
| 2010 | - Increases in undergraduate enrolments as over-enrolment funding increases to 10% in transition to demand drive funding  
      - Review of Funding for Postgraduate Places  
      - Changes to discipline funding clusters and student contributions and loadings  
      - Baird Review of the ESOS Act  
      - Review of International Foundation Program Standards  
      - Introduction of triennial Mission-based Compacts |
<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2011 | - Australian Skills Quality Authority (ASQA) commences activities  
- Higher Education Base Funding Review undertaken  
- Knight Review of the Student Visa Program  
- Launch of MyUniversity website  
- TEQSA Act 2011 |
| 2012 | - TEQSA commences activities. First providers given re-registration  
- Full demand driven funding system for undergraduate places (with caps introduced for sub-bachelor places)  
- Tuition Protection Scheme introduced for international students  
- Phillips KPA Review of Universities Reporting Requirements  
- Review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander People  
- Abolition of Student Learning Entitlement  
- Chief Scientist releases the National Research Investment Plan  
- 2nd phase of the Government response to Baird Review. A new Tuition Protection Service commences  
- Establishment of the National Advisory Group for Higher Education Data and Information |
| 2013 | - Review of Higher Education Standards  
- Review of National VET Standards  
- TEQSA Risk Assessments first round completed  
- TEQSA Third-Party Service Provision quality assessment survey  
- A Plan for Australian Jobs released, including the introduction of Industry Innovation Precincts and work toward an Australian Innovation Statement  
- McKeon Review of Health and Medical Research released  
- Launch of MySkills website |

Source: Commonwealth of Australia (2013b)
The first year of the Dawkins reforms in 1989 has been marked as a turning point in Australian higher education system. The Honorary John Dawkins, the then Education minister, sought to increase the opportunity to expand higher education to people previously ‘excluded’ (Goedegebuure & Schoen, 2014). The Unified National System, established under his leadership, introduced reforms which are still present today. Key amongst these were the re-introduction of tuition fees for domestic students (the Higher Education Contribution Scheme), the dismantling of the binary system, and changes to the way research was funded (Cauldrake & Stedman, 2013; Croucher, Marginson, Norton, & Wells, 2014).

Just prior to the economic downturn in the early 1980s, Australia had 19 universities and 75 CAEs (Commonwealth of Australia, 1993). Following the Dawkins reforms, these institutions morphed into 35 universities, through a combination of mergers and takeovers (Goedegebuure & Meek, 1991; Goedegebuure, 1992). The universities received public funding from the Australian Government through the Higher Education Support Act 2003, and self-accrediting status, which allowed them to have a reasonably high level of autonomy to operate within the legislative requirements associated with their Australian Government funding (Harman & Meek, 2000).

The 2008 Bradley Review (Bradley, Noonan, Nugent & Scales, 2008) ushered in reforms that prompted new forms of expansion and accountability. Most significantly, following the review, Australia adopted an expansionary target of 40 percent participation rate for bachelor-level study by 2020. The Federal government, up to this point, sets a quota for the number of students enrolled at universities. The Bradley review resulted in an uncapping of student places and the introduction of a demand-driven system, which meant that universities could enrol as many students as they could attract and obtain Commonwealth funding for. The Tertiary Education Quality and Standards Agency (TEQSA) was established under the auspices of keeping institutions transparent and accountable, under the new demand-driven system. Additionally, the establishment of the Advancing Quality in Higher Education (AQHE) initiative also prompted the development of a suite of key performance measures in learning and teaching. These include the University Experience Survey (Radloff, Coates, James, & Krause, 2012), a Graduate Outcomes Survey and the Employer Satisfaction Survey (Oliver, Freeman, Young, Yu, & Verma, 2014).
2.2.1 Regulation in Australian higher education

In Australia, the Federal government plays a significant role in regulating higher education. Kwong and Braithwaite (2013) found that the Federal government play a key role in ‘steering the flow of events’ (Parker & Braithwaite, 2003) through its various funding negotiation and accountability mechanisms, such as the Commonwealth Grant Scheme funding agreements, Mission-based Compacts (Compacts) and Institutional Performance Portfolios (IPPs), and data and information requirements as a result of these funding activities. They noted that such regulation consists of forward looking assurances of strategic planning, and the backward looking accountabilities for delivery and outcomes. Both have an important role in regulating the sector particularly when they are linked through regular, on-going conversations and discussions within the sector.

According to Kwong and Braithwaite (2013), the current regulation architecture in Australia is composed of multitude of structures and agencies, each with their own reporting lines, decision-making arrangements and legislative authorities. These include, but are not limited to, the Tertiary Education Quality and Standards Agency (TEQSA), the Higher Education Standards Framework, the Australian Qualifications Framework, as well as those in Vocational Education and Training (VET) and regulations such as the Australian Standards and Quality Agency (ASQA), the National Standards and Skills Council (NSSC), the Standing Council on Tertiary Education, Skills and Employment (SCOTESE) and the Council of Australian Governments (COAG). Not unusual by international standards, the Australian regulatory environment is “compartmentalised, yet intersecting, formally and informally, and as a result undoubtedly difficult for stakeholders to understand and navigate easily” (Commonwealth of Australia, 2013b, p. 13). Additionally, the role of the Federal government as a regulator has not been well-articulated within the Australian regulatory environment (Commonwealth of Australia, 2013b).

In the 2014–15 Australian Budget, the Federal Liberal/Coalition government proposed a number of measures that together would radically overhaul the higher education sector. Whilst maintaining the demand-driven system introduced by the previous government, these proposals aimed to deregulate the provision of places by: (1) allowing non-university providers (including private providers and Technical and
Further Education colleges) access to Commonwealth supported places (previously called Higher Education Contribution Scheme or HECS places); and (2) allowing higher education providers to set their own uncapped prices for the student contribution component of those places. The aims were to reduce the government share in the funding of Commonwealth supported places and remove any limits to the amount a student can borrow under the income-contingent Higher Education Loan Programme (HELP). This would have moved the sector to a greater user-pays and market-driven model. However, the legislation sparked widespread protests from students when announced, alongside criticism from both the Labor and the Greens parties. The legislation was voted down in March 2015, the second time the Coalition’s higher education changes have been rejected. In the 2015-16 Mid-Year Economic and Fiscal Outlook (MYEFO) document, released on 15 December 2015, the Federal government confirmed the controversial university deregulation plan to be shelved in the current term of government (Commonwealth of Australia, 2015a).

Operating within higher education is a complex task as a result of the reviews on higher education, as described in the previous section, alongside the compartmentalised nature of Australian regulatory environment, and uncertainty resulting from changes in legislation. Regulation in higher education is common across countries although the extent of regulation intervention varies among systems. In most cases, and Australia is no exception, institutions globally are being granted more autonomy by governments. But it is fair to say that governments have sometimes been hesitant to grant institutional autonomy in all areas (Esterman & Nokkola, 2009). Moreover, governments have often exchanged a priori control (through regulation) with ex post controls (through evaluation) (Neave, 2012). In the Australian context, regulation of higher education can be summarised as follows:

*Australia’s change in funding regime and its subsequent battles over risk-based regulation, institutional profiles and standards provides for further evidence of the dual dynamic of growing marketization and competition that is coupled with growing hierarchical oversight and reduced discretionary professional judgement* (Black et al., 2015, p. 7).
Although the higher education sector has witnessed substantial growth over the years, concerns have been raised about the quality of Australian higher education generally and its competitiveness within the global market (for example Coaldrake & Stedman, 2013). Moreover, significant and diverse forces, such as globalisation and the growing use of technology, have driven further changes in the higher education landscape. The question then arises, can higher education institutions, especially universities with a long history of academia and scholarship, navigate such a regulated context, to make strategic decisions about their positions with the system?

2.2.2 The current state of play

Today, the Australian higher education system comprises 40 universities, one university of specialisation and two overseas universities (TEQSA, 2015). Universities have self-accrediting status. Each university has its own establishment legislation (generally State and Territory legislation except for the Australian National University) and all receive the vast majority of their public funding from the Australian Government through the Higher Education Support Act 2003. As self-accrediting institutions, Australia’s universities have a reasonably high level of autonomy to operate within the legislative requirements associated with their Australian Government funding. Australian universities are represented through the national universities’ lobbying body Universities Australia. Eight universities in this list have formed a group in recognition of their recognized status and history, known as the ‘Group of Eight’ or ‘Go8’. Other university networks include the Australian Technology Network of Universities (ATN), Innovative Research Universities (IRU) and Regional Universities Network (RUN) collectively grouped through common characteristics.

Within tertiary education, there are also 129 non-university providers (TEQSA, 2015) that have been granted approval to operate and have had their courses accredited by State and Territory accreditation agencies before the establishment of TEQSA. Non self-accrediting higher education providers form a diverse group of specialised, mainly private providers that vary in size from small providers to large international corporations, and disciplines offered. Many private higher education providers are established under corporations law.
In addition, there are a significant number of dual or multi sector providers that operate across two or more sectors. These include a number of dual sector universities, which operate across both the university and vocational education and training sectors, including Australian Catholic University, Central Queensland University, Charles Darwin University, Edith Cowan University, Federation University Australia, RMIT University, Swinburne University of Technology, and Victoria University (Department of Education and Training, 2015a). Additionally, there are other universities, such as University of Technology Sydney through Insearch and Monash University through Monash College, which offer vertically integrated programs and services systematically through registered training organisations or wholly owned colleges, most often for international students. Other Australian universities, such as University of Adelaide, offer programs that are vocational education in level and thus are dual sector on a broad use of the term (Moodie, 2008). Approximately 50 percent of higher education providers regulated by TEQSA are also regulated by ASQA, with the majority of higher education providers also registered as Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS) providers (Commonwealth of Australia, 2013b).

In 2014, there were over 1.3 million students enrolled in Australian higher education institutions (Department of Education and Training, 2015c), an increase of almost 130 percent since 1981 (See Figure 1). Of the 1.3 million, 25 percent are international students. About 94 percent of students are enrolled in universities and 6 percent in non-university providers (Norton, 2014). A distinctive characteristic of Australian higher education is the internationalisation of its student population. The internationalisation of Australia’s education system can be traced back to 1950, when the Colombo Plan, an intergovernmental collaboration aimed at strengthening social and economic development in the Asia-Pacific region, was implemented (Moodie, 2011). The Colombo Plan enabled students from Asian countries with limited tertiary facilities to receive a scholarship to study in Australia. In 1986, the Australian government officially opened its doors to international students, allowing universities to accept full-fee paying international students, at fees they set and kept. A massive recruitment and marketing drive followed, promoted at times by migration policies favouring former international students, leading to 2,000 percent growth in international students from 1986 to 2006 (Moodie, 2011; Norton, 2014). Figure 1 shows the enrolment trend for international students since 1988.
Figure 1: Enrolment trend in Australian higher education, 1988 – 2014
2001-2014 data from Department of Education and Training (2015e)
2.3 Australian medical education: History and overview

This section contributes to the chapter by specifically discussing the rapidly changing contexts of Australian medical schools. It reviews historical and present trends within medical education and medical schools, including policies, funding, accreditation, and curriculum, which have led to the expansion and diversification of Australian medical education, and consequently medical schools. This section concludes by summarising the regulatory context surrounding medical schools. The analysis centres primarily on medical schools, which offer undergraduate and graduate medical education. Trends and changes in other areas of medical education, such as postgraduate and specialty medical training are referred to only as far as these changes may be directly related to the current focus on medical education.

2.3.1 Policies and reviews

Three major reviews of medical education conducted outside of Australia had considerable impacts on Australian medical education. The first was conducted by Flexner (1910) on medical education in the United States and Canada and a follow-up report on the situation in Europe and the United Kingdom in 1912 (Leinster, 2011). The second and third reviews were conducted in the United Kingdom, when Australian medical education was shaped predominantly by the requirements of the General Medical Council (GMC) in the United Kingdom: the 1944 Report of the Inter-departmental Committee on Medical Schools (Ministry of Health, 1944) and the second by the Royal Commission on Medical Education or known as the Todd Report (Royal Commission on Medical Education, 1968). Additionally, a host of reviews within Australia has changed the landscape of the Australian medical education. The impact of each of these is described in turn.

Flexner’s 1910 report changed the face of American medical education (Bonner, 2002; Cooke, Irby, Sullivan, & Ludmerer, 2006; Hamilton, 2010; Lagemann, 1983). Following Flexner’s report, which was very critical of the medical education system, American medical schools were forced to implement stricter admissions and curriculum requirements, causing many institutions to shut down altogether, about 50 of them by 1930 (Hiatt & Stockton, 2003). One of Flexner’s major contributions was identifying the
need for a sound education in science and formal clinical education as a basis for medical education. The system of medical education which developed—a period of ‘pre-clinical’ scientific studies followed by a period of formal ‘clinical’ education—became the universal pattern adopted throughout the world (Leinster, 2011). Although not explicitly, Flexner also laid out the underlying principles behind Problem-Based Learning (PBL) (Hamilton, 2005). This involved using a problem (usually clinical) as a trigger for student learning (Barrows, 1998), and is based on the rationale of making learning relevant for the student, to improve communication skills, to work collaboratively in a group and to inculcate self-directed and life-long learning. McMaster University in Canada pioneered the first PBL curriculum in 1969, although not attributed to Flexner and not based on any philosophical or cognitive theoretical underpinnings (Hamilton, 2005; Neville, 2009). Based on the McMaster model, the University of Newcastle became the first university in Australia to adopt PBL in 1978 (Brooks, Doherty, & Donald, 2001; Henry, Byrne, & Engel, 1997). Flexner’s direct contribution to Australian medical education came many years later with the appraisal of the Australian medical system and the subsequent establishment of the Australian Medical Council (AMC) (Hamilton & Vandewerdt, 1990; Hamilton, 2010).

The second review, chaired by Sir William Goodenough, was the interdepartmental inquiry into medical education. It recommended that medical schools be based within universities, and that teaching hospitals be equipped with academic departments in the major medical specialties (Ministry of Health, 1944). All Australian medical schools, at the time, adopted this originally United Kingdom format and this is the model that still exists today. By implementing the United Kingdom structure, Australian universities have become respected institutions whose graduates are widely sought after and often retained, when they go overseas for further training (Geffen, 2014).

Finally, the third review, known as the Todd report (Royal Commission on Medical Education, 1968), took place at a time when approval of Australian medical courses still rested with the General Medical Council in the United Kingdom. This review had an even greater direct impact. In particular, it encouraged two curricular developments, which led to medical schools in Australia (and the United Kingdom) to experiment and change the content of their courses. The first was to place a greater emphasis on the social and human
side of medicine, and the second was to move away from the traditional model of degree structure—of one year of basic science, followed by two years of medical science, followed in turn by three years of clinical medicine (Sheldrake, Linke, Mensh, Newble, & Rosinski, 1978).

The first major internal review that had a significant impact on Australian medical education was conducted in 1973 and chaired by Professor Peter Karmel (Australian Universities Commission, 1973). Just prior to the release of the Karmel report, Australia had eight medical schools, confined predominantly to the older institutions because of “strong resistance to other institutions entering these fields, not only from government, but also from professional associations” (Meek & O’Neill, 1996, p. 72). The Karmel Report (Australian Universities Commission, 1973) came at a time when there was an expectation for more medical graduates in view of the then-prevailing population statistics (Sheldrake et al., 1978). The report recommended an increase in the number of medical graduates (Brooks et al., 2001; Sheldrake et al., 1978) and a new focus on community-based medical education (Brooks et al., 2001). As a result, new medical schools were proposed and established ones were encouraged to increase their student intake. Newcastle and Flinders Medical Schools were established not long after the review.

Another review of Australian medical education was undertaken by Sheldrake et al. (1978) and focussed predominantly on undergraduate medical education. The review identified three major factors that would influence medical education in the next ten years. These were the demand for medical graduates, the availability of funds for medical schools, and the changing patterns in health care utilisation and the financing of health care services. Sheldrake et al. (1978) also alluded to evidence of an impending oversupply of qualified doctors but claimed that any changes to medical education based solely on the number of graduates were likely to be minimal.

In contrast, the Doherty report (Doherty, 1988) had wide terms of reference, covering a larger scope of medical education. Among the recommendations, some have already transpired, some were considered and rejected; and others were simply ignored (Brooks et al., 2001). In terms of undergraduate medical education, it supported
self-directed learning, community involvement, maximal use of new technology and innovative selection methods.

A further review commissioned by the then Federal education department was aimed at synthesising the research findings of the Australian Medical Education Study (AMES) (Commonwealth of Australia, 2008). The report, What Makes for Success in Medical Education, also focused on undergraduate medical education. The study investigated ways in which undergraduate medical education prepared students for internships and postgraduate specialty training and research, and analysed aspects of the clinical component of the curriculum. Some key challenges identified were adapting to the rapid change in health care needs and priorities, ensuring adequate depth and breadth of clinical education, and the broad range of inter-organizational and governance issues.

Following the release of a report into the review of rural undergraduate medical education in 1994 (Commonwealth Department of Human Services and Health, 1994), the Federal Government announced a major strategy for creating new academic units located in rural centres and focusing on rural and remote health. Responding to a major rural health issue—the difficulty of attracting doctors and healthcare professional to work in rural health Australia—the aim was to ensure that 25 percent of medical students receive at least 50 percent of their clinical training in a rural and remote area.

As with the national higher education landscape, Australian medical education has been peppered with myriad reviews and recommendations, followed by reforms, in various aspects of medical education. These have led to many changes internal and external to the medical school, such as the student profile and various aspects of the medical program from admission criteria to pedagogy and curriculum, and to assessments. The next subsections describe various features and changes associated with Australian medical education and medical schools.
2.3.2 Medical schools and student profiles

Established six years after the founding of the first university, the medical school at the University of Sydney is the oldest medical school in Australia, followed by the University of Melbourne’s medical school five years later. Despite its later start, Melbourne was first to open its doors and confer an ad eundem degree (a courtesy degree awarded by one university or college to an alumnus of another) and degrees by examination, and hence claimed the honour of being the first medical school in Australia (Young, Sefton, & Webb, 1984). Modelled after British and Scottish medical schools, the early medical schools established themselves with five year undergraduate-entry programs using traditional methods of teaching, which permitted entry from secondary matriculation (Russell, 1977; Young et al., 1984).

There are currently 18 medical schools in Australia (MDANZ, 2015a), which provide professional qualifications over a range of medical specialisations and foci, and have alliance(s) with or operate a hospital, hospital service, or medical centre, or several of these. These medical schools are located within Australia’s universities, of which there are 40 (TEQSA, 2015). There are also 17 rural clinical schools with multiple training locations, managed by 16 universities (Commonwealth of Australia, 2013a). Table 2 shows the 18 medical schools chronologically listed by their commencement dates. Since 2008, the University of New England has a joint medical program affiliated with the University of Newcastle. At the time of the current study, one new medical school, the Curtin Medical School, was approved by the Federal Government for commencement in 2017.
Table 2: Australian medical schools

<table>
<thead>
<tr>
<th>No.</th>
<th>Institution</th>
<th>Year commenced&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The University of Melbourne</td>
<td>1862</td>
</tr>
<tr>
<td>2</td>
<td>The University of Sydney</td>
<td>1883</td>
</tr>
<tr>
<td>3</td>
<td>University of Adelaide</td>
<td>1885</td>
</tr>
<tr>
<td>4</td>
<td>The University of Queensland</td>
<td>1936</td>
</tr>
<tr>
<td>5</td>
<td>The University of Western Australia</td>
<td>1957</td>
</tr>
<tr>
<td>6</td>
<td>Monash University</td>
<td>1961</td>
</tr>
<tr>
<td>7</td>
<td>The University of New South Wales</td>
<td>1961</td>
</tr>
<tr>
<td>8</td>
<td>The University of Tasmania</td>
<td>1965</td>
</tr>
<tr>
<td>9</td>
<td>Flinders University of South Australia</td>
<td>1974</td>
</tr>
<tr>
<td>10</td>
<td>The University of Newcastle*</td>
<td>1978</td>
</tr>
<tr>
<td>11</td>
<td>James Cook University</td>
<td>2000</td>
</tr>
<tr>
<td>12</td>
<td>The Australian National University</td>
<td>2004</td>
</tr>
<tr>
<td>13</td>
<td>Griffith University</td>
<td>2005</td>
</tr>
<tr>
<td>14</td>
<td>The University of Notre Dame Australia (Fremantle/Sydney)</td>
<td>2005/2008</td>
</tr>
<tr>
<td>15</td>
<td>Bond University</td>
<td>2006</td>
</tr>
<tr>
<td>16</td>
<td>The University of Western Sydney</td>
<td>2007</td>
</tr>
<tr>
<td>17</td>
<td>The University of Wollongong</td>
<td>2007</td>
</tr>
<tr>
<td>18</td>
<td>Deakin University</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td>The University of New England*</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td>Curtin University</td>
<td>2017</td>
</tr>
</tbody>
</table>

Source: Various medical schools’ websites

It can be seen from Table 2 that the Australian government effectively doubled the number of medical schools from the turn of the millennium, in the face of a significant medical workforce shortage (Joyce, Stoelwinder, McNeil, & Piterman, 2007). These new medical schools along with the new rural clinical schools were given a much clearer mission to produce a primary medical workforce than had been previously expressed by the Government (Commonwealth of Australia, 2013a; Lawson, Chew, & Van Der Weyden, 2004).

<sup>2</sup> By date of commencement rather than established.
The profile of Australian university medical students has evolved. Undergraduate enrolment increased during the 1970s, in response to the Karmel report, and then decreased in the 1980s due to limits placed on domestic undergraduate intake. Graduations from medical schools rose steadily from 851 in 1970 to 1,278 in 1980 and then declined to 1,030 graduates in 1990 as a result (Joyce et al., 2007). The workforce shortage and then oversupply have contributed much to the diverse ‘character’ of medical students.

As mentioned earlier, within Australian higher education generally, the Federal government sets restrictions on the number of students a university can enrol. This restriction also applies to the number of students a medical school can enrol. In 2004, there were 2,120 commencing undergraduate and graduate student enrolments in Australia’s 18 medical schools, of which approximately 20 percent were international students (MDANZ, 2015d). Since 2004, medical schools have been enrolling domestic full-fee paying students in addition to Commonwealth-funded ones, although this ceased in 2009 following changes in legislation (which applies to the whole higher education sector, not just medical education). In 2014, Australia had 3,737 commencing medical students, including 552 international students (MDANZ, 2015d), a 76 percent increase in overall enrolments. Figure 2 provides trend data for commencing medical students from 2002 (MDANZ, 2015d).
Figure 2: Commencing medical students, 2002 – 2014

Source: MDANZ (2015d)
The increase in the number of international students has been amplified by limits placed on domestic undergraduate intake, as mentioned earlier, and changes in policy enabling international graduates to remain in Australia and obtain access to general medical registration here (Joyce et al., 2007). Students in Australian medical schools represent a diverse range of backgrounds. The ratio of male to female is roughly equal for undergraduate enrolment but higher in graduate medical schools (Brooks et al., 2001). The graduating age is also increasing, fuelling concerns about length of programs. A number of medical schools has also been involved in the re-training of overseas-trained doctors (Brooks et al., 2001). **Figure 3** shows trend data for medical graduates from 2002 (MDANZ, 2015e, 2015f).

![Figure 3: Medical school graduates, 2002 – 2013](image)

Source: MDANZ (2015e, 2015f)
2.3.3 Internal structure and governance

As mentioned in the previous section, some Australian medical schools combine a number of different foci including dentistry within the medical school framework. Consequently, the internal academic organizational structures of medical schools would vary depending on their additional areas of disciplinary focus. Additionally, the internal governance varies between medical schools. A review of medical schools’ websites showed that only three deans of medical schools reported directly to the Vice-Chancellors of their universities. A third of all medical schools sit within a wider faculty or division, which may include biomedical or health sciences, dentistry and nursing. Six of the medical schools also sit within an internal organizational structure with at least four layers of accountability (e.g. school-, faculty-, Deputy Vice-Chancellor- and Vice-Chancellor-levels). Others have Pro Vice-Chancellors and/or Executive Deans within the mix of reporting lines.

The deans of a faculty or medical school, can often be likened to the Vice-Chancellor of the university, given that they are “at the intersection where institutional strategy is delivered, which today in Australia includes industry engagement, fund-raising, and innovation in additional to the usual foci of teaching and learning and research” (Goedegebuure & Schoen, 2014, p. 1387). In most cases, the faculty or school’s management structure complements a similar structure at the central university level, and consists of the executive team, a range of professional staff and committees which support undergraduate and postgraduate teaching and research administration, corporate services, strategy, policy and engagement.

To demonstrate the complexity and differences in medical school internal organizational structures and governance, Figure 4 and Figure 5 show the organizational structures of the Sydney Medical School (Sydney Medical School, 2015) and UNSW Medicine (UNSW Medicine, 2012b) respectively, according to their websites.
### Chapter 2

**Figure 4: Sydney Medical School's organizational structure**

**Central Clinical School**

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Nepean Clinical School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sydney Adventist Hospital Clinical School**

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Nepean Clinical School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Centre</td>
</tr>
<tr>
<td></td>
<td>Biomedical Science</td>
</tr>
<tr>
<td></td>
<td>School of Medical Sciences</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
</tr>
</tbody>
</table>

**Northern Clinical School**

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Northern Clinical School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Centre</td>
</tr>
<tr>
<td></td>
<td>Biomedical Science</td>
</tr>
<tr>
<td></td>
<td>School of Medical Sciences</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
</tr>
</tbody>
</table>

**Children's Hospital at Westmead Clinical School**

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Northern Clinical School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Centre</td>
</tr>
<tr>
<td></td>
<td>Biomedical Science</td>
</tr>
<tr>
<td></td>
<td>School of Medical Sciences</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
</tr>
</tbody>
</table>

**School of Rural Health**

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Northern Clinical School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Centre</td>
</tr>
<tr>
<td></td>
<td>Biomedical Science</td>
</tr>
<tr>
<td></td>
<td>School of Medical Sciences</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
</tr>
</tbody>
</table>

**Western Sydney Clinical School**

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Western Sydney Clinical School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Centre</td>
</tr>
<tr>
<td></td>
<td>Biomedical Science</td>
</tr>
<tr>
<td></td>
<td>School of Medical Sciences</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
</tr>
</tbody>
</table>

**School of Public Health**

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Western Sydney Clinical School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University Centre</td>
</tr>
<tr>
<td></td>
<td>Biomedical Science</td>
</tr>
<tr>
<td></td>
<td>School of Medical Sciences</td>
</tr>
<tr>
<td></td>
<td>Pharmacology</td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
</tr>
</tbody>
</table>
2.3.4 Accreditation

As previously discussed, the accreditation of Australian medical schools was historically conducted by the General Medical Council (GMC) of the United Kingdom. While this allowed Australian medical graduates to register as medical professionals in the United Kingdom without further examinations (Brooks et al., 2001), it also imposed constraints on the duration of a primary medical degree (of not less than five years) on Australian medical schools (Geffen, 1991). It was only in 1985 that the Australian Medical Council (AMC) was established as an independent national standards body for medical education and training, with the responsibility for the accreditation process for all phases of medical education (Smallwood, Frank, & Walters, 2010). As Hamilton (2010) acknowledged, the Flexner report of 1910 influenced how the AMC was subsequently developed and hence played a major role in shaping the current Australian medical education system.

Under the AMC, the process of accrediting medical schools involves critical evaluation of all aspects of the education program against standards. This involves a critical analysis in areas such as governance, graduate outcomes, curriculum, teaching and learning, and a site visit to meet with current stakeholders within the medical school. Medical schools are assessed against eight standards covering (Australian Medical Council, 2012d):

1. The context of the medical school
2. The outcomes of the medical course
3. The medical curriculum
4. The curriculum - teaching and learning
5. The curriculum - assessment of student learning
6. The curriculum - monitoring and evaluation
7. Implementing the curriculum - students
8. Implementing the curriculum - educational resources
Additionally, medical schools need to demonstrate how their medical programs enable their graduates to meet published graduates’ outcomes, which are organized into four domains. The four domains, listed below, collectively provide the requirements that students must demonstrate at graduation (Australian Medical Council, 2012d).

1. Science and Scholarship: the medical graduate as scientist and scholar
2. Clinical Practice: the medical graduate as practitioner
3. Health and Society: the medical graduate as a health advocate
4. Professionalism and Leadership: the medical graduate as a professional and leader

Initially, some medical schools had anticipated an automatic ‘rubber-stamping’ of accreditation by the AMC (Henry et al., 1997). However, the AMC has proved to be quite formidable, granting limited accreditation of only five years to three of the ten medical schools at that time (Henry et al., 1997). Now in its thirtieth year of operation, the AMC provides accreditation and recognition of basic medical education but also of specialist medical education and training, professional development programs, assessments of international medical graduates and recognition of medical specialities. The AMC provides advice on these matters to the Commonwealth Minister for Health and Ageing.

2.3.5 Funding

In the 1960s and 70s, successive federal governments provided an increase in university funding to help promote Australia as a ‘clever’ country. The increased funding provided opportunities for many initiatives. It allowed medical schools to considerably expand their facilities, accommodate clinical departments in or near teaching hospitals, create full-time academic units in clinical after sciences and to appoint full-time deans (Brooks et al., 2001). In addition to Newcastle and Flinders mentioned earlier, two new medical schools (at the James Cook University and the Australian National University) were also established.
Since the 1994 review of rural undergraduate medical education, further federal funding has also been allocated for rural medical education programs. Funding was announced in 1998 for a prototype rural clinical school in Wagga Wagga, in 1999 for a new medical school with a focus on rural, remote, Indigenous and tropical health at James Cook University, in 2000, for a further three university departments of rural health and nine rural clinical schools. Other rural funding initiatives, which have had an impact on medical education generally, include new Australian Health Care Agreements in 2003, and the introduction of Bonded Medical Places Scheme in 2004 and rural undergraduate scholarships for allied health in 2005.

The Federal Government also provides funding to medical schools through the Commonwealth Grants Scheme, whereby the government funds each university for a proportion (approximately 60-70 percent) of the cost of the medical degree. The funding has increased somewhat over the last decade. In 2015, a student contributed $10,266 to the cost of study in a medical program while the Federal Government provided approximately $20,000 (Department of Education and Training, 2015d).

Another source of funding is the individual or organizations that bequeath money to medical schools. It was reported that in 2014, $400 million were donated to health and medical research, approximately 10 percent of Australia’s total philanthropic income (Kerin, 2014). The government’s plans for a Medical Research Future Fund have the potential to reduce philanthropic sources of funding (Kerin, 2014).

2.3.6 Admission criteria, program, curricula and assessment

A number of landmark changes in admission, program, curricula, and assessment have occurred that have altered the landscape of medical education in Australia. First, as mentioned earlier, was the introduction of Problem-Based Learning (PBL) into teaching pedagogy. A majority of Australian medical schools have adapted their curricula to centre on or include substantial PBL. In its infancy, the first adoption of PBL at Newcastle medical school caused some uneasiness amongst traditional science-based practitioners. While there are still some disputes about the merits of PBL, Newcastle
is no longer “out of step” and other medical schools have “seen the light” emulating from its success (Henry et al., 1997, p. 2).

Another important innovation introduced at the Newcastle medical school was the use of interviews (in the 1970s) and then admission testing (in the 1990s) in the student selection process. The rationale for this change in the selection process was twofold: “to reduce the large number of otherwise qualified and capable applicants to match the number of places available, and to enrol students thought most likely to succeed in what is an arduous program of study and to subsequently become effective members of the profession” (Wilkinson et al., 2002, p. 349). Developed by the Australian Council for Educational Research (ACER), the Undergraduate Medical and Health Science Admissions Test (UMAT) was first used in Newcastle in the early 1990s. Today, 123 Australian medical schools use UMAT as part of their selection process (ACER, 2015c).

A review of medical school websites shows that all Australian medical school now use a combination of prior academic performance (e.g. the Australian Tertiary Admission Rank (ATAR) score for undergraduate programs and prior degree Grade Point Average (GPA) for graduate programs), performance on admission tests (UMAT, Graduate Medical School Admissions Test (GAMSAT) and Medical College Admission Test (MCAT)), interview, or other psychometric and non-psychometric techniques such as case study scenarios. There is, however, little consistency between schools in the combination of, or the weight given to each component of the student selection process (ACER, 2015a). Despite many studies which have shown that prior academic performance is the best predictor of subsequent academic performance and that interviews and admission tests add little value to the selection process (for example Coates, 2008; Ferguson, James, & Madeley, 2002; Wilkinson et al., 2002; Wilkinson, Zhang, & Parker, 2011), the use of multiple techniques in student selection continue to be prevalent.

---

3Charles Darwin University, which does not have a medical school, also uses the UMAT for its undergraduate degrees in Clinical Sciences.
The introduction of four-year graduate entry medical programs was a transformative change in medical education in Australia. Although the Doherty report did not provide unanimous support for graduate-entry medical courses (Doherty, 1988), the universities of Flinders, Queensland and Sydney introduced these programs in 1996—some would say as a result of the AMC and its accreditation process (Henry et al., 1997). The universities adopted criteria for admission that were no longer exclusively academic, as well as curriculum reforms which incorporated PBL throughout all years of the course (Prideaux et al., 2000). Ten medical schools are part of the GAMSAT graduate medical schools consortium and are participants in Graduate Entry Medical School Admissions System (GEMSAS) (ACER, 2015b). Admission into the graduate programs require adequate performance in a preceding degree program, achieving a specified level in the GAMSAT or the MCAT (Aldous, Leeder, Price, Sefton, & Teubner, 1997) and personal attributes assessed by interviews.

Another innovative and radical change to medical education resulted from the review of the Australian Qualifications Framework in 2011 (Department of Education and Training, 2015b). Following the review, and the acknowledgement for a speedier process for medical qualifications, the University of Melbourne became the first university to offer a Doctor of Medicine (MD) as a Masters level four-year professional graduate medical degree (Melbourne Medical School, 2015). In the Melbourne model, it will take a student seven years to become a doctor as compared to five years in an undergraduate medical program. Entry into the MD is based on students’ GPAs in previous undergraduate studies, their results in the GAMSAT or MCAT and performance at multi-mini interview (Melbourne Medical School, 2012). Many medical schools have now followed suit, with variations to individual MD programs. Table 3 provides a list of medical programs in Australian medical schools.
Table 3: Details of medical programs

<table>
<thead>
<tr>
<th>No.</th>
<th>Institution</th>
<th>Medical program</th>
<th>Entry type</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Australian National University</td>
<td>Doctor of Medicine and Surgery (MChD)</td>
<td>Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td>2</td>
<td>Bond University</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate</td>
<td>4 years &amp; 8 months</td>
</tr>
<tr>
<td>3</td>
<td>Curtin University(^4)</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate</td>
<td>5 years</td>
</tr>
<tr>
<td>4</td>
<td>Deakin University</td>
<td>Bachelor of Medicine Bachelor of Surgery (BMBS)</td>
<td>Undergraduate</td>
<td>4 years</td>
</tr>
<tr>
<td>5</td>
<td>Flinders University of South Australia</td>
<td>Doctor of Medicine (MD)</td>
<td>Undergraduate/Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td>6</td>
<td>Griffith University</td>
<td>Doctor of Medicine (MD)</td>
<td>Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td>7</td>
<td>James Cook University</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate</td>
<td>6 years</td>
</tr>
<tr>
<td>8</td>
<td>Monash University</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate/Graduate</td>
<td>5 years/4 years</td>
</tr>
<tr>
<td>9</td>
<td>The University of Melbourne</td>
<td>Doctor of Medicine (MD)</td>
<td>Graduate</td>
<td>4 years</td>
</tr>
</tbody>
</table>

\(^4\) New medical school commencing in 2017.
<table>
<thead>
<tr>
<th>No.</th>
<th>Institution</th>
<th>Medical program</th>
<th>Entry type</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>The University of New South Wales</td>
<td>Bachelor of Medical Studies / Doctor of Medicine (BMed/MD)</td>
<td>Undergraduate</td>
<td>6 years</td>
</tr>
<tr>
<td>11</td>
<td>The University of Newcastle/</td>
<td>Bachelor of Medicine - Joint Medical Program (BMed – JMP)</td>
<td>Undergraduate</td>
<td>5 years</td>
</tr>
<tr>
<td></td>
<td>The University of New England</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>The University of Notre Dame Australia</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td></td>
<td>(Fremantle/Sydney)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>The University of Queensland</td>
<td>Doctor of Medicine (MD)</td>
<td>Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td>14</td>
<td>The University of Sydney</td>
<td>Doctor of Medicine (MD)</td>
<td>Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td>15</td>
<td>The University of Tasmania</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate</td>
<td>5 years</td>
</tr>
<tr>
<td>16</td>
<td>The University of Western Australia</td>
<td>Doctor of Medicine (MD)</td>
<td>Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td>17</td>
<td>The University of Western Sydney</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate</td>
<td>5 years</td>
</tr>
<tr>
<td>18</td>
<td>The University of Wollongong</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate/Graduate</td>
<td>4 years</td>
</tr>
<tr>
<td>19</td>
<td>University of Adelaide</td>
<td>Bachelor of Medicine Bachelor of Surgery (MBBS)</td>
<td>Undergraduate</td>
<td>6 years</td>
</tr>
</tbody>
</table>

Source: Various medical schools’ websites
Australia does not have a standard national qualifying examination for domestic medical graduates but there is one for international medical graduates conducted by the AMC (McGrath, Graham, Crotty, & Jolly, 2006). There is an increasing range of assessment methods used in Australian medical schools, including the use of competency and performance-based assessment methods supplemented by group assessment, formative feedback on student progress and the use of ‘non-graded pass’ involving a competitive examination with ranking of students (Commonwealth of Australia, 2008). There is a good deal of consensus that a common national assessment would be a good thing. McGrath et al. (2006) highlights some key motivations which include the need for explicit national standards, the potential homogenizing effect on curricula, the efficiency of administration and the interpretability of the results.

Internationally, the interest in implementing medical assessments is also gaining pace (Archer, 2009; Gorsira, 2009; Harden, 2009; Melnick, 2009; Van der Vleuten, 2009; Van der Vleuten et al., 2004). In 2012, the Australian Medical Assessment Collaboration (AMAC) was established to develop a national assessment for medical education that monitors the outcomes of later-year medical students in Australia (Wilkinson et al., 2012). Ten medical schools are now formally involved—in the collaboration of common assessment, benchmarking outcomes and increasing capacity development of quality assessments and assessment items—all with a particular emphasis on student learning outcomes to be achieved towards the end of the medical degree (pre-clinical). Other initiatives include the Australian Collaboration for Clinical Assessment in Medicine (ACCLAiM), a collaborative venture between medical schools in Australia and New Zealand that focuses on benchmarking graduate outcomes in the clinical domain (Australian Collaboration for Clinical Assessment in Medicine (ACCLAiM), 2015).

The Medical Schools Outcomes Database (MSOD) and Longitudinal Tracking Project claims to be the world’s first project for tracking medical students through medical school and into training (MDANZ, 2012). The aim of the project is to collect robust demographic, educational, career intention and practice data on medical students and doctors across all Australian and New Zealand medical schools—not only for its educational potential but also to contribute to national medical workforce planning. The project has been collecting data nationally (and in New Zealand) since 2006
and has records of over 30,000 participants and longitudinal data for over 9,000 graduates (MDANZ, 2012).

2.3.7 Staff

Medical schools tend to have a significant number of honorary staff or unpaid employees. The role of honorary staff varies between institutions and may include: contribution to its teaching and research activities, assisting in the selection of and the teaching and learning of future clinicians, participating in the strategic direction and development processes of the medical school, and participating in relevant committee meetings. Honorary staff include academic title holders in teaching hospitals and private practice, who are externally-funded medical and health professionals. They make significant and sustained contributions to a medical school’s teaching, research and/or service activities. Total numbers are unavailable but a review of websites indicates that a medical school can have between 500 and 3,000 honorary staff.

In 2011, the MDANZ estimated the cost of teaching a medical student was approximately $50,000 per student per year across a selection of medical schools but Oates, Goulston, Bingham, and Dent (2014) argue that this is not the true cost of teaching. They maintain that the actual cost should include the cost of face-to-face teaching by non-university or honorary staff, which include teaching by paid medical, allied health and nursing staff in lectures, evidence-based learning sessions, small group tutorials at the bedside, in clinics, laboratories, community settings and opportunistic teaching staff. Estimation of the true cost of teaching would be almost double (approximately $90,000 per student per year), if the value of the time committed by honorary staff was included (Oates et al., 2014).

2.3.8 Medical Research Institutes

Medical Research Institutes (MRI) are institutes that conduct research on a broad spectrum of human health issues, and can either be ‘independent’ charities—mission-based charities that operate independently from a university or hospital, university-based institutes, part of a hospital or health provider, or institutes arising from alliances between a hospital and
university. They are primarily co-located with major teaching hospitals and provide a unique interface between research and healthcare delivery. Through affiliations with universities, medical research institutes also provide a cohesive training environment, attracting medical graduates and training the next generation of researchers and scientists. Each MRI also has an affiliation with a university and trains higher degree research students.

As non-profit organizations, MRIs receive the majority of their funding through competitive grants for research projects—primarily through the Federal Government’s National Health and Medical Research Council (NHMRC). The remaining funding comes largely through state government infrastructure support, competitive grants from foundations and trusts, commercialisation collaborations and contracts, and community donations. Australia’s MRIs vary in size from 20 to over 1,000 staff and students, and together employ more than 10,000 staff and higher degree students (AAMRI, 2015).

2.3.9 Academic Health Science Centres

An Academic Health Science Centre (AHSC) is established when a leading university joins with a major tertiary health care provider in a tripartite mission of excellence in clinical service, research and education (Fisk et al., 2011). Introduced in the United States many decades ago, AHSCs are well-established in Canada, Holland, United Kingdom and Singapore (Ebert & Brown, 1983). In recent years, there has been substantial interest in the role AHSCs can play in promoting health and economic development in Australia. It is believed that AHSCs have the capability and the collective responsibility to transform medicine, improve health, and reduce health-care disparities locally and globally.

In mid-2014, the National Health and Medical Research Council (NHMRC) called for submissions from interested groups for recognition as an NHMRC Advanced Health Research and Translation Centres (AHRTC), synonymous to an AHSC. Four centres were recognised as being of top quality internationally and have been recognised as NHMRC Advanced Health Research and Translation Centres (National Health and Medical Research Council (NHMRC), 2015a). These are:
• Alfred Health and Monash Health and Partners Advanced Health Research and Translation Centre;

• Melbourne Health Care Partners Advanced Health Research and Translation Centre;

• South Australian Advanced Health Research and Translation Centre; and

• Sydney Health Partners Advanced Health Research and Translation Centre.

According to NHMRC (Lechler, Walley, Kelleher, & Schechter, 2015), these four centres reflected strengths across the six selection criteria to a top international level, particularly the research and health delivery sectors, and their ‘team’ approach was evident and demonstrable. The commitment and active involvement of Chief Executive Officers (CEOs) of health services was evident, as was a demonstrable record of collaboration and a sharing of resources for research and access to patients, registries and databases. Another three Centres were also recognised as having the potential to operate at top international levels in the near future.

2.3.10 Rural schools

As mentioned earlier, since 1994, the Federal government has provided funding for rural clinical training and support. Over the years, the funding has gone through several iterations and has been amalgamated with other rural programs. The Rural Undergraduate Support and Coordination (RUSC) and the Rural Clinical Schools (RCS) programs, both started in the 1990s, have now been combined and renamed the Rural Clinical Training and Support (RCTS) program. The RCTS is a component initiative of the Rural Health Multidisciplinary Training (RHMT) program which was established in 2009-10. The overall aims of the RHMT program are to support training of students in rural and remote areas, establishment of a university presence in rural communities, and to facilitate an increase in rural health and workforce research.

The RCTS program combines the short-term rural placements, rural student admission targets, rural curriculum development and Aboriginal and Torres Strait Islander
student support of the previous RUSC with the long-term rural placements, rural community focus and research activity of the RCS. Implemented in 2011, it now includes participation of 16 universities. Two Australian medicals schools do not participate—Bond medical school is ineligible as it does not offer Commonwealth Supported Places, and Griffith’s School of Medicine has opted not to participate due to the school’s focus on servicing outer-metropolitan regions in southern Queensland (Commonwealth of Australia, 2013c). As mentioned earlier, there are 17 rural clinical schools with multiple training locations, managed by 16 universities (Commonwealth of Australia, 2013a). These rural schools have jurisdiction over a number of rural regions as listed in Table 4.
<table>
<thead>
<tr>
<th>Rural Schools</th>
<th>Rural regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deakin University Rural Clinical School</td>
<td>Warrnambool, Ballarat, Camperdown, Ararat, Colac, Horsham, Hamilton, Stawell and Daylesford.</td>
</tr>
<tr>
<td>Flinders University Rural Clinical School</td>
<td>The Riverland region of South Australia (Renmark), Mount Gambier and the Hills Mallee Fleurieu regions, Warrnambool.</td>
</tr>
<tr>
<td>James Cook University Rural Clinical School</td>
<td>Mackay, Cairns, Atherton, Mount Isa, Thursday Island and surrounding regions.</td>
</tr>
<tr>
<td>Monash University School of Rural Health</td>
<td>Traralgon, Moe, Sale, Bairnsdale, Mildura, Bendigo and surrounding regions.</td>
</tr>
<tr>
<td>The Australian National University Rural Clinical School</td>
<td>Cooma, Goulburn, Bega, Young, Batemans Bay and surrounding regions.</td>
</tr>
<tr>
<td>The Northern Territory Rural Clinical School (through Flinders University)</td>
<td>Alice Springs, Katherine, Gove and surrounding regions.</td>
</tr>
<tr>
<td>The Rural Clinical School of Western Australia</td>
<td>Kalgoorlie, Esperance, Geraldton, Port Hedland, Broome, Albany, Karratha, Derby, Bunbury, Narrogin, Kununurra and surrounding regions.</td>
</tr>
<tr>
<td>The University of Adelaide Spencer Gulf Rural Health School</td>
<td>Whyalla, Port Augusta, Port Pirie, Port Lincoln, Minlaton, Kadina, Clare and surrounding regions.</td>
</tr>
<tr>
<td>The University of Melbourne Rural Clinical School</td>
<td>Shepparton, Wangaratta, Echuca, Ballarat and surrounding regions.</td>
</tr>
<tr>
<td>The University of New South Wales Rural Clinical School</td>
<td>Coffs Harbour, Port Macquarie, Kempsey, Wagga Wagga, Albury, Griffith, Leeton and surrounding regions.</td>
</tr>
<tr>
<td>The University of Queensland Rural Clinical School</td>
<td>Rockhampton, Toowoomba, Hervey Bay, Bundaberg and surrounding regions.</td>
</tr>
<tr>
<td>Rural Schools</td>
<td>Rural regions</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>The University of Sydney School of Rural Health</td>
<td>Dubbo, Orange.</td>
</tr>
<tr>
<td>University of Newcastle Department of Rural Health</td>
<td>Tamworth, Armidale, Moree, Taree and surrounding regions.</td>
</tr>
<tr>
<td>University of Notre Dame Australia (Sydney Campus)</td>
<td>Wagga Wagga, Ballarat and Lithgow</td>
</tr>
<tr>
<td>University of Tasmania Rural Clinical School</td>
<td>Burnie and the North West region.</td>
</tr>
<tr>
<td>University of Western Sydney</td>
<td>Lismore and Bathurst</td>
</tr>
<tr>
<td>University of Wollongong Rural Clinical School</td>
<td>Nowra, Milton/Ulladulla, Lismore, Grafton, Murwillumbah, Broken Hill, Bowral, Mudgee, Murrumbidgee.</td>
</tr>
</tbody>
</table>

Source: Commonwealth of Australia (2013a)

Considerable progress has been made in the past decade to address some of the barriers impeding improved rural health outcomes. However, it has become clear that a number of specific needs are still very poorly served in rural areas, including Indigenous health as a whole, oral health, and mental health, so much so that they suppress rural health outcomes as a whole and endanger efforts to meet national targets that have been set (Humphreys & Gregory, 2012).

### 2.3.11 Medical education and training

There are three main phases in medical education and training—basic medical education, prevocational training, vocational training and continuing professional development. Different organizations and agencies have responsibility for the different phases. The first phase is the responsibility of the medical schools. The Deans of these schools form the council of the Medical Deans Australia and New Zealand (MDANZ), which represents professional entry-level medical education, training and research in Australia and New Zealand.
The second phase (prevocational training) consists of a compulsory intern year for new graduates and several subsequent years of informal training as junior doctors. Prevocational training is the responsibility of the Postgraduate Medical Councils (PMCs) in each state and territory, under the approval and authority of the Medical Board of Australia. The Board is also responsible for granting general registration to Australian and New Zealand medical graduates who have completed an intern year. Although structural models vary widely between states and territories, the eight PMCs have responsibility for developing the education and training requirements in prevocational clinical training of medical schools’ graduates working in public hospitals. Despite the fragmented administration across eight jurisdictions and the lack of any legislative authority, the Confederation of Postgraduate Medical Councils (CPMEC), the peak body representing all the councils, developed the Australian Curriculum Framework for Junior Doctors in 2010 (Geffen, 2014). The framework outlines the knowledge, skills and behaviours required of junior doctors, particularly in the domains of clinical management, professionalism and communication (CPMEC, 2008).

The number of internships and funding for clinical placements is broadly controlled by the Department of Health or Human Services in each state and territory, and reflects the service needs of the intern training institutions and the number of graduates in each state who are Australian citizens or who have permanent resident status. Each state varies as to whether application for internship is made to the Health Department, a Postgraduate Medical Council or individual hospitals. The audit of internship applications in 2014, identified 3,676 applicants for internships in 2015, of which 3,004 are domestic medical graduates, 480 are international full fee paying medical graduates of Australian universities and 192 other applicants (AMSA, 2015). As at June 2014, there were approximately 3,210 state and territory intern positions available for 2015 (AMSA, 2015).

The medical colleges, providers of specialist medical training, are responsible for the third phase (vocational training and continuing professional development). There are currently 24 medical colleges, such as the Royal Australian College of General Practitioner and the Royal Australasian College of Surgeons. The Colleges are responsible for 24 vocational training programs that expand into 64 sub-specialty programs (Australian Medical Council, 2012b, 2012c). Vocational training varies
between programs and colleges—from funding to admissions criteria to curricula, format and assessments.

The AMC assesses courses, including those offered by specialist medical colleges, and accredits medical schools but until recently it does not have oversight of prevocational training. Commissioned by the Medical Board of Australia, the AMC has developed a national framework for the intern year, which includes development of global outcome statements, national standards for intern training and draft guidelines for rotations (Australian Medical Council & Medical Board of Australia, 2013). In 2014, the AMC began to oversee the national framework, including periodic review of the intern training accreditation bodies.

2.3.12 Regulation in Australian medical education

As can be seen from the review above, medical education and training comprises a complex, multistage process in which many organizations, including the Australian and state and territory governments, universities, specialist colleges, and other health agencies play important roles and provide various levels of input. Although the combined efforts of organizations have produced a medical education and training system that is highly regarded, the relationships within the systems have developed, in some cases, in an implicit and fragmented way and the entire system is devoid of coordinated governance (Dowton, Stokes, Rawstron, Pogson, & Brown, 2005). In an effort to reduce bureaucracy, the government, in 2014, closed three agencies, Health Workforce Australia, General Practice Education and Training Ltd (GPET), and Australian National Preventative Health Agency (ANPHA), transferring their functions to the Department of Health (The Honorary Peter Dutton Member of Parliament (Minister for Health and Sport), 2014). This further highlights the transient and dynamic nature of regulation in Australian medical education.

Australia’s Federal Department of Education, as discussed in the previous section, has the primary responsibility for policy relating to, and the funding of the university education of medical students. In 2008, this funding comprised approximately $100,000 per student for a six-year course (Commonwealth of Australia, 2008). In conjunction with the Department of Health, the Department of Education also determines the number of
university places available each year in medicine. In part, its commitment to medical
education involves the provision of clinical training component funding to universities.
The universities in turn contract with teaching hospitals for the use of facilities for training
purposes (Australian Institute of Health and Welfare, 2007). The Federal Department of
Health also provides support and funding through health and hospital infrastructure and
regional and rural health (Commonwealth of Australia, 2012). For instance, the regional
and rural health program supports facilities to provide training for medical students and
registrars in rural and remote communities.

On the other hand, state and territory governments and departments of health
manage and jointly fund with the Australian Federal government the public hospitals,
which provide the bulk of pre-vocational and vocational training for medical students.
The state and territory governments’ contributions to medical education deliver
important components of hospital infrastructure and on-the-job staff trainers in hospital
environments, as part of the Australian Healthcare Agreements. The state and territory
governments and departments also develop policy framework for operating healthcare
systems, including education and training components. This split responsibility—federal
funding for undergraduate/graduate medical education and state funding for clinical
training in hospitals—leads to some tension and confusion. For instance, changes in the
delivery of healthcare (state responsibility) has led to unanticipated consequences for
clinical training (Dowton et al., 2005) with little coordination and collaboration with
their federal counterparts. The ‘acrimonious negotiations’ over the Australian Healthcare
Agreements in 2003 is another example of the ongoing tensions and generally uncooperative
relationships between the federal government and the states (Humphreys & Gregory,

Health sector organizations and agencies play key roles in the education and
training of medical practitioners, and have a direct and indirect impact on the strategic
management of medical schools include Postgraduate Medical Councils, Medical
Board of Australia, Medical Training Review Panel, National Rural Health Alliance,
Australian Health Practitioner Regulation Agency, as well as local health systems and
public and private hospitals. The Australian Medical Council (AMC) is responsible for
the accreditation process for all phases of medical education, and sets the requirements,
standards and learning outcomes of medical graduates. There are many types of stakeholders and given the nature of the environment, the interests of some may be in conflict with those of others, and may depend on where one is located within the medical school’s environment. Many have argued that there is a lack of coherent coordination in all aspects of medical education and training and that these tensions need to be resolved (Dowton et al., 2005; McGrath et al., 2006). Figure 6 shows the interactions between different stakeholders in the Australian medical education regulatory architecture. Depending on where one is located within the medical school environment, the interactions between the stakeholders and medical schools will have an impact on the strategic management of the school.

In summary, medical education in Australia would appear to be one of the most diverse and dynamic medical environments in the world (Brooks et al., 2001). The number of medical schools has more than doubled in the last fifty years. There have been significant changes to admission criteria, programs, curricula, and assessments. However, the lack of cohesion, across health and education systems and across national and state jurisdictions (McGrath et al., 2006) remains, and to some extent has been exacerbated with the introduction, and demise, of agencies, organizations, and systems. While in absolute terms, government funding has increased, there is less money on a per student basis. Yet, the student mix has diversified, as has the student learning. As a result, the medical workforce continues to change, especially with the growing number of international medical graduates.
Figure 6: Australian medical education regulatory architecture

- Department of Education
- Department of Health and Ageing
- State and Territory Department of Health
- Medical Schools
- University
- Australian Medical Council
- Intern training (PGY1)
- Registration
- Residency (PGY2)
- Specialist Colleges
- Medical Training Review Panel
- Hospitals and local health systems
- Postgraduate Medical Education Council
- National Rural Health Alliance
- Medical Research Institutes
- Other organisations and agencies including transient ones such as HWA
2.4 Summary

This chapter has mapped the context for the study by firstly providing an overview of Australian higher education. The subsequent section provided a review of medical education in Australia by discussing historical and present trends which have led to the expansion and diversification of medical education, and consequently, medical schools. The chapter concluded by presenting the medical education regulatory architecture relevant to Australia. The next chapter provides a review of the literature on conceptualisations of strategy in business and a review of strategy in higher and medical education generally.
Chapter 3

Defining Strategy

3.1 Introduction

The previous chapter has mapped the context for Australian higher and medical education. It also provided the medical education regulatory architecture relevant to Australia. This chapter presents a review of strategy in higher education. It begins with a discussion of different conceptualisations of strategy. Next, it reviews broadly strategy within higher education. The final section in this chapter reviews the limited research on strategy in medical education.

3.2 Strategy defined

Strategy has had a long history, which can be traced back to Sun Tzu’s The Art of War, written in 400 B.C. Although greatly interesting in its own right, this dissertation will not be tracing the development of strategy from its medieval roots in warfare. Instead, it will introduce strategy from its origins in business by firstly reviewing the different conceptualisations of strategy. This section will provide an overview of definitions, categorisations and schools of thought on strategy in the business literature. In doing so, it puts forward a frame and rationale for the concept of strategy in the current study.

In simple terms, a strategy is the intent to move an organization from where it is now to where it wants to be. Different definitions of strategy have been put forward over the years and a number of key definitions are listed here:

- Chandler (1962) defines strategy as the “determination of the basic long-term goals and objectives of an enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals” (p. 13).

- Hofer and Schendel (1978) view strategy as the “match an organization makes between its internal resources and skills and the opportunities and risks created by its external
environment that enables it to achieve its goals and objectives” (p. 12).

- Andrews (1980) defines strategy as the “pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organization it is or intends to be, and the nature of the economic and non-economic contribution it intends to make to its shareholders, employees, customers, and communities” (p. 18–19).

- Mintzberg (1987) considers strategy as a “plan” – a directed course of action to achieve an intended set of goals, a “pattern” – a consistent pattern of past behaviour, a “position” – reflects decisions to offer particular products or services in particular markets, a “ploy” – a specific manoeuvre intended to outwit a competitor, and a “perspective” – vision and direction (p. 11–24).

- Porter (1996) views strategy as “being different. It means deliberately choosing a different set of activities to deliver a unique mix of value” (p. 64).

As can be seen from above, there is not one simple definition of strategy. Most scholars and practitioners agree there is no consensus on definitions (Bourgeois, 1980; Gluck, Kaufman, & Walleck, 1982; Glueck, 1980; Hatten, 1979; Hofer & Schendel, 1978; Lenz, 1980; Rumelt, 1979; Spender, 1979) but a few have attempted to establish some kind of categorisation based on the nature of strategy. For instance, strategies have been grouped by type: entrepreneurial, adaptive and planning (Mintzberg, 1973); by models: linear, adaptive and interpretive (Chaffee, 1985); and by scope: cost leadership, differentiation and focus (Porter, 1985). Consequently, there is some general agreement about the nature of strategy, which Chaffee (1985, p. 89–90) summarises as follows:

- Strategy concerns both organization and environment;
- The substance of strategy is complex;
- Strategy affects overall welfare of the organization;
• Strategy involves issues of both content and process;

• Strategies are not purely deliberate;

• Strategies exist on different levels; and

• Strategy involves various thought processes.

Although there is a somewhat common understanding of the nature of strategy, there is multitude of categorization of strategy depending on the different schools of strategic management. Mintzberg, Ahlstrand and Lampel (1998) provide a detailed analysis and proposed the following ten schools of thought: design, planning, positioning, entrepreneurial, cognitive, learning, power, cultural, environmental and configuration. An overview of each follows, which is predominantly based on Mintzberg et al.’s work in 1998.

The design school sees strategy formation as a process of conception, matching the internal situation of the enterprise to the state of play in its environment. After SWOT (Strength-Weaknesses-Opportunities-Threats) analysis, strategy provides the best fit between internal capabilities and external possibilities. The origins of the design school can be traced back to Selznick (1957), Chandler (1962) and Andrews (in Learned, Christensen, Andrews, & Guth, 1965) in the publication of Business Policy: Text and Cases.

Seven basic premises underlie the design school and are summarised here: (1) strategy formation should be a deliberate process of conscious thought; (2) responsibility for that control and consciousness must rest with the executive officer—that person is the strategist; (3) the model of strategy formation must be kept simple and informal; (4) strategies should be one of a kind: the best one results from a process of individualized design; (5) the design process is complete when strategies appear fully formatted as perspective; (6) these strategies should be explicit, so they have to be kept simple; and (7) finally, only after these unique, full-blown, explicit, and simple strategies are fully formulated can they be implemented (Andrews, 1987 cited in Mintzberg et al., 1998).
Mintzberg et al (1998) further contends that the design school is restricted in its application and often overly simplified, in particular it may deny certain important aspects of strategy formulation such as its focus on conception rather than learning, incremental development and emergent strategy, the influence of existing structure on strategy and the full participation of other actors. Regardless, the design school has provided a central notion that strategy represents a fundamental fit between external opportunity and internal capability.

The *planning* school sees strategy formulation as a formal process, following a rigorous set of steps from analysis of the current situation to devising scenarios and selecting a strategy, then programming its implementation. The focus is on detailed strategic programming, with minimal scope to adapt the initial strategy. Originated from Ansoff (1965), strategic planning became hugely popular in the 1970s as scholars and practitioners developed different models and commended on its virtues.

In essence, the planning school (which mirrors the basic premise of the design school) have the following as its basis: (1) strategy formulation as a result of controlled, conscious process of formal planning, decomposed into distinct steps, each delineated by checklists and supported by techniques; (2) while the chief executive officer has overall responsibility for strategy formulation, the responsibility for execution rests with staff planners; and (3) strategies appear from this process full blown, to be made explicit so that they can then be implemented through detailed attention to objectives, budgets, programs, and operating plans of various kinds (Mintzberg et al., 1998, p. 58).

While still present today, popularity for the planning school has somewhat waned. Many, including Ansoff (1977), have written about the pits of strategic planning (see other examples of Mintzberg, 1994; Wilson, 1994). The models of strategic planning developed in the 1960s and 1970s were criticised for not taking into account environmental pressures, for not distinguishing between strategic planning and strategic thinking, for being too reliant on quantitative analysis and undermining one’s experience, intuition, and creativity, and being top-down and often did not take into account the challenges at the coal face. Additionally, strategic planning failed because it was based on some fundamental flaws: (1) the fallacy of prediction, that strategies do not appear on “schedule,
immaculately conceived”; (2) the fallacy of detachment, in that it disconnects acting from thinking and implementing from formulating; and (3) the fallacy of formalization, that formal systems could process, consolidate, aggregate and move information but could never internalise, comprehend and synthesise it (Mintzberg et al., 1998, p. 72–81).

The *positioning* school sees strategy formation as a process of market analysis, focusing on detailed analysis of the industry context and the enterprise’s competitive position. Although not the first to focus on strategy content, Porter (1980) was able to build on previous insights which became to be known as the positioning school. The core concepts of this school are not about planning or special individual roles (the CEO in the design school, planners in the planning school) but on managers’ ability to think and understand the industry they are in.

Mintzberg et al (1998) summarise the position school as follows: (1) strategies are generic, specifically common, identifiable positions in the marketplace; (2) that marketplace (the context) is economic and competitive; (3) the strategy formation process is therefore one of selection of these generic positions based on analytical calculation; (4) analysis play a major role in this process, feeding the results of their calculations to managers who officially control choices; and (5) market structure drives deliberate positional strategies that drive organizational structure (p. 85).

While the positioning school did not depart radically from the planning or the design school, contrary to these schools of thought, it argues the use of key strategies as positions which can be defended against existing and future competitors (Porter, 1996). This is different from decisions based on operational effectiveness that are aimed simply at doing existing activities better. Another contribution is Porter’s model of competitive analysis (Porter, 1980, 2008b), which identified five forces in an organization’s environment that influence competition: (1) threat of new entrants; (2) bargaining power of firm’s suppliers; (3) bargaining power of firm’s customers; (4) threat of substitute products; and (5) intensity of rivalry among competing firms.

The positioning school has made a major contribution to strategic management, although there were concerns about its narrow focus, context, strategies and its emphasis
on analysis and calculation (Mintzberg et al., 1998). It has provided a powerful set of concepts in which scholars and practitioners can build on and find ways to integrate it with the views of other schools of strategic management for optimization.

The entrepreneurial school sees strategy formation as a visionary process, taking place within the mind of the charismatic leader, who assembles the capabilities needed to realize the vision. Unlike the positioning school, there is not one scholar or practitioner whom can be singled out as the ‘father’ of the entrepreneurial school of thought. Although it grew out of the neo classical economic theory, the business literature (see example of Cole, 1959) on entrepreneurial school has been quite incongruent (Mintzberg et al., 1998).

The entrepreneurial school highlights the proactive nature and role of personalised leadership and strategic vision. The basic assumptions of the school can be summarised as follows: (1) strategy exists in the mind of the leader as a perspective; (2) the process of strategy formulation is semi-conscious, rooted in the experience and intuition of the leader; (3) the leader promotes the vision single-handedly; (4) the strategic vision is malleable so strategy tends to be deliberate and emergent; (5) the organization is also malleable, a simple structure responsive to the leader’s directives; and (6) strategy tends to take the form of niche (Mintzberg et al., 1998, p. 143).

The main criticism for this school of thought lies in the fact that strategy formulation rests in the mind of a single individual. There are some merits in this, particularly in the early years of an organization when a sense of direction and integration is valued, when an organization in distress calls for visionary leaders who can turn things around, and in small ‘owner-managed’ organizations with a clearly defined industry or geographic niche (Mintzberg et al., 1998). However, strategy is conceived and implemented only in combinations of people in “organized” or deployed in compatible task assignments (Andrews, 1987, p. 123); and the organization runs solely by an individual is at odds with most team-based and matrix management found today.

The cognitive school draws on the science of brain functioning, and sees strategy formation as a mental process, of profiling and reframing multiple perspectives and multiple realities, without ever gaining a complete picture. Rooted in psychology, there
are many prominent scholars who have contributed to this school of thought (see examples of Bolman & Deal, 2013; Dörner, 1997; Krakauer, 1998; March & Simon, 1958; Morgan, Gregory, & Roach, 1997; Morgan, 1993; Simon, 1947; Weick, 1995). Essentially, the cognitive school sees (1) strategy formulation as a cognitive process that takes place in the mind of the strategist; (2) strategies emerge as perspectives that shape how people deal with inputs from the environment; (3) that the world can be modelled, framed and constructed based on the inputs; and (4) strategies, as concepts, are difficult to attain, considerably less than optimal when actually attained, and subsequently difficult to change when no longer viable (Mintzberg et al., 1998, p. 170–172).

It has been argued that a strategy management model that focuses on cognition makes people passive thinkers and encourages people to reject new information that does not fit what they already believe in. Additionally, the cognitive school has not sufficiently addressed how concepts develop in the mind of a strategist (Mintzberg et al., 1998). Regardless, it has made significant theoretical contributions in explaining the differences in strategies pursued as a consequence of the varying cognitive styles of strategists.

The learning school sees strategy formation as an emergent process, recognising that one cannot plan everything. ‘Strategic’ in this context means paying attention to what works or does not work over time, adapting to new conditions and possibilities, and building new learning into the planning. First initiated by Lindblom (1959, 1968) but later mainstreamed by Prahalad and Hamel (1990), Quinn (1980), and Weick (1969), the basic assumptions of the learning school can be summarised as follows: (1) strategy making takes the form of a process of learning over time due to the complex and unpredictable nature of the organization’s environment; (2) there are more potential strategists in most organizations because it is the collective system that learns; (3) learning proceeds in an emergent fashion, through behaviour that stimulates thinking retrospectively, so that sense can be made of action; (4) the role of leaders is to manage the process of strategic learning, whereby novel strategies can emerge; and (5) strategies appear as patterns out of the past to guide overall future behaviour (Mintzberg et al., 1998, p. 208–209).
The main critique of the learning school is that it can lead to disintegration of strategy. There is a danger that organizations may suffer from a lack of clearly articulated strategies, which leads to “forays and experiments” and consequently become purposeless (Andrews, 1987, p. 128). As well, the organization may suffer “strategic drift” (Johnson, 1987, p. 244–247) as an overemphasis on learning can then undermine a pre-existing coherent and perfectly viable strategy, and be lured into an undesirable position as a result of strategies that were not intended. Despite these misgivings, the learning school has made a major contribution to strategy formulation especially in organizations that are faced with dynamic, complex and unpredictable environments.

The power school sees strategy formation as a process of negotiation between power holders within the enterprise, or between the enterprise and key external stakeholders. When stakeholders change or alter their positions, so too does the strategy. At any point, the strategy is a set of trade-offs between different agendas and interests. Many scholars (see early examples of Macmillan, 1978; Murray, 1978; Pettigrew, 1977; Quinn, 1978) have contributed to the school of thought, stimulated by the decision process model postulated by Cyert and March (1963), primarily in the context of Ansoff’s operating decisions (1965).

In essence, the power school is built on the following premises: (1) strategy formation is shaped by power and politics; (2) strategies tend to be emergent, and take the form of positions and ploys rather than perspectives; (3) micro power (Allison, 1971) sees strategy making as the interplay through persuasion, bargaining and direct confrontation of individuals and groups within the organizations; and (4) macro power (Astley, 1984; Pfeffer & Salancik, 1978) sees the organization as promoting its own welfare by controlling and cooperating with other organizations, through the use of strategic manoeuvring as well as collective strategies in various kinds of networks and alliances (Mintzberg et al., 1998, p. 260).

The power school emphasizes the importance of politics in promoting strategic change but this may have been overstated in lieu of other integrating forces such as leadership and culture as well as the notion of strategy. Additionally, politics can be a source of waste and distortion in organizations. However, to describe strategy formation
as a process devoid of power and politics makes little sense, particularly in periods of major change in large and mature organizations, in complex and highly decentralized organizations, as well as during periods of blockage and flux.

The cultural school sees strategy formation as a collective process involving various groups and departments within the enterprise, so that strategy reflects the shared assumptions, values and beliefs of a corporate culture. This may create strategic risk if historical assumptions about how the enterprise works block the needed change. Culture, a central tenet in every field of study, emerged in business literature in the 1980s as a result of the success of Japanese organizations, although there is no single source of literature which could be pinpointed as providing a basis for the cultural school.

The following summarises the main principles of the cultural school: (1) strategy formation is a process of social interaction, based on the beliefs and understandings shared by members of the organization; (2) an individual acquires these beliefs through a process of acculturation or socialization; (3) the members of the organization can only partially describe the beliefs that underpin their culture; (4) strategy is best described as deliberate as it takes the form of perspective more than positions, rooted in collective intentions and reflected in patterns by which resources and capabilities are used for competitive advantage; and (5) culture does not encourage strategic change, at best it promotes shifts in position within the organization’s overall strategic perspective (Mintzberg et al., 1998, p. 267–268).

The main criticism of the cultural school is that it is overly vague. Additionally, the cultural school discourages necessary change, which in turn may lead to stagnation. It also equates strategic advantage with organizational uniqueness, is hard to translate effectively into strategic management, and creates an imbalanced focus on internal resources rather than external competition. Nevertheless, it has applicability in certain types of organizations: those with rich cultures, large, established organizations whose stagnant cultures reinforce their long-standing strategies, and those in certain phases of their business cycle—including reinforcement, reframing, and cultural revolution.

The environmental school sees strategy formation as a reactive process, with
many actors responding to shifts in external conditions or constraints (such as declining resources) and either adapting or dying as a result. It grew out of the contingency theory (Miller, Droge, & Toulouse, 1988; Pugh, Hickson, Hinings, & Turner, 1968; Pugh, Hickson, & Hinings, 1968; Pugh et al., 1963), expressed most keenly within population ecology (Hannan & Freeman, 1989; Hannan & Freeman, 1977) and further extrapolated by institutional theory (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). The environment school has its premises on: (1) the environment, as a set of general forces, is the central actor in strategy-making process; (2) the organization must respond to these forces, or else be “selected out”; (3) leadership becomes a passive element for purposes of reading and adapting to the environment; and (4) organizations end up clustering together in distinct ecological-type niches (Mintzberg et al., 1998, p. 288).

Although this school gives the environment a central role in strategy formation, it has been criticised as being ambiguous and abstract. Additionally, it does not seem prudent to manage strategy at such aggregated levels—strategies need to be nuanced in time, application and context. Furthermore, organizations operating within the environment school are seen as having no (Hannan & Freeman, 1989; Hannan & Freeman, 1977) or little (DiMaggio & Powell, 1983) strategic choice. This, in itself, does not explain how two organizations can operate successfully with different strategies albeit in a similar environment.

The configuration school sees strategy formation as a process of transforming the enterprise from one type of decision-making structure into another, whether incrementally or radically. Here the key concern is how to balance the enterprise’s need for stability with its need for flexibility and innovation in its responses to new environment. The origins of the school can be traced back to Chandler (1962) and were later made popular by Khandwalla (1977).

The configuration school is built on two main concepts, configuration—looks at the organization and its surroundings; and transformation—describes the strategy-making process. The basic premises of the configuration school are: (1) organizations can be described in terms of stable configuration—for a period of time, and have a structure matched to a context which helps it form a set of strategies; (2) periods of stability are
interrupted by processes of transformation; (3) successive states of configuration and transformation can become patterned sequences; (4) the key to strategic management is to sustain stability or at least adaptable strategic change most of the time, but periodically to recognize the need for transformation; (5) the process of strategy making can be of conceptual designing or formal planning, each must be found in its own time and context; and (6) resulting strategies take the form of plans and patterns, position or perspectives, or else ploys (Mintzberg et al., 1998, p. 305–306).

The biggest critique of the configuration school came from Donaldson (1996) who argued that few real organizations are simple structures or machine bureaucracies, and consequently the configuration school is a flawed approach to theorizing—in that it gives too general a picture, tries to include everything yet fails to discuss anything thoroughly. Additionally, Donaldson (1996) argued that it is empirically and conceptually erroneous that firms are either static or changing rapidly. Instead, most organizations are changing incrementally, a little bit at a time.

Each school of thought takes a varied approach to strategy formulation. Simultaneously, they describe different parts of the same process (Mintzberg & Lampel, 1999). One distinction that should be made between the ten schools is between prescriptive and descriptive approach. The design, planning and positioning schools fall under the prescriptive approach, in which the environment is seen as relatively constant. However, empirical research has shown that in turbulent environments, a prescriptive approach is often insufficient, makes systematic strategic planning and decision-making more difficult (Grant, 2003), and leads to rigidity (Fredrickson & Iaquinto, 1989; Fredrickson, 1983, 1984). Thus the other seven schools of thought pursuing a descriptive strategy, are gaining influence in strategy research since they are better suited for environments which are highly volatile (Wielemaker, Elfring, & Volberda, 2001).

The notion of environment is apparent in all dimensions of strategy formulation, some less explicit than others. While the cultural and entrepreneurial schools, for instance, focus more broadly in the internal organization (collective process in cultural and individual in entrepreneurial), the environment, in both cases, becomes the landscape on which the organization manoeuvres. Within the other schools of thought, the role
of the environment is more overt. The positioning school, for instance, sees it as a set of economic forces representing industry, competition and market. Similarly, the emphasis on bias and distortion in the cognitive school reflects the influence of the environment. Likewise, the learning school has emphasised the complexity of the environment—to experience, experiment, enact and learn from. Undeniably, the environmental school sees environment as key to strategy formation (or lack of)—in fact considers the environment as the actor.

Furthermore, taking the perspectives of the ten schools of thought, strategy formulation can be conceptualized along two dimensions of deliberate and emergent (Mintzberg & Waters, 1985). On the one hand, a deliberate strategy perspective contends that one should conduct rational analysis (some more than others), decide on the competitive position one wishes to occupy, develop and implement the strategy to get there. This is evident within the design, planning, positioning, and cultural schools of thought. A perfectly deliberate strategy must satisfy three conditions: (1) precise and articulated intentions must exist in a concrete level of detail; (2) seeing organizations as collective action, intention must be common knowledge to virtually all the actors in the organization; and (3) these collective intentions must have been realized exactly as intended (also meaning that no external forces could have interfered with them) (Mintzberg & Waters, 1985).

However, a strategic emergent perspective believes that strategy emerges over time as intentions collide with and accommodate the environmental forces—strategy comes from the way a series of unanticipated and unplanned events converge over time into a recognizable pattern. This is more frequent within the entrepreneurial, cognitive, learning, and environmental schools of thought. A perfectly emergent strategy develops when an organization takes a series of actions, in the absence of intention about it, that with time turn into a consistent pattern of behaviour (Mintzberg & Waters, 1985).

Mintzberg & Waters (1985) further contended that these two purely deliberate and emergent strategies form the poles of a continuum along which one would expect real-world strategies to fall. Most organizations make use of both deliberate and emergent strategies, or a combination of states of either, as in the case of power and configuration
schools. They introduced a variety of types of strategies that fall along this deliberate-emergent continuum:

1. **Planned strategy**, which are strategies that originate in formal plans. Precise intentions exist, formulated and articulated by central leadership, backed up by formal controls to ensure surprise-free implementation in benign, controllable or predictable environment;

2. **Entrepreneurial strategy**, which is imposed by one individual’s vision who is in personal control of an organization;

3. **Ideological strategy**, when members of an organization share a vision and identify so strongly with it that they pursue it as an ideology;

4. **Umbrella strategy**, where the leader provides general guidelines for behaviour, consequently defining the boundaries, and then let other actors manoeuvre within them;

5. **Process strategy**, where leadership exercise influence indirectly and other actors have considerable discretion to determine outcomes, because of an environment that is complex and perhaps also unpredictable and uncontrollable;

6. **Unconnected strategy**, when sub-units or organizations, because it is only loosely coupled to the rest, have considerable discretion and able to realize its own pattern in its stream of actions;

7. **Consensus strategy**, when many different actors naturally converge on the same theme, or pattern, so that it becomes pervasive in the organization, without the need for any central direction or control; and

8. **Imposed strategy**, when the environment dictates patterns in actions either through direct imposition or through implicitly pre-empting or bounding organizational choice. Strategies are mostly emergent, although may be internalized by organization and made deliberate.
Table 5 summarises the ten schools of thought. It provides an overview of the form of strategy formulation, the strategy formulation process and its perspective on the environment. The understanding of the various schools provides the groundwork for the conceptual framework. Some aspects of the particular schools contribute to understanding of the perspective and goal of this study. Because it is more prescriptive, the design, planning, and positioning perspectives can be applied to this study. In this study, a positioning perspective will be used. This study relates Porter’s conception of strategic positioning (Porter, 1996) and model of competitive analysis (Porter, 1979, 1980, 2008b) to investigate the competitive forces that shape Australian medical education, and consequently, their impact on strategy formulation in medical schools.

Table 5: Ten schools of thought

<table>
<thead>
<tr>
<th>School of thought</th>
<th>Strategy formulation</th>
<th>Strategy formulation process</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Conception</td>
<td>Deliberate</td>
<td>Acquiescent</td>
</tr>
<tr>
<td>Planning</td>
<td>Formal</td>
<td>Deliberate</td>
<td>Acquiescent</td>
</tr>
<tr>
<td>Positioning</td>
<td>Analytical</td>
<td>Deliberate</td>
<td>Analysed</td>
</tr>
<tr>
<td>Entrepreneurial</td>
<td>Visionary</td>
<td>Emergent</td>
<td>Niche</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Mental</td>
<td>Emergent</td>
<td>Overwhelming/Constrained</td>
</tr>
<tr>
<td>Learning</td>
<td>Emergent</td>
<td>Emergent</td>
<td>Subordinate</td>
</tr>
<tr>
<td>Power</td>
<td>Negotiation</td>
<td>Can be emergent and deliberate</td>
<td>Subordinate</td>
</tr>
<tr>
<td>Cultural</td>
<td>Collective</td>
<td>Deliberate</td>
<td>Subordinate</td>
</tr>
<tr>
<td>Environmental</td>
<td>Reactive</td>
<td>Emergent</td>
<td>Dominant</td>
</tr>
<tr>
<td>Configuration</td>
<td>Transformation</td>
<td>Can be emergent and deliberate</td>
<td>Contextual</td>
</tr>
</tbody>
</table>

There are a number of reasons why Porter’s notion of strategy has been selected for this study. Firstly, Porter’s conception of strategy is the most popular (Lee & Miller, 1996) and consequently, he is the most referenced management scholar in the field of strategy (Davenport, Prusak, & Wilson, 2003). Secondly, Porter’s model of competitive
analysis is arguably the best known and most widely applied analysis framework in strategic management (Narayanan & Fahey, 2005). As such, Porter’s work has had immense influence on and outside the strategy field. These two points, popularity and extensive application, mean that Porter’s notion of strategy already garners respect and trust that is crucial for future implementation. Finally, because medical schools operate in a regulated environment, it would seem that Porter’s deliberate strategy is more suited to its context. Porter’s conception of strategic positioning (Porter, 1996) and model of competitive analysis (Porter, 1979, 1980, 2008b) will be discussed in the next chapter in detail and applied to the medical education industry.

3.3 Strategy in higher education

As articulated in the last section, strategy is a broad concept that can be viewed from a multitude of perspectives. This section reviews strategy specifically within the context of higher education. It provides a review of the use of strategy in higher education from its first conception some fifty years ago to the more contemporary use in the 21st century.

The emergence of the concept of strategy in higher education can be traced to the late 1970s and 1980s as American universities, at that time, moved from a “managerial revolution” to an “enterprising evolution” (Thelin, 2004, p. 337). In the American context, the concept of strategy is associated with a peculiar form of governance of universities and the roles and visions of presidents (Bonaccorsi & Daraio, 2007). This was very much evident in Clark Kerr’s *The Uses of the University* (1963), which he wrote as President of the University of California system—one of the most advanced higher education systems in the world still today. Although he discussed the impact of business models and market forces, he also noted these would be undervalued in the eyes of university leaders and governments. Following Kerr’s seminal book, much of the discussion around strategy in higher education centred on strategic planning in terms of mission, vision and strategic intent, environmental assessment, goals, strategic actions, tactical implementation, assessment and evaluation, and with the results of university foresight exercise (Duderstadt, 2000; Kotler & Murphy, 1981)—in line with the planning school of thought.
In 1983, Keller (1983) brought about the notion of ‘academic strategy’ in higher education. Dubbed the founding father of academic planning (Dooris, 2002), he wrote about the entrepreneurial element of the academic leader to develop an “imaginative academic strategy” (Keller, 1983, p. 177). Many others since have discussed and extended this notion of academic leadership in an entrepreneurial institution (see examples of Balderston, 1995; Birnbaum, 1992; Bowen & Shapiro, 1998; Chaffee, 1985; Clark, 1998; Marginson & Considine, 2000; Slaughter & Leslie, 1997). Although still rooted within the planning school—higher education’s conception of strategy continued to emphasise its use as a rational tool for orderly, systematic management—as a “disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it” (Bryson, 1988, p. 74)—it also introduced the role of personalised leadership and strategic vision embedded within the entrepreneurial school of thought.

Strategic planning became widespread in America in the 1980s and 1990s, although by then scepticism towards strategic planning had also begun to emerge. Generally, strategic planning was criticised for being too linear, for relying too heavily on available hard information, for creating elaborate paperwork mills, for being too formalized and structured, for ignoring organizational context and culture, and for discouraging creative, positive change—in essence, it was believed to be time-consuming and not very useful (Presley & Leslie, 1999). In higher education, universities as ‘professional bureaucracies’ (Mintzberg, 1983) and ‘organized anarchies’ (March & Olsen, 1976) were seen as incompatible with strategic planning objectives. According to Minztberg (1983), goal ambiguity is a characteristic of academic organizations and consequently, strategy loses its importance as it is hard to agree upon any common goal in this type of professional bureaucracy. Additionally, goals are also highly contested when they are specified particularly in organized anarchies (Baldrige, 1971).

This is not to say that planning is a futile effort, or that it is unnecessary and undesirable. Mintzberg (1994) and Peters (1982), for instance, both argued explicitly for the use of planning in astute ways—to listen to the market, to encourage the emergence of good ideas, to allow employees to contribute, to help managers recognize opportunities and make good decisions, and to help an organization flourish amidst change. In more
recent times, universities have begun to move away from the rigidity of planning paradigm to a more flexible paradigm such as the interpretive model of strategy (Chaffee, 1985; Maassen & Potman, 1990)—which focuses on organizational culture and its influence on the motivation of individuals, and hence dependent on internal and external relationships—to a mixed strategy approach which combines two or more strategies to better meet organizational diverse goals and policies.

More recently, others have also extended the notion of strategy in higher education to a more positioning focus (see examples of Fumasoli & Huisman, 2013; van Vught, 2008). According to Fumasoli and Lepori (2011), strategic, or ‘institutional’, positioning in higher education is the process through which higher education institutions locate themselves in specific niches within the higher education system. This concept differs from traditional positioning in for-profit sectors (Day, 1994; Jaworski & Kohli, 1993; Porter, 1985) in that universities select a number of dimensions of activities (Popielarz & Neal, 2007) such as research, teaching and learning, knowledge exchange, international or regional engagement (van Vught & Huisman, 2013). Universities make strategic choices in which dimensions to focus their efforts on, not necessarily for direct profit-making but for a variety of reasons, including to improve academic reputation. This will take into account the continuous relationship between the procuring and allocating of resources, and the dynamic interactions between universities and other organizations within the system as well as with the state and national governments (Fumasoli & Huisman, 2013).

Hence, the use of strategy in higher education has primarily been dominated by the planning paradigm. In many higher education systems, accreditors have come to expect strategic planning as representing basic good practice (see example of the Tertiary Education Quality and Standards Agency (TEQSA): Commonwealth of Australia, 2015b). In others, this is no longer the case. In the United States, for instance, where strategic planning began, the Council for Higher Education Accreditation’s Recognition Standards no longer expect “evidence of policies and procedures that stress planning and implementing strategies for change” (see Council for Higher Education Accreditation (CHEA) in Dooris, Kelly, & Trainer, 2004). Instead, it encourages “where appropriate, self-scrutiny and planning for change and needed improvement” (CHEA, 2012). This has
provided American institutions some autonomy in formulating and implementing strategy in ways that are more suited to their own specific contexts.

3.4 Strategy in medical education

There is very limited research focusing on medical schools as a whole and from an institutional perspective. The vast majority of studies on medical schools have focused on basic medical education and have been conducted within a single medical school (Brosnan, 2010). Consequently, differences between medical schools have remained largely unexamined (Brosnan, 2009; Cribb & Bignold, 1999; Jefferys & Elston, 1989; Light, 1988). The lack of comparative studies could be attributed, among other reasons, to the theoretical background of medical education researchers (Brosnan, 2010). More often than not, medical researchers are focussed on clinical disciplines, education or psychology rather than the study of organizations such as the medical schools. This section reviews the somewhat limited literature available.

In a study of medical schools in Canada, the authors analysed the positions of Medical Education Research and Innovation (MERI) units within medical schools (Varpio, Bidlake, Humphrey-Murto, Sutherland, & Hamstra, 2014). Looking at MERI as the unit of analysis, they found that the performance of those units could be measured through indicators of teaching, faculty mentoring, building collaborations, delivering conference presentations, winning grant funding, and publications. Additionally, they identified behaviours which MERI directors use to negotiate, strategize and position their units within their local contexts. These include: advocacy, promoting growth, managing expectations and building relationships with individuals. Varpio et al. (2014) concluded that their findings can produce insights which can be used to improve the academic output and status of MERI in the local, national and international contexts.

Research and practice in medical education must take into account the position of each medical school in relation to its competitors and to external agencies (Brosnan, 2010). In her study of 30 medical schools in the United Kingdom, Brosnan (2010) argued that medical schools’ varying curricula and admissions criteria serve to distinguish them from their competitors and to facilitate access to different forms of capital, including
economic, cultural, social and symbolic. She further highlighted the need and importance of rendering the medical school an object of future study and the importance of examining the differences between medical schools.

Trumble (2010) drew an analogy of Brosnan’s (2010) study to the Australian medical school context. He argued that medical schools in Australia can be characterised within two distinct positions: academic and vocational. In particular, the newer medical schools have a more vocational focus, in that they are more distinctly geared to produce a primary medical workforce. Trumble (2010) further explained that what counts as capital in the academic arena such as gaining a high ranking on international league tables or winning competitive research grants, has little value in the vocational field, which focuses on preparing and retaining best-suited health professionals for the region.

In a study of new Australian medical schools established in the early 2000, Lawson, Chew and Van Der Weyden (2004) found that the new medical schools differ from each other and from more established medical schools. These differences include the ways the new schools structure themselves, employ resources for delivering the curricula, and prioritise and specify qualities they wish to foster in their graduates. In the study, the authors did not find any distinctiveness in the curriculum and medical programs, as all the new medical schools obtained their curriculum from an established medical school, which include recent reforms in medical education such as problem-based learning, self-directed learning, horizontal integration between disciplines, vertical integration between basic and clinical sciences, early exposure to patients, and increased emphasis on communication skills, ethics, and personal and professional development. Only one medical school, at the time, obtained its curriculum from a medical school overseas (Lawson et al., 2004).

It has been argued that medical schools, like any other organizations, have to take into account their external environment when developing strategies (Gordon et al., 2000). Looking at the issues raised by practical challenges in the environment across several contexts using a SWOT analysis, Gordon et al. (2000) recommended four strategies for medical schools to promote more effective learning in clinical settings. They believed that, in considering the external environment, the four strategies listed below lie within
the reach of a well-positioned medical school.

- using approaches to teaching and learning that are consistent with what medical schools already know about what, why and how students learn, and that medical schools ensure that teaching faculty are familiar with these approaches;

- equip students and their clinical supervisors with a clear and realistic understanding of the goals that they are expected to achieve and with coping strategies to achieve them;

- structure the clinical environment in ways that will reinforce professional values and make the best use of learning opportunities; and

- wherever possible capitalize on the potential of new IT resources to promote efficient learning in clinical settings.

In a case study of one medical school in the United States, the authors illustrate the emergent change in the medical school’s informal curriculum as a successful and novel approach to organizational development (Cottingham et al., 2008). Despite operating in a regulated environment, large-scale change within a medical school can be promoted with an emergent and non-prescriptive strategy. This can be achieved through an appreciative perspective, as well as a focused and sustained attention to everyday relational patterns.

From the review of limited research on medical schools, a number of issues can be derived as a point of departure for this study. Firstly, there is a need to study medical schools as organizations. Secondly, there is some evidence to show that medical schools can be distinctive from each another but that further research is required which examines the differences between medical schools. Finally, strategy formulation with respect to medical schools’ position should take into account the environment of medical schools. Consequently, this study is well-placed to contribute to perspectives, methods and insights which provide a basis for better understanding strategy formulation in medical schools.
3.5 Summary

This chapter has discussed conceptualisations of strategy, with particular emphasis of the role of environment within it. It also provided a broad review of strategy in higher and medical education. Having set the foundation, the next chapter will advance the conceptual framework which will be used to guide analysis of the study. The conceptual framework applies Porter’s conception of strategic positioning and competitive analysis to examine the environmental forces that shape medical education.
Chapter 4

The Conceptual Framework

4.1 Introduction

The broad literature review in the previous chapter has considered the different conceptualisations of strategy, and provides a discussion on strategy in higher and medical education. Having set the foundation, this chapter will examine the medical education industry through the theoretical application of Porter’s five forces framework. The aim is to gain a foundational perspective of the competitive landscape, its environment, its organizations and the groups and individuals that make up the medical education sector in Australia. This chapter begins by providing an overview of the five forces as defined by Porter, including a critique of the framework. It is then followed by a review of studies which have applied the framework to higher education industry. Subsequently, it will proceed to explore each of the forces in the context of Australian medical education, by looking at the current policy context in, structure of, and interactions within the system.

4.2 Overview of Porter’s five forces framework

As the preceding chapter has discussed, previous research and conceptualisations of strategy have long stressed the need to scan and assess the environment for matching opportunities with organizational capabilities and managerial desires. There is a basic agreement that organizations which align their competitive strategies with the requirements of their environment outperform other organizations that fail such alignment (Chaganti & Mahajan, 1989; Venkatraman & Prescott, 1990). Past research has attributed the successes of organizations to their strategic responses to meet the environmental challenges facing these systems (Ansoff & Brandenburg, 1971; Burns & Stalker, 1961; Clark, 1971; Herold, 1972; Lindsay & Rue, 1976; Selznick, 1949; Thune & House, 1970).

For most organizations, the dynamic process of adjusting to environmental change and uncertainty—of maintaining an effective alignment with the environment while managing internal interdependencies—is enormously complex, encompassing myriad
decisions and behaviours at several organization levels. Consequently, the underlying motive of assessing the environment—seen as a first step in linking strategy and environment (Daft, Sormunen, & Parks, 1988; Hambrick, 1982)—is to allow organizations to learn more about the opportunities that it may be positioned to take advantage of and conditions and events that threaten its performance and survival (Bourgeois, 1980; Lang, Calatone, & Gudmundson, 1997).

This is the central tenet of Porter’s analysis of competitive positioning. Strategic positioning “attempts to achieve sustainable competitive advantage by preserving what is distinctive about a company”. It means “performing different activities from rivals, or performing similar activities in different ways” (Porter, 1996, p. 1). The positioning school argued the use of key strategies as positions which can be defended against existing and future competitors (Porter, 1996). This is different from decisions based on operational effectiveness which are aimed simply at doing existing activities better.

For Porter, the essence of strategy formulation is to understand and cope with competition (Porter, 2008a), and competition in any industry does not stem only from competitors, but is also influenced by the underlying structures of the industry. As well, Porter stresses competitive advantage which is created and hence can be controlled by individual organizations. Accordingly, the basic foundations were laid to develop the five forces framework which includes rivalry, threat of new entrants, substitute products, bargaining power of suppliers and bargaining power of buyers. Since an organization cannot be all things to all people, strategy is about making choices to pursue things an organization wants and disregard things it does not want. It is a deliberate and conscious effort to be different from all other organizations in the industry.

The five forces framework supports a strategic analysis of the interactions between organizations, and the structures that frame their relative success and positions within that structure. Complementing these forces are other factors that need to be considered such as industry growth, technology and innovation, and the relationship with other sectors. Figure 7 illustrates these forces and factors, which would differ by industry.
1. **Threat of new entrants.** Profitable markets attract new entrants, which erodes profitability. Unless established organizations have strong and durable barriers to entry, then profitability will decline to a competitive rate. Porter (2008b) named seven major sources of barriers: supply-side economies of scale, demand-side benefits of scale, customer switching costs, capital requirements, incumbency advantages independent of size, unequal access to distribution channels, and restrictive government policy.

2. **Bargaining power of firm’s suppliers.** This is an assessment of how easy it is for suppliers to drive up prices, limit quality or services, or shifting costs to industry participants. This is driven by the number of suppliers of each essential input, uniqueness of their product or service, relative size and strength of the supplier, and cost of switching from one supplier to another.

3. **Bargaining power of firm’s customers.** This is an assessment of how easy it is for buyers to drive prices down, demanding better quality or more service, and generally playing industry participants off against one another. This is driven by the number of buyers in the market, importance of each individual buyer to the organization, and cost to the buyer of switching from one supplier to another. If a business has just a few powerful buyers, they are often able to dictate terms.

4. **Threat of substitute products.** Where close substitute products exist in a market, it increases the likelihood of customers switching to alternatives in response to price increases. This reduces both the power of suppliers and the attractiveness of the market.

5. **Intensity of rivalry among competing firms.** This can take different forms including price discounting, new product introductions, advertising campaigns, and service improvements. The degree to which rivalry drives down an industry’s profit potential depends on the intensity of competition and the basis on which competitors compete. The dimensions on which competition takes place, and whether rivals converge to compete on the same dimensions, have a major influence on profitability.
Figure 7: Porter’s five forces framework
4.2.1 Critique of Porter’s five forces framework

The five forces framework has become a centrepiece of texts on business strategy and strategic management. Just like any other strategy management models or framework, Porter’s five forces framework are not without limitations. Despite its popularity, there are some shortcomings to the framework. First, Porter has been criticised for making three tacit assumptions within the model (Coyne & Subramaniam, 1996): (1) that an industry consists of a set of unrelated buyers, sellers, substitutes, and competitors that interact at arm’s length, that they are separate entities that never interact, never collude and never influence each other directly; (2) that wealth will accrue to players that are able to erect barriers against competitors and potential entrants; in other words, that the source of value is structural advantage; and (3) that uncertainty is sufficiently low that you can accurately predict participants’ behaviour, plan ahead and choose a strategy accordingly. In defence of Porter, these assumptions, tacit or otherwise, are industry-specific. One should apply his or her knowledge of the industry to make judgements of the competitive forces relevant to that industry.

Grundy (2006) advanced a number of other shortcomings, including that the framework (1) tends to over-stress macro analysis, i.e. at the industry level, as opposed to the analysis of more specific product-market segments at a micro level; (2) oversimplifies industry value chains, for example, invariably ‘buyers’ may need to be both segmented and also differentiated between channels, intermediate buyers and end consumers; (3) fails to link directly to possible management action, for example, where companies have apparently low influence over any of the five forces, how can they set about dealing with them?; (4) tends to encourage the mind-set of an ‘industry’ as a specific entity with ongoing boundaries, which is perhaps less appropriate now where industry boundaries appear to be far more fluid; (5) appears to be self-contained, thus not being specifically related, for example, to ‘PEST’ (political, economic, social and technological) factors, or the dynamics of growth in a particular market; and (6) is couched in economic terminology, which may be perceived to be too much jargon from a practising manager’s perspective and indeed, it could be argued that it is overbranded (p. 215). Despite the limitations, Grundy (2006) contended that Porter’s framework is still a valuable and workable concept, which could be further
developed to improve its analytical power and increase its range of applicability.

There is also the difficulty in defining the industry in which an organization operates in. In particular, large organizations which operate in multiple industries will have to select the specific industries in which they operate. To that extent, such organizations applying the five forces framework, will have to develop a series of industry-specific analyses, in some cases as many as 50. These can be an arduous task especially when industries overlap or there are other supporting industries which are auxiliaries to the main ones. It becomes all the more onerous to define the industry an organization is in when the dynamic forces change the landscape of industries or organizations, for example through mergers and acquisitions.

Another limitation is the “single point in time” (Porter, 2008b, p. 11) of analysis. Industry structure is constantly changing—as a result of changes in legislation, changes in customers’ needs, advances in technology, etc.—and information gathered from an analysis of the five forces framework will become out dated as it only provides a snapshot of the market at any given time. However, the framework assists in identifying the most important developments. In particular, through an examination of substitutes, it is possible for organizations to identify challenges and threats, and for anticipating their impact on industry attractiveness.

Finally, as pointed out by Porter (2008b) there are also other factors such as industry growth rate, technology and innovation, government, and complementary products or services, that affect the organization. In addition to the five forces, organizations need to be aware of, understand the strategic significance and implications and respond to variability in such factors. Furthermore, organizations have to take into account their internal culture and ethos when forming strategies, which is not considered by the five forces framework.

Despite these drawbacks, the five forces framework continues to stand out in business literature and applied to numerous industries, in order to assist management to evaluate and assess their current environment. As many have concluded, while Porter’s framework has attracted criticism, it has, ultimately, not become invalid or obsolete (see
examples of Grundy, 2006; Narayanan & Fahey, 2005). The use of Porter’s framework, as with others, has to be applied with the knowledge of their limitations in mind and to use them as a part of a larger framework of management tools, techniques and theories.

### 4.2.2 Strategic industry analysis of higher education

There have been numerous studies which have applied Porter’s five force framework to particular industries such as dairy farming (Ondersteijn, Giesen, & Huirne, 2006), apparel (Fratto, Jones, & Cassill, 2006), emerging economies (Narayanan & Fahey, 2005), banking (Siaw & Yu, 2004), and construction (Betts & Ofori, 1992). A number of studies have applied the framework to higher education and/or particular aspects of higher education such as the effect of MOOCs (see for examples Brewer, Brewer, & Hawksley, 2000; Marshall, 2013), but none, as far as reviews of literature, are applied to medical education. A review of a number of studies which have applied Porter’s framework to higher education industry is discussed hereafter.

Webber (2000) applied Porter’s framework to higher education in the United Kingdom. In his analysis, he found that a number of changes would impact the competitive environment for universities. These include weaker monopolies, stronger consumers, changing markets, novel products and new competitors. He maintained that these forces threatened to change the competitive dynamics of higher education, and as a result universities will be forced to “re-consider the very nature in which we are engaged, to re-define the sector within which we understand ourselves to be competing, and to re-examine the ways in which we position our organizations” (p. 62).

In an analysis of the United States higher education industry, King (2008) found that industry rivalry is *moderate*, barriers to entry are *high*, supplier’s power is *low*, threat of substitution is *high*, and buyer’s power is *neutral*. Based on his analysis, he concluded that the competitive assessment of the higher education industry in the United States was *neutral*, which represent great challenges for university leaders and managers. King (2008) concluded that the use of Porter’s five forces framework was useful in gaining and maintaining an overall strategic plan, that it helps “managers have a wider competitive horizon than a day-to-day myopic operational outlook” (p. 11).
In their analysis, Pringle and Huisman (2011) sought to map out the competitive landscape of higher education in Ontario, Canada with a focus on the university sector. They found that the framework was able to delineate the effects of suppliers’ power (i.e. the highly skilled academic force) and rivalry (which comes in the form of competition for students, academic staff, donors, government-based funding and research income) as powerful forces in higher education that lead to tighter profit margins. In contrast, Pringle and Huisman (2011) found that high barriers to entry reduce the threat of new entrants into the industry, lowering competition, and thus raising potential profitability for universities. Additionally, in the context of Canadian university sector, technology and governmental policies are powerful drivers of shifts in the power of buyers (defined as the student and his or her parents) and threat of substitutes (defined by Martinez and Wolverton (2009a) as three attributes of convenience, time and application).

More recently, Mathooko & Ogutu (2015) applied Porter’s framework to analyse the choice of response strategies adopted by public universities in Kenya. In their study, they found that the framework influenced the choice of response strategies adopted by the public universities to a great extent, the most influence being the threat from new entrants. Pressure from stakeholders, changes in government policies and regulations, reforms in higher education, unethical response strategies by some universities and university location also influenced the choice of response strategies. Mathooko & Ogutu (2015) concluded that an extended framework, to include the government as a sixth force in the higher education sector, was useful in helping higher education institutions in Kenya achieve a competitive advantage and shape strategic policy direction in the face of changing environment and global commodification of higher education.

Collis (1999, 2000) and Martinez & Wolverton (2009a, 2009b) applied Porter’s five forces framework to higher education generally rather than country or system specific. Collis (1999, 2000) assessed how higher education may change in response to pressure such as new technology, shifting demographics and rising costs. He argues that the result of changes will be a profound deterioration in the structure of higher education industry. He recommended strategies to improve performance and position, in particular to focus on institutional strengths, but also notes the great potential in embracing the new technologies, delivery systems and customer needs generated by the changing environment.
Although Martinez & Wolverton (2009a, 2009b) applied the framework generally to higher education, they provided specific examples to the United States context. By providing illustrations within the five forces relevant to higher education, they argued that an industry analysis, using Porter’s framework, can complement and enrich traditional planning and lead to a more comprehensive strategy for higher education institutions. They, however, contended, that in the higher education context, a modified industry analysis that explicitly includes government as a sixth force—“a force of equivalent importance to the original five” (p. 28)—would more sufficiently and comprehensively describes higher education.

As an industry facing increasing pressure toward marketization, the literature, as discussed above, shows that an analysis of higher education as an industry using Porter’s five forces framework is justified and possible. Along the same lines, by analysing the five forces within the Australian medical education context, the conceptual framework can help medical schools understand factors affecting profitability, and to inform strategic decision-making by identifying game-changing trends early to swiftly exploit them and spot ways to work around constraints on profitability and reshape the forces in their favour (Porter, 2008b). He argues that “industry structure drives competition and profitability, not whether an industry is emerging or mature, high tech or low tech, regulated or unregulated” (Porter, 2008b, p. 12). As such, the five forces define an industry’s structure and shape the nature of competitive interactions within that industry (Porter, 1985).

4.3 Applying Porter’s five forces framework to medical education

Applying Porter’s five forces framework to medical education industry provides a systematic framework for interpreting how the five forces will affect the nature of competition in medical education. Instead of considering the impact of individual forces, the framework considers what collective changes will bring to each of the five forces, and how the resulting changes in structure may reconfigure the medical education industry.
Complementing these forces are other factors that need to be considered, such as economic downturn and technology, which Porter (2008b) recognises will have a direct effect on these five forces, and hence, will have a significant role to play in influencing the medical education industry as described in chapter 2. These additional factors will be discussed in the context of the five forces. Most particularly, in the case of medical education, there is also the role that governments and other regulatory bodies, including accrediting agencies, play. Figure 8 illustrates the forces as seen through the lens of Australian medical education, and provides the framework for the discussion below.

Figure 8: Medical education through the lens of Porter’s framework
4.3.1 Threat of new entrants

Porter (2008b) argues that it is not necessarily the actual entry of new competitors but the threat of new entrants to the industry which drives competition and impacts the industry’s profitability. The Federal government restricts new entry into medical education, caps student numbers and fees for domestic students, and steers the provision of clinical training funding for medical schools. For instance, it has taken many years of negotiations for Curtin Medical School to be approved, which is set to commence in 2017. All current medical schools are located within universities, and consequently the government plays a major role in steering educational policies. Changes in legislation and policies that would impact higher education generally would also have a flow-on effect on the medical education industry. For instance, the potential de-regulation of fees and places, placed in the back burner for the time being, would resurface in future budget cycles in some shape or form, and cuts to funding for higher education and hence medical education are to be anticipated. It goes without saying that changes in government legislation and policies within medical education will have a significant impact to the underlying structure of medical education industry.

The role other governmental departments play, such as the Federal Department of Health and Ageing, and the state and territory governments and departments of health, in providing support and funding for health and hospital infrastructure, also act as a barrier to entry. The Australian Medical Council (AMC) assesses and accredits the courses offered by medical schools has been seen as a formidable force within the industry (Henry et al., 1997). Other health sector organizations and agencies, such as Postgraduate Medical Councils, Medical Board of Australia, Medical Training Review Panel, National Rural Health Alliance, Australian Health Practitioner Regulation Agency, as well as local health systems and public and private hospitals, also play key roles in the education and training of medical practitioners, and accordingly have a direct and indirect impact within medical education (Dowton et al., 2005; McGrath et al., 2006). Accordingly, restrictive government policy is clearly a strong barrier to entry for new medical schools.

Supply-side economies of scale would mean increasing the number of university placements available for students, which enables medical schools to increase productivity
by decreasing average cost per student (Martinez & Wolverton, 2009b; Pringle & Huisman, 2011). In the medical education context, the number of students is capped by the government, and although it is possible to negotiate increases to enrolment, this has to be complemented with infrastructure availability, including the number of clinical placements available. Theoretically, increasing the number of students can decrease the cost per student, but practically, in the context of medical education, this may not be feasible. Consequently, supply-side economies of scale may restrict new entrants into medical education industry.

Demand side benefits of scale discourage entry by limiting the willingness of customers to buy from a newcomer and by reducing the price the newcomer can command until it builds up a large base of customers (Porter, 2008b). This is restricted in medical education. The government’s role in tuition caps means there are little fee differences between medical schools. In 2015, the fees for domestic students were $10,266 per student year, which is across the board. The international fee difference between two Group of Eight medical schools (Sydney and Monash) is $3,400 per student per year (Monash University, 2014, The University of Sydney, 2014). Furthermore, because of the restrictions to student numbers, there are generally more applications than there are places, and students tend to take what they get. Students are more likely to want degrees from medical schools located in metropolitan areas because of the location, and the higher salary associated with a ‘city’ job as compared to a ‘regional’ one. The fact that the more established and more reputable medical schools are located in metropolitan areas is a bonus. Additionally, because of the competitive nature of getting a place in a medical school, it is less likely for medical students to switch ‘supplier’. Consequently, there is limited demand-side benefit and possibility of switching medical schools.

Increasingly technology promises to be the vehicle for easier entry into the higher education industry. While the physical university has not died, ‘virtual universities’ (Daniel, 2012), such as Pearson, are proliferating with e-learning also being incorporated within existing institutions. As a person-centric profession, it is hard to imagine medical education being fully automated. However, the use of simulation in medical education is increasing in an attempt to reduce the number of safety concerns (Issenberg, Gordon, Gordon, Safford, & Hart, 2001). As well, simulated scenarios are realistic enough to
engage the students emotionally, thus providing a unique learning experience, where the high fidelity simulator ‘patient’ actually talks, breathes, blinks, and moves like a real patient; and are being adapted to accommodate the needs of various medical specialties such as anaesthesia, emergency medicine and trauma, intensive care medicine, obstetrics, paediatrics, and radiology (Khan, Pattison, & Sherwood, 2011). Consequently, technology has the potential to replicate much of the education experience at marginally lower cost, and hence reduce entry barriers.

As mentioned in chapter 2, the estimated cost of teaching a medical student is approximately $50,000 per student per year, $90,000 if value of time committed by honorary staff were included (Oates et al., 2014). In Australia, as in most systems, medical education is afflicted with what Baumol (1967) described as the ‘cost disease’. Medical schools, like universities, have large infrastructure costs, large labour costs and reliance on expensive face-to-face provision. The substantial investment as compared to expected returns of having a medical school needs to be weighed. Consequently, the high cost of teaching and capital investment may reduce the threat of new entrants.

Although medical education was the first professional degree to be conferred by Australian universities (Forsyth, 2014), unlike other professional degrees such as business and accounting, medical education has not been taken up by private providers for two main reasons: barriers to entry by government and accrediting bodies, and the cost of teaching and capital. Within the Australian regulatory framework, TEQSA controls the number of higher education institutions in the system. Furthermore, new providers will likely face increased competition from established providers, who will use their collective market power to protect their market share and restrict new entrants into the market (Jongbloed, 2003). Consequently, established medical schools have an incumbency advantage that is not available to potential new entrants to this industry, private or otherwise (Porter, 2008b).

Porter’s notion of threat of new entrants as a competitive force implies that low entry barrier will lead to more providers and consequently more competition, while a high entry barrier will lead to fewer providers and less competition. Viewed from this perspective, barriers to entry, would be considered quite high. Therefore, in the context of
medical education, the threat of new entrants as one of the five forces would be considered to be relatively weak.

4.3.2 Bargaining power of suppliers

Suppliers are those organizations that provide materials, information, or knowledge to allow an organization to produce its products and services (Martinez & Wolverton, 2009a). Raw materials such as books and computers, and support services such as health clinics and food services make up a portion of supplier power but inconsequential in higher education (Oviatt & Miller, 1989; Pringle & Huisman, 2011). Staff, is by far the biggest contributor to supplier power (Collis, 1999; Pringle & Huisman, 2011). In medical education, the power of academic staff varies depending on the status and reputation of the medical school, the field of research and the ability to attract funding. The commercial value of academic knowledge, particularly in medicine, has increased, along with recognition that staff should and can earn a share of monetary value produced by their research. This is made more complex by medical schools’ relationships with Medical Research Institutes and hospitals. Competitive bidding for talent drives salaries upwards and encourages medical schools to use part-time and honorary staff who are a cheaper source of labour and only compensated, if any, for their teaching time (Collis, 1999, 2000). Additionally, the increase use of simulation techniques in medical education may reduce the need for physical teaching staff.

Accordingly, in the context of medical education, academic staff, who are valued for their research, maintains a strong bargaining position and degree of power because suppliers offer products that are differentiated and there is little substitute for what the supplier offers (Porter, 2008b). Academic staff who teach has moderate bargaining position because supplier power is more concentrated than the industry it sells. Seen from the lens of Porter’s framework, suppliers’ power as a competitive force in medical education industry would be considered relatively high.
4.3.3 Bargaining power of buyers

In much of the literature and media, students are considered as ‘buyers’ for higher education. In Australian medical education, there are limits to domestic student enrolments set by the government. Selection of students into medical degree programs is highly competitive, and there are many more suitable candidates than there are places (Wilkinson et al., 2011). To some extent, international students have more power than domestic students. Medical schools have the ability to set the fees and numbers for international students. However, demand is greater than supply and as such, even international students have somewhat limited bargaining power.

Porter (2008b) argues that powerful customers can capture more value by forcing down prices, demanding better quality or more service, and generally playing competitors off against one another. This does not seem to be the case for medical schools. Additionally, according to Porter, buyer power is reduced because students exercise the bulk of their power individually, whereas staff as suppliers operate under an organized union. As such the bargaining power of medical students is relatively weak.

4.3.4 Threat of substitute products

A substitute product performs the same or similar function by a different means (Porter, 2008b). In medical education, the move towards graduate entry can be seen as one form of product substitution. While there used to be a clear distinction between undergraduate-(Bachelor of Medical Bachelor of Surgery) and the graduate-entry (Doctor of Medicine) programs, there seems to now exist different variations of the two. For instance, the medical school at the Australian National University offers a graduate entry into the Doctor of Medicine and Surgery (MChD) (The Australian National University, 2014b), while the medical school at the University of New South Wales offers an undergraduate entry into the Bachelor of Medical Studies/Doctor of Medicine (BMed/MD) (UNSW Medicine, 2012a). The time taken to complete the degree is another factor, which would drive students to seek out substitute products.
The inclusion of clinical skills training through the use of simulators into the curricula of medical students has seen significant growth, and consequently, technology will increasingly play a part in students’ choice of products. If students, as digital natives, consider the educational experience provided by simulation technology as of paramount importance, then the threat of substitutes is high, or low if students are impartial about this. As medical schools move into graduate-entry programs, this will also shift the demographics of students (as more mature-aged students enter medical education) and the profiles of students will change creating the potential need for other substitutes.

As demand for university places are higher than supply, substitutes as a competitive force may not pose as a threat to medical schools. In fact, in the case of medical education, the substitution threat may actually be in favour of the industry, which bodes well for its future profitability and growth potential. Accordingly, viewed from Porter’s perspective, the threat of substitutes can be considered low in medical education.

4.3.5 Intensity of rivalry among competing firms

According to Porter (2008b), rivalry among existing competitors takes many familiar forms, for example price discounting and service improvements, and the degree to which rivalry drives down an industry profit potential depends on the intensity and the basis on which they compete. In the context of medical education, the intensity of rivalry depends on the object of competition: students, staff, government funding, philanthropy, and research dollars. Increasingly also, medical schools compete for reputation on various rankings and league tables, nationally and internationally. Some examples of rivalry are provided below.

According to Martinez and Wolverton (2009a, 2009b), the intensity of rivalry is greatly influenced by two structural factors: the profile of existing institutions and industry context. As mentioned in chapter two, there are 18 medical schools currently in Australia, with one new medical school commencing in 2017. In 2014, there were 16,837 students enrolled in the 18 medical schools (MDANZ, 2015c). The breakdown by institutions is provided in Figure 9. Medical student numbers are capped by the government and hence medical schools do not compete on this basis. The number of
international students at each medical school range from zero to just over 400 students. While there may exist some competition for international students, particularly within the bigger medical schools, the intensity of the competition may not be that strong. As Porter (2008b) argued, it is equally important that rivals compete on the same dimensions. As can be seen from Figure 9, not all medical schools compete for international students.

**Figure 9: Total student enrolments by institutions, 2014**
Source: MDANZ (2015b, 2015c)
Being comprehensive universities, all Australian universities compete for research grants in some shape or form. Medical schools, in that respect, are no different. Figure 10 shows the amount of funding awarded by the National Health and Medical Research Council (NHMRC) in 2015 to each institution. While not specifically to medical schools, the figures for each institution provide an indication of level of funding awarded in health and medical research. While all medical schools may compete in the same dimension of research, the level of intensity differs between medical schools. As can be seen from Figure 10, the intensity of rivalry would be stronger for those institutions in the top-tier (the Group of Eight institutions as well as University of Newcastle) but lower among institutions in the bottom tier.

Figure 10: Funding awarded by NHMRC, 2015

Source: NHMRC (2015b)
In 2014, $400 million were donated to health and medical research, approximately 10 percent of Australia’s total philanthropic income (Kerin, 2014). The government’s plans for a Medical Research Future Fund has the potential to reduce philanthropy sources (Kerin, 2014), as does any economic downturn. More established medical schools rely on endowments as they make up a significant proportion of their discretionary income. Consequently, depending on the context of the medical school and the intensity of rivalry, philanthropic sources of income can be a source of rivalry for medical schools. As well, medical schools compete for academic staff with national reputations. If pay and working conditions are not satisfactory, staff can move on to other institutions, not only to other medical schools but also Medical Research Institutes, where conditions may be more preferable to them.

The above provide examples of dimensions of competition in which medical schools compete in and the intensity of it. Medical schools may compete on different dimensions and depending on their context, have different intensity to the potency of the competition. For instance, there is limited competition on the dimension of student as compared to research monies. Seen from the lens of Porter’s five forces framework, intensity of rivalry in medical education is variable among dimensions.

### 4.3.6 Overall assessment of medical education industry

The preceding discussion has demonstrated the value of assessing the Australian medical education industry through the lens of Porter’s five forces framework. As argued by Porter (2008b), an awareness of the five forces of new entrants, power of buyers and suppliers, substitutes and rivalry can help medical schools understand the structure of their industry and stake out a position that is more advantageous and less vulnerable to attacks from competitors. From the industry analysis and as illustrated in Figure 8, industry rivalry in medical education is dimension and context specific, and can range from limited to very strong. The barriers to entry, such as government and accrediting agencies, and high teaching and capital cost, are quite high and are one of the strongest protecting forces for the medical education industry. Supplier power, in the form of academic research staff, is high as they offer products that are differentiated, for which there is limited substitution. On the other hand, buyer power is weak as there are many more suitable candidates than
there are places; and students cannot compete on price. By the same token, the threat of substitution can also be considered low. Finally, factors, such as government and regulatory bodies, technology, economic downturn, and demographic changes, can potentially shift the five forces over time and the resulting changes in structure may reconfigure the medical education industry.

The conceptual framework discussed above, Porter’s five forces framework, has provided a lens through which to analyse medical education industry and guide analysis of the empirical component of the study. By applying the framework to this study, the results of the analyses can assist medical schools to analyse the five forces and corresponding factors that structure their place within medical education. It enables medical schools to think strategically and above all, to act, innovate and use that experience to stimulate and sustain change. It must be noted, however, that this form of analysis and strategic awareness it supports must be continuous and dynamic in order to be successful.

4.4 Summary

This chapter has sought to map the competitive landscape of the medical education industry using Porter’s five forces framework. The fundamental supposition of the conceptual framework is that strategy formulation is influenced by a medical school’s external environment, which Porter conceptualised as the five forces. The chapter described the application of the framework to medical education and provided a structure to guide analysis of case studies of Australian medical schools. In the chapter that follows, a description of the positioning dimensions and indicators of performance will be discussed.
Chapter 5

Operationalizing strategic positioning in higher education

5.1 Introduction

Having set out the conceptual framework in the previous chapter, this chapter describes the dimensions of positions and indicators, which will be used in the profiling tool. This chapter provides the rationale for extending the Australian University Profiles to analyse medical schools’ positions within the system and a discussion on the choice of positioning dimensions and indicators that a medical school can choose to focus on. The final section in this chapter provides an overview of the five dimensions and 23 indicators used in the profiling tool.

5.2 A profiling tool for strategic positioning

The conceptual framework described in the previous chapter has provided a lens through which to view medical education industry and interpret how the five forces will affect the nature of competition in medical education. Previous studies on research in higher education, even those which have focused on similar theoretical perspectives, have failed to converge on a set of common explanation to explain strategic positioning in higher education. Some authors argue that universities have an innate tendency to differentiate and position themselves, while many others argue that universities are likely to become less diverse over time. There are others whose results have been inconclusive.

In the absence of strong theoretical consensus, Rossi (2009, 2010) asserts that empirical analysis plays a very important role in order to help disentangle some of the complex processes affecting strategic positioning and the possible causal relationships. In the context of Porter’s strategic positioning perspective, an effective visualisation tool of a university’s performance can assist management to direct their resources towards a limited set of strategic dimensions, in order to avoid becoming ‘stuck in the middle’
(Mahon & Murray, 1981), adopt strategies which emphasise some dimensions at the expense of others (Kim & Lim, 1988), or choose between alternative strategies (Lukas, Tan, & Hult, 2001; Tan & Litschert, 1994). Designing strategy around critical resources and capabilities imply that medical schools may limit its strategic scope to those activities where it possesses a clear competitive advantage (Grant, 1991).

Further, for some universities which see themselves in ‘blue ocean’ (Kim & Mauborgne, 2005), they may be able to position themselves distinctly through a focus on a single discipline such as business, or particular territory such as postgraduate business engagement or internationalisation, or emphasising on a particular research focus, or on learners; or based on academic enterprise or business-facing mission (Purcell, Beer, Southern, & Chipperfield, 2011), as well as attributes such as commitment to diversity, serving the local area and religious affiliation (Morphew & Hartley, 2006).

The importance of visual representation to support strategic decision-making has been emphasized by many researchers (Eden & Ackerman, 1998; Foil & Huff, 1992; Lohse, Biolsi, Walker, & Rueter, 1994; Morgan, 1993; Tan & Platts, 2003a; Tufte, 1990). While there are some drawbacks to visual depiction of information (see example of Bresciani & Eppler, 2008 for a detailed description), the pitfalls can be avoided by ensuring good principles of visualisation are adhered to (Eppler, 2007; Fong, Valerdi, & Srinivasan, 2007). From a synthesis of the literature, Platts and Tan (2004) also found that visualisation techniques have many cognitive and operational functions. Table 6 summarises the functions of visualisation.
Table 6: Functions of visualisation

<table>
<thead>
<tr>
<th>Functions</th>
<th>Advantages</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive functions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focuses attention</td>
<td>Allow managers to identify the areas of interest</td>
<td>DeSanctis (1984); Vessey (1991); Foil and Huff (1992); Mackay, Barr, &amp; Kletke (1992), Craig (2000); Tan and Platts (2003a)</td>
</tr>
<tr>
<td>Triggers memory</td>
<td>Allows managers to make connections among past events</td>
<td>Craig (2000); Tan and Platts (2003a)</td>
</tr>
<tr>
<td>Shares thinking</td>
<td>Enables managers to share their thinking with colleagues</td>
<td>Eden (1988); Foil and Huff (1992)</td>
</tr>
<tr>
<td>Stimulates thinking</td>
<td>Provides an invitation to view a situation in a way that often stimulates fresh thinking</td>
<td>Wertheimer (1959); Tufte (1990); Kim and Mauborgne (2002)</td>
</tr>
<tr>
<td>Bridges missing information</td>
<td>Exploits the human visual system to extract information from incomplete data</td>
<td>Kosslyn (1983); Tegarden (1999)</td>
</tr>
<tr>
<td>Challenge self-imposed constraint (perception)</td>
<td>Enables managers to look at a problem in a new way</td>
<td>Morgan (1998); Mintzberg and Van Der Heyden (1999); Davies and Mabin (2001); Tan and Platts (2003b)</td>
</tr>
<tr>
<td>Functions</td>
<td>Advantages</td>
<td>Authors</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Operational functions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identifies structure, trends, and relationships</td>
<td>Identifies structure, patterns, trends, anomalies, and relationships in data</td>
<td>Weick (1979); Zhang and Whinston (1995); Mintzberg and Van der Heyden (1999); Chen (1999); Kaplan and Norton (2000); Phaal, Farrukh, &amp; Probert (2002)</td>
</tr>
<tr>
<td>Displays multivariate performance</td>
<td>Enables managers to analyse complex performance</td>
<td>Mills, Neely, Platts, &amp; Gregory (1998); Richards (2000); Kim and Mauborgne (2002)</td>
</tr>
<tr>
<td>Highlights key factors</td>
<td>Allow managers to specify explicitly their views on the importance weighting of variables</td>
<td>Tufte (1983); Eden (1988); Tan and Platts (2003a)</td>
</tr>
<tr>
<td>Provides an overview of complex data sets</td>
<td>Provides a picture of the problem that is relatively easily examined, explored, and if appropriate, changed. Managers often have difficulty perceiving the dependencies among choices, uncertainties, and outcomes</td>
<td>Horn (1989); Tufte (1990); Spence (2001)</td>
</tr>
</tbody>
</table>

Source: Platts and Tan (2004)

An effective visualisation tool is an important way of developing an understanding of a university’s perceptions of its position in relation to the external environment (Platts & Tan, 2004). Visualisation techniques become all the more so important in Porter’s depiction of competitive positioning, if intentions “must be common knowledge to virtually all the actors in the organization” and that “these collective intentions must have
been realized exactly as intended” (Mintzberg & Waters, 1985, p. 258). A shared understanding through an effective visual tool is key to executing strategy.

There are a number of published techniques used to visualise performance in a strategy process, none of which capture rapidly, and display immediately in a simple, readily understandable form, all the varied aspects of a strategy (Richards, 2001). Platts and Tan (2004) advance a number of techniques: performance profiling, strategy charting and a tool for action plan strategy, and argued that different techniques should be used at different stages of the strategy process. In the context of higher education, van Vught and Huisman (2013) identified a number of visual tools which could be used to analyse strategic positioning of higher education institutions: activity profiling, degree profiling, multidimensional performance ranking and benchmarking. Particularly, as a first step in the strategy process and in the context of aligning the environment and its position (Platts & Tan, 2004), a profiling method would be useful to enable comparisons across multiple dimensions and across a range of attributes in order to assess the fit between strategy and environment (van Vught & Huisman, 2013).

A profiling tool which provides performance insights into universities’ dimensions activities and performance using ‘positioning’ indicators would enable universities to focus on performance across dimensions and to better position themselves against a landscape of ‘sameness’. This would encourage differentiation; explore benchmarking opportunities and present powerful reference points for various stakeholders (Mahat & Goedegebuure, 2014).

The Australian University Profiles (Coates et al., 2013; Mahat et al., 2014) is an evidence-based visual tool which has been used to profile Australian universities. It was built to mirror two international profiling tools—the U-Map (van Vught et al., 2010) and U-Multirank (van Vught & Ziegele, 2012)—initiated in Europe. The U-Map and U-Multirank tools were developed to allow the creation and analysis of institutional profiles, offering snapshots of an institution’s activities and performance on different dimensions, namely teaching, research, knowledge transfer, international collaboration and engagement (van Vught & Ziegele, 2012; van Vught, 2009).
This study extends the Australian University Profiles to the medical school level. There are a number of reasons why the Australian University Profile has been selected for this study. Firstly, the profiling tool could be utilised to display a comparative picture and the alignment between environment and achieved performance (Platts & Tan, 2004). Secondly, it could be used to make a range of profiles visible and transparent and only focuses at comparing “apples with apples and oranges with oranges” (van Vught & Huisman, 2013, p. 30). Finally, it was found that the use of multiple colour-coded dimensions was engaging and provides a clear visual representation of performance (Coates et al., 2013; Mahat et al., 2014).

The Australian University Profiles provides insight into universities’ profiles via five dimensions of: (1) **teaching and learning**: the dissemination of knowledge through teaching, which includes all forms of processes to transmit knowledge, skills and values to learners; (2) **research**: the participation and contribution to basic and applied research undertaken to increase the stock of knowledge and the use of this stock of knowledge to devise new applications; (3) **knowledge exchange**: process by which the knowledge, expertise and intellectually linked assets of universities are constructively applied beyond the university for the wider benefit of the economy and society; (4) **international orientation**: the extent to which activities are directed to international audiences; and (5) **student profile**: the extent to which the diversity of students determine the nature and positioning of universities. Each of the dimensions will be discussed in the final section of this chapter.

In this study, two adaptions were made to the Australian University Profiles. Firstly, the adaptation focuses on performance profiles, which are comparative and evaluative, showing how well an institution performs its defined activities (van Vught & Huisman, 2013). Secondly, a number of indicators were removed, adapted or included to suit the medical school context. While there are a core set of dimensions and indicators that may be relevant and meaningful at all levels, there will be indicators which need to be adapted to the medical school.
5.3 Positioning indicators in higher education

Through a rigorous process of validation, a set of 23 positioning indicators were selected based on a number of criteria to fit into the five dimensions. Data was collected for these indicators and presented via the visual profiling tool, to seek participants’ views on the strategic positioning of medical schools within the system. This next sub-section discusses the indicator selection process.

The indicator selection process is depicted in Figure 11. The first step in identifying a set of indicators for measuring performance of medical schools was a comprehensive inventory of potential indicators drawn from the literature (see examples of Birnbaum, 1983; Daraio et al., 2011) and existing rankings of medical schools such as Academic Ranking of World Universities, Find the best university, QS World University Rankings, The Guardian League Table, THE World University Ranking, U-Multirank, and US News & World Report (Graphiq Inc., 2015; Guardian News and Media Limited, 2015; QS Quacquarelli Symonds Limited, 2015; ShanghaiRanking Consultancy, 2015; TES Global Ltd, 2015; U.S. News & World Report LP, 2015; U-Multirank, 2015). Some of the indicators in this list were eliminated because of their similarity with other indicators, or their irrelevance to the Australian context. An initial list of 124 indicators was compiled.

This initial pool was then sent to a group of experts knowledgeable in higher education and/or medical education and/or performance indicators in higher education. They were asked to review the indicators that could potentially be used in the profiling tool. They were also asked to provide suggestions for improvements and modifications and/or recommendations for additional indicators. Thirteen experts responded with substantive feedback and recommendations. The list of experts is provided in Appendix A.
Figure 11: Indicator selection process

1. **Review of literature**
2. **Review of existing program rankings**
   - First selection of indicators
     - **Expert review**
     - **Practical, technical and substantive criteria**
   - Second selection of indicators
     - **Pre-test simulation**
     - **Review of data sources**
   - Final selection for study

---

104 | Chapter 5
Following the expert feedback, a set of indicators was chosen based on the criteria of practical consideration, technical consideration and substantive consideration (Coates et al., 2013; Mahat et al., 2014). Practical criterion refers to data availability, data comparability and data stability. If the data was not available, or comparable, or stable, it was not included in the tool. The ideal scenario in terms of data availability from the point of view of validity, reliability and parsimoniousness of data collection (i.e. not bothering medical schools with unnecessary questionnaires) is to use existing databases or other publicly available sources, where, for the most part, third parties would have validated data. For this study, data was gathered from various established sources, including from the Department of Education, government and other databases (e.g. uCube and SciVal), websites (e.g. NHMRC and MDANZ), and other organizations (e.g. Social Research Centre and Graduate Careers Australia).

In terms of comparability, the indicators allow comparisons between medical schools (i.e. broadly similar definitions are used across medical schools so that data are comparable). For instance, as mentioned in chapter two, some of the Australian medical schools combine a number of different foci including nursing and dentistry within the medical school framework. Consequently, the internal academic organizational structures vary between medical schools, as medical schools have different fields of education depending on their areas of disciplinary focus. Fields of education as defined by Australian Standard Classification of Education (ASCED) were initially mapped for a number of medical schools. In order to be consistent across medical schools, a broad range of fields of education were used in the profiling tool. Hence, while the data was comparable across medical schools, the profiling tool presented for each medical school may not reflect the actual internal academic structure of individual medical school.

Technical criterion included whether the data was valid and reliable/consistent. Validity means that the indicator measures what it claims to measure and is not confounded by other factors. This criterion is broken down into concept and construct validity (i.e. the indicator focuses on the performance of medical programs or medical schools) and is defined in such a way that it measures ‘relative’ characteristics (e.g. controlling for size of the institution); and face validity (i.e. the indicator is used in other benchmarking and/or ranking exercises and thus may be regarded as a measure of performance which already
appears to be used). Reliability indicates that the measurement of the indicator is the same regardless of who collects the data or when the measure is repeated. The data sources and the data to build the indicator are reliable and consequently consistent.

Substantial criterion indicates whether it was linked with outcomes, whether there were meaningful differences or whether it was research-, practical- or policy-driven. While many indicators could be of potential interest, there is no value in collecting information that is unlikely to distinguish between medical schools. Additionally, it is desirable that the data have prior research, or practical, or policy foundations. Evidence on such grounds is used to inform the use of individual indicators.

A preliminary set of 28 indicators within the five dimensions of activities was derived based on expert feedback and three criteria of practical, technical and substantive as described above. Data for the preliminary set of indicators were simulated for the 18 medical schools in Australia. This was done on the basis of publicly available data at the broad fields of education and at the institutional levels as well as knowledge of the Australian higher education sector. An exploratory analysis of the simulated profiles was conducted. A number of profiles of medical schools, which displayed substantive variations on performance of indicators and dimensions, were selected for further analyses. As a result of initial analyses, five indicators were deleted from the tool. For instance, the measure of casual academic staff was removed because it showed no variation whatsoever between medical schools. Three indicators from the knowledge exchange dimension were removed because of difficulties in obtaining data and/or the lack of comparability across the medical schools.

Additionally, the results of the initial analyses were presented at seven national and international conferences (Mahat, 2014a, 2014b, 2014c, 2015a, 2015b, 2015c, 2015d), from which further feedback was received from higher education scholars and practitioners. In arriving at the final tool, the evaluation of each indicator was both theory- and data-driven.

The indicators exhibited normal characteristics and hence the four categories were set by taking quartiles of the national distribution. Each medical school was placed in the
first, second, third or fourth group or quartile on each indicator. The output was compiled graphically into a sunburst profile for each medical school. An example profile for a median medical school is given in Figure 12. This fictitious medical school represents the average of all medical schools, depicting the median national value for each indicator. This profile provides a reference point against which the profiles for each medical school can be compared.

![Figure 12: Median medical school profile](image-url)
5.4 Overview of final dimensions and indicators

The five subsections that follow present the indicators for the five dimensions of teaching and learning, student profile, research involvement, knowledge exchange, and international orientation. The choice of dimensions and indicators has gone through a rigorous process of validation through previous studies (see U-Map, U-Multirank and Australian University Profiles), and through the present study. In this adaptation, the indicators and data elements have been moulded to fit local contexts and data availabilities. Table 7 summarises the dimension and indicators used in the profiling tool for the current study. Appendix B provides further descriptions of each indicator.
Table 7: Overview of dimensions and indicators

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Code</th>
<th>Indicator label</th>
<th>Indicator detail</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching and Learning</strong></td>
<td>T.1</td>
<td>Academic staff</td>
<td>The proportion of academic staff in the medical school as a proportion of all academic staff in the institution.</td>
<td>Department of Education/uCube</td>
</tr>
<tr>
<td></td>
<td>T.2</td>
<td>Staff/student ratio</td>
<td>The ratio of staff to students</td>
<td>Department of Education</td>
</tr>
<tr>
<td></td>
<td>T.3</td>
<td>Retention rate</td>
<td>Retention rate (adjusted DoE calculation) commencing bachelor domestic students</td>
<td>Department of Education</td>
</tr>
<tr>
<td></td>
<td>T.4</td>
<td>Quality of Teaching</td>
<td>The proportion of undergraduate domestic later students who responded in the top two response categories for this item in the University Experience Survey (UES), now known as the Student Experience Survey (SES).</td>
<td>Social Research Centre</td>
</tr>
<tr>
<td></td>
<td>T.5</td>
<td>Quality of educational experience</td>
<td>The proportion of undergraduate domestic later students who responded in the top two response categories for this item in the University Experience Survey (UES), now known as the Student Experience Survey (SES).</td>
<td>Graduate Careers Australia</td>
</tr>
<tr>
<td></td>
<td>T.6</td>
<td>Overall satisfaction</td>
<td>The proportion of domestic undergraduate students who completed their degree program in the previous year who were satisfied ('Agree' and 'Strongly agree') with the overall quality of their course in the Course Experience Questionnaire (CEQ).</td>
<td>Social Research Centre</td>
</tr>
<tr>
<td>Code</td>
<td>Indicator label</td>
<td>Indicator detail</td>
<td>Data source</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>----------------</td>
<td>------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>S.1</td>
<td>Student body</td>
<td>The proportion of students enrolled in medical school as a proportion of university’s student body (EFTSL).</td>
<td>Department of Education/uCube</td>
<td></td>
</tr>
<tr>
<td>S.2</td>
<td>Medical students</td>
<td>The number students who are enrolled in medical programs as a proportion of all students in the medical school (Headcount).</td>
<td>MDANZ/Department of Education</td>
<td></td>
</tr>
<tr>
<td>S.3</td>
<td>Postgraduate students</td>
<td>The number of domestic and international postgraduate students as a proportion of all students in the medical school (EFTSL).</td>
<td>Department of Education</td>
<td></td>
</tr>
<tr>
<td>S.4</td>
<td>Mature age students</td>
<td>The proportion of students enrolled in the medical school who are mature age (30 years or more).</td>
<td>Department of Education</td>
<td></td>
</tr>
<tr>
<td>S.5</td>
<td>PT students</td>
<td>The proportion of students enrolled in the medical school who are part-time.</td>
<td>Department of Education</td>
<td></td>
</tr>
<tr>
<td>S.6</td>
<td>Low SES students</td>
<td>The proportion of students enrolled in the medical school who come from low socio-economic status (SES) (% of cohort).</td>
<td>Department of Education</td>
<td></td>
</tr>
<tr>
<td>S.7</td>
<td>Regional students</td>
<td>The proportion of students enrolled in the medical school who come from regional/remote areas.</td>
<td>Department of Education</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Code</td>
<td>Indicator label</td>
<td>Indicator detail</td>
<td>Data source</td>
</tr>
<tr>
<td>---------------------</td>
<td>------</td>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>R.1</td>
<td>Research pubs/academic</td>
<td>The ratio of academic weighted research publications to academic staff.</td>
<td>SciVal/Department of Education</td>
</tr>
<tr>
<td></td>
<td>R.2</td>
<td>Citations/paper</td>
<td>The average number of citations received per publication.</td>
<td>SciVal</td>
</tr>
<tr>
<td></td>
<td>R.3</td>
<td>Research inc/academic</td>
<td>The ratio of NHMRC research income per academic staff</td>
<td>NHMRC/Department of Education</td>
</tr>
<tr>
<td></td>
<td>R.4</td>
<td>HDR students</td>
<td>The proportion of students in the medical school who are in higher degree research.</td>
<td>Department of Education/ucube</td>
</tr>
<tr>
<td></td>
<td>R.5</td>
<td>Grads in FT study</td>
<td>The proportion of graduates in further full-time study as reported by the Australian Graduate Survey.</td>
<td>Graduate Careers Australia</td>
</tr>
<tr>
<td><strong>Knowledge exchange</strong></td>
<td>K.1</td>
<td>Co-pub with industry partners</td>
<td>The number of publications with both academic and corporate affiliations as a proportion of all publications.</td>
<td>SciVal</td>
</tr>
<tr>
<td></td>
<td>K.2</td>
<td>Grads in FT work</td>
<td>The proportion of graduates in full-time employment as reported by the Australian Graduate Survey.</td>
<td>Graduate Careers Australia</td>
</tr>
<tr>
<td><strong>International orientation</strong></td>
<td>I.1</td>
<td>Intl students</td>
<td>The proportion of students enrolled in the medical school who are international.</td>
<td>Department of Education</td>
</tr>
<tr>
<td></td>
<td>I.2</td>
<td>Staff with overseas quals</td>
<td>The proportion of academic staff that obtained their highest qualification overseas.</td>
<td>Department of Education</td>
</tr>
<tr>
<td></td>
<td>I.3</td>
<td>Intl co-authorship</td>
<td>The proportion of total research publications that have at least one international co-author.</td>
<td>SciVal</td>
</tr>
</tbody>
</table>
5.4.1 Teaching and learning

The ‘university’, as we know it, has existed to add to our knowledge of the world and of the people in it, and to disseminate that knowledge, through teaching and publication (Biggs & Davis, 2002). In the modern world, dissemination of this knowledge through teaching includes all forms of processes to transmit knowledge, skills and values to learners. Hence, teaching and learning is an important, if not core, aspect of any university.

As higher education expands to include more and different learners, asserting learner outcomes become increasingly important. Internationally, there are a growing number of frameworks and projects on assessing and reporting student learning outcomes (Coates & Mahat, 2014), including the Organization for Economic Co-operation Development’s (OECD) Assessment of Higher Education Learning Outcomes (AHELO) (Coates & Richardson, 2012); the Tuning Project (Tuning, 2010); Valid Assessment of Learning in Undergraduate Education (VALUE) Rubrics (AAC&U, 2013); Higher Education Quality Council of Ontario’s (HEQCO) generalization of the Tuning degree profiles (HEQCO, 2013) and the Australian Qualifications Framework (Department of Education and Training, 2015b).

Whilst not a new concept, initiatives to assess and report on student learning outcomes are still quite novel and uncertain—with maturity of perspectives, developments and practices varying significantly across higher education systems (Coates & Mahat, 2014). There is an increasing trend in assessing medical education outcomes to focus on graduates’ competencies (see examples of ACGME, 2005; ACCLAiM, 2015; AMA, 2010; CPMEC, 2008; Edwards, Wilkinson, Canny, Pearce, & Coates, 2014; NFU, 2009; Van der Vleuten et al., 2004). Whilst there are a number of such programs in Australian medical education, for example the Australian Medical Assessment Collaboration (Edwards et al., 2014) and Australian Collaboration for Clinical Assessment in Medicine (ACCLAiM, 2015), results of such exercises are either incomplete (not available for all medical schools) or not available for public access.
A combination of indicators was sought in order to reflect performance in the teaching and learning dimension. In the absence of valid and reliable learning outcomes indicators, data elements in this dimension include an input indicator of the number of academic (teaching and teaching/research) staff in the medical school as a proportion of academic staff in the institution, process indicators of staff to student ratio, and retention rate. As mentioned in chapter two, some have argued that the true cost of teaching should include honorary staff but total numbers for each medical school was not available. Output indicators in the form of quality indicators are sought from student and graduate assessments of their learning experience. These were derived from items in the Student Experience Survey (SES), previously known as the University Experience Survey, and Course Experience Questionnaire (CEQ).

**Academic staff**

As an input indicator, the proportion of full-time equivalent academic (teaching and teaching/research) staff can be seen as a proxy measure for the quality of learning. The higher the labour resource available for teaching it is argued, the higher the quality of learning (Cave, 1997). Medical schools may invest in more academic staff in order to position themselves as a better quality institution. To take into consideration scale, this indicator is taken as a proportion of all academic staff in the university.

**Staff/student ratio**

Simply put, this ratio is the number of academic staff to student. While it can be considered good to have a high proportion of academic staff, the quality of learning may be compromised by the number of students in the medical school. A high proportion of academic staff relative to the number of students means that students may get more attention in the learning process. Subsequently, a high ratio may mean a better quality outcome for students’ learning.

**Retention rate**

Retention rate is the ability of the medical school to retain a student from admission through graduation. The onus of retention is on the institution and as a measurement of education performance, the retention rate can assess the ability of the institution to provide a conducive environment for students as they progress to graduation.
**Quality of teaching**

The student perceptions of the quality of teaching can be considered as conceptually closer and to an extent, more realistic to the judgements of external parties. This is reported in the Student Experience Survey (SES), which provides current students in Australia the opportunity to voice their opinion about their higher education experience.

**Quality of educational experience**

As above, students’ perception on the quality of the overall educational experience provides evidence of the quality of the learning experience acquired during the course of study. A better quality educational experience suggest the level of resources an institution has invested to position itself as an institution of excellence in teaching and learning. Similarly, this is reported in the Student Experience Survey (SES).

**Overall satisfaction**

The satisfaction of students on their overall experience at the medical school post-graduation reflects the quality of teaching and learning. Having graduated from the degree (and in most cases out in the real world), graduates are better able to appreciate the quality of the teaching and learning they have experienced as students. They may compare experiences with other graduates (from the same or different institutions) and better able to reflect on their experiences. This is reported through the Course Experience Questionnaire (CEQ) as part of the Australian Graduate Survey (AGS).

### 5.4.2 Student profile

The student profile dimension is composed of indicators that offer insights into the diversity of students at each medical school. It can be argued that the nature and positioning of institutions and hence medical schools can be partly determined by its student body. The student profile dimension consists of seven characteristics which could define the profile of the student body: postgraduate students, mature-age students, part-time students, low socio-economic status (SES) students, regional students, medical students, and the overall size of the student body.
Postgraduate students

As more medical schools move into a graduate medical program, the number of postgraduate students provides an indication of the positioning of medical schools in terms of its program. Additionally, the number of postgraduate students may also provide an indication of the level of commitment of medical schools have to continued knowledge transfer and capacity development for the future.

Mature age students

The average age of the student body and its distribution is an important element of the student profile of an institution. A mixed age profile may provide a different educational experience than a predominantly young student body. In the context of lifelong learning, a large proportion of mature students can be used as an indication of a medical school’s position in terms of its student profile.

Part-time students

Part-time programs are a distinct characteristic of the way program are offered to students. An institution that has relatively many part-time students is likely to have a specific attitude to its environment and its stakeholders, and is likely to offer special ways to enrol in its programs. It is noted that students enrolled in a medical program are predominantly full-time. Consequently a part-time student profile would indicate a medical school with a variety of other undergraduate and postgraduate programs.

Low SES students

An equity indicator, the number of low socio-economic status (SES) students within medical schools provides an indication of the institution’s commitment to supporting students from low socio economic background. An institution with higher proportion of low SES students may provide resources and infrastructure beyond what it normally does. The educational experience of students may also be different as a result of a higher proportion of low SES students.

Regional students

Medical education has had a long history of regional and rural focus with funding
to match this emphasis. A high proportion of regional students may reflect the position the medical school takes in terms of its student profile.

**Size of student body**

In addition to the composition of the student body, the overall size of the student body may also have an impact on the learning experience. The information gathered is the Effective Full Time Student Load (EFSTL) of students enrolled in all types of programs, in addition to the medical program, within the medical school.

**Size of medical programs**

The size of the medical programs provides an additional indication of the learning experience within the medical programs. This is measured by the number of students (headcount) enrolled in the medical program as a proportion of all students in the medical school.

### 5.4.3 Research

In Australia, where all universities are involved in research, this dimension is seen as a significant activity for any medical school. The research involvement dimension focuses on institutions’ participation and contribution to research. Research is defined broadly as both basic and applied research undertaken to increase the stock of knowledge and the use of this stock of knowledge to devise new applications. Research indicators can be distinguished into output, outcome and impact indicators. Output and outcome indicators are more prevalent in research. Data on impact indicators, particular ones which demonstrate contribution that excellent research makes to society and the economy, are more contentious and hence less available.

Research publications—often seen as the single most important research output of universities—is provided here alongside input indicator of research income and impact indicator of citations. Other research indicators include the proportion of students who are research postgraduates and the proportion of graduates from the medical school who go on to full-time further study.
Research publications
The ratio of weighted research publications per academic staff provides an indication of the scale of research output within the medical school. In Australia, all research publications are weighted for authorship and publication type: books, book chapters, journal articles and conference publications.

Citations
There has been widespread use of bibliometric indicators such as citations index, in the past ten years. They can be considered more valid measures for the output or productivity of research teams and institutions. The measure of citations per academic, quantifies both the usage and impact of the cited work.

Research income
An input-related proxy, research income indicators are used to describe the research taking place in a particular institution or unit. Here, the research income is derived from the National Health and Medical Research Council (NHMRC) and is reported as a ratio to academic staff.

HDR students
The proportion of students in higher degree research (HDR) provides an indication of the medical school’s commitment to research. A higher proportion of HDR students may reflect the position the medical school takes in terms of its research activities.

Graduates in full-time study
Graduates in further full-time study provides an indication of a university’s strategy to position itself as a high quality postgraduate training centre, which offers students a superior study and research environment. Taken from the Australian Graduate Survey (AGS), this indicator measures the proportion of graduates who completed their degree program in the previous year who proceeded to further full-time or part-time study.
5.4.4 Knowledge exchange

Knowledge exchange is defined as the process by which the knowledge, expertise and intellectually linked assets of higher education institutions are constructively applied beyond higher education for the wider benefit of the economy and society, through two-way engagement with business, the public sector, cultural and community partners (Holi, Wickramasinghe, & Van Leeuwen, 2008). Knowledge exchange seeks to organize, create, capture or distribute knowledge and ensure its availability for future users. This link between the production of knowledge (through research) and the utilization of this knowledge in the wider society has become a crucial element of the role of higher education institutions in the knowledge society.

Despite the increasing importance being placed by governments, funding bodies and individual universities to the role of knowledge exchange most attention has been devoted to measuring Technology Transfer activities, which is primarily concerned with the management of intellectual property (IP) produced by universities (O’shea, Allen, Chevalier, & Roche, 2005). The broader nature of knowledge transfer compared to technology transfer also means it includes other channels of transfer than those requiring strong IP protection, including texts (for instance, scientific, professional and popular), people (including students and researchers), artefacts (including equipment, protocols, rules and regulations), and money (van Vught & Ziegele, 2011). Unfortunately, many knowledge exchange indicators are still in their infancy and hence not clearly defined, or do not have comparable data, and focus on input, rather than output or outcome. For the purpose of this study, only two indicators were included as part of this dimension.

Co-publication with industry partners
Defined as the proportion of publications which have been co-authored with one or more industry partners, the indicator reflects successful research cooperation and other research-related connections with the business sector. This data is sourced from the SciVal database.

Graduates in full-time work
The employability of graduates can be measured by the proportion of graduates in full-time work. It reflects the ability of the institution to transfer knowledge for economic,
social and cultural development through successfully placing graduates in the workforce. This data is derived from the Australian Graduate Survey.

### 5.4.5 International orientation

A final dimension in the profiling tool is the international orientation of the university. The rise of globalisation and the increasingly ‘borderless’ initiatives (such as the Bologna process) have put growing pressures on universities to respond to trends and develop an international orientation in their activities. Internationalization is particularly relevant to Australia as it is the world’s fourth most popular destination for international tertiary students, behind the United States and the United Kingdom, with France now inching in the top three (UNESCO, 2014). One in every five students in Australian universities is an international student (Norton, 2014). As an industry, international education generates nearly $15 billion in exports annually and supports around 127,000 jobs, 88,000 of which are outside the education sector (Universities Australia, 2013).

Internationalization activities can be categorised into three types of activities: to develop and promote international mobility of students and staff, develop and enhance international cooperation, and develop and increase international competition (Teichler, 2004). Many indicators of internationalization have been identified (Brandenburg & Federkeil, 2007; Enquist, 2005; Gao, 2015) but for the most part focus on inputs and processes. The outcomes and impacts of internationalization activities are not very well covered by existing internationalization indicators. Three indicators of internationalization are included here.

**International students**

The most common measure of internationalization, the proportion of international students in the medical school, indicates the extent to which the medical school position itself as an international university. Performance in this measure would reflect the medical school’s commitment in setting aside resources in providing infrastructure and resources to attract and retain international students.
**Staff with overseas qualifications**

This indicator is defined as the proportion of academic staff that obtained their highest qualification overseas. With the increased importance of internationalization of curriculum and the high number of international students, the medical school’s efforts in attracting academics of high calibre from diversified qualifications, reflect the medical school’s commitment to internationalization.

**International co-authorship**

Defined as the proportion of publications of the unit which have been co-authored with one or more international collaborators, the indicator reflects successful research cooperation and other research-related connections with higher education and research institutions overseas. This data is also sourced from the SciVal database.

### 5.5 Summary

This chapter provided an overview of the dimensions and indicators to be utilised in the profiling tool. The profiling tool, adapted from the Australian University Profiles, provides insights via dimensions of teaching and learning, student profile, research, knowledge exchange, and international orientation. Each of the five dimensions and indicators within them were established and validated through previous work (Coates et al., 2013; Mahat et al., 2014; van Vught et al., 2010), and through the current study. Porter’s five forces framework, discussed in the preceding chapter, and the profiling tool, discussed in the current chapter, serve as conceptual and analytical frameworks to guide analysis of case studies of Australian medical schools. The case study approach and methods will be discussed in the next chapter.
Chapter 6

Design and method of investigation

6.1 Introduction

The preceding chapters have presented the background to this research and the conceptual and analytical frameworks which will guide its analysis. This chapter outlines the underlying assumptions, rationale and design of the study. It begins with an account of the qualitative case study approach selected for this investigation, followed by how participants and medical schools were selected, and finally how data was collected and analysed.

6.2 Research design

Because the nature of strategy in higher education is complex and highly abstract, a case study approach was used as this allows for the collection of rich data which can capture the complexity and detail of the construct under study. This section describes the case study approach. Following this, the next subsection discusses the research design that has been adopted for the selection of participants and medical schools, the methods for data collection and other methodological considerations.

6.2.1 Case study approach

Case study approach is a method that facilitates exploration of a phenomenon within its context using a variety of data sources. It is a research strategy which focuses on understanding the dynamics present within single settings (Eisenhardt, 1989). This ensures that the issue, in this case strategic positioning in higher education, is explored through a variety of lens that further allows for multiple facets of the phenomenon to be revealed and understood. Case studies can involve a single or multiple cases, numerous and/or multiple levels of analysis (Yin, 1984) and typically combine data collection methods that are quantitative, qualitative, or both (Eisenhardt, 1989). They are used to provide description (Kidder, 1982), facilitate theoretical development (Flyvbjerg, 2004; Schwandt, 2001; Yin, 1994), and test theory (Anderson, 1983; Pinfield, 1986).
There are a number of rationales for adopting the case study approach in this study. First, it allows for an in-depth analysis of strategic positioning in higher education, a phenomenon that is inadequately understood, as articulated in chapters three and four, particularly within the Australian context. Adopting a case study approach will enable the generation of rich details and vivid descriptions to understand and facilitate theoretical development, in this case the relationships between strategy formulation and environment in medical education.

Second, the case study approach offers a method which actively includes the importance of situational context. It stresses “a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident” (Yin, 1984, p. 13). It involves the detailed examination of a unit of analysis, usually within its real life context at a specific and bounded (in time and place) instance (Schwandt, 2001). Adopting a case study approach in this study enables the interpretation of how medical schools develop strategy and position themselves in a highly regulated professional field.

There are some disadvantages of the case study approach, including the requirement for careful management to avoid excessive collection of information (Merriam, 1988), generation of context-specific practical knowledge which is either of limited use or lack generalizability (Flyvbjerg, 2004; Schwandt, 2001; Yin, 1989), and the lack of reliability and validity (Schwandt, 2001; Yin, 1993). However, many of the criticisms of the case study approach are not shortcomings inherent in the methodology itself, but rather issues that can be addressed depending on how the study is designed (Flyvbjerg, 2004). This study has been designed to incorporate both a broad picture of strategic positioning in higher education as well as in depth analysis of six case studies of medical schools. Specifically, the shortcomings will be addressed as described below.

In designing the case study, it is important to consider what type of information would need to be collected in order to answer the research questions and to minimise excessive information with respect to the overall aims of the study. In line with the literature and the conceptual framework, key points for the study were strategy and the external environment. The interview questions were theory- and literature-driven.
Additionally, interviews were conducted within the correct timespan until saturation was reached, which is the point at which no new themes are observed in the data or when the same ideas keep re-occurring from participants (Miles & Huberman, 1994). In this study, saturation was seen as occurring when interviews consistently revealed much of the same material with respect to strategy formulation in the context of medical schools.

This study will rely on multiple sources and examples of evidence (Corbin & Strauss, 2008; Yin, 2003). This includes semi-structured face-to-face interviews which form the primary source of information, and website inspection and collection of institutional data which form part of the secondary data sources. Data is converged in a triangulating fashion to confirm the construct validity. Additionally, the research will maintain a chain of evidence, which provide links to the case study protocol and questions, as well as attempt to have participants confirm and respond to the final findings.

Internal validity is of concern to most researchers, particularly in situations when an inference to some earlier occurrences is required every time an event cannot be directly observed (Yin, 2003). In efforts of explaining strategy formulation in medical schools, pattern matching, i.e. a method for linking data to propositions by using a ‘score sheet’ (Campbell, 1975), will be used to code the transcripts. Additionally, explanation building will be used in this study to elucidate causal conclusions about the strategy formulation in medical schools (Yin, 2003). Internal validity will also be achieved by displaying illustrations and diagrams in the data analysis phase, to assist explanation building (Miles & Huberman, 1994). Internal coherence of findings in the data analysis phase will be assured by cross-checking the results (Yin, 1994). There is an intention that the results may generalize to other situations (Stake, 1994).

External validity is important in ensuring that findings are generalizable beyond the immediate individual case (Yin, 2003). This study will follow a set of systematic procedures developed from two pilot interviews to define the boundaries and scope of the research design in order to achieve reasonable analytical generalizations (Marshall & Rossman, 1989). Subsequent interviews were used to test the revised procedures in efforts to replicate the same procedures in gathering of data and information. Additionally, the results will be compared with the extant literature in the data analysis phase, to clearly
outline contributions and generalise those within the scope and boundaries of the research (Yin, 1994).

The objective and goal of reliability is to allow researchers to arrive at the same findings and conclusion following the same described procedures and to minimise the errors and biases in a study (Yin, 2003). Reliability within this study will be maintained by presenting a full report of the data collection protocol, which will include the overview of the case study approach, interview protocol including interview questions, the interpretation framework and the creation of a case study database. It is also acknowledged that as the case study approach is bounded by the individual, the institutions, the context and the time, and consequently, replicated case studies may not be viable (Schwandt, 2001).

In summary, tests of validity and reliability as described above have been applied to this study. These tests will ensure that not only the reliability and the validity of the data as well as findings are maintained but it will also ensure that they address some of the shortcomings of the case study approach. Given the nature and focus of this study, it is concluded that the case study approach is appropriate for this study.

### 6.2.2 Sampling and selection

A number of criteria were used to select medical schools and participants. Both purposive sampling and snowball sampling methods were utilised to identify and sample cases. Purposive sampling refers to sampling of cases through the use of judgement, either because there is a deliberate effort to include presumably typical groups in the sample or when there is limited number of people that have expertise in the area being researched (Kerlinger, 1986). Snowball sampling or also known as chain referral sampling is a method which yields a study sample through referrals made among people who share or know of others who possess specific characteristics (Biernacki & Waldorf, 1981). In both cases, samples are not random but meet the overall objective of this research, which is to provide an in-depth understanding of the relationships between strategy formulation and environment in selected medical schools.
The purposive sampling method was used for selecting medical school cases in order to capture the variation that was likely across the higher education sector in Australia (Maxwell, 1996). Australian universities are and have been grouped in many different ways, by legislation (see TEQSA Act, (Commonwealth of Australia, 2011)); by virtue of membership in specific self-defined university groupings/affiliations, for example, the Group of Eight (Go8), Australian Technology Network (ATN), Innovative Research Universities (IRU) and Regional Universities Network (RUN); or by some form of characteristics deemed useful and/or convenient by researchers in higher education (see examples of Harman, 2001; James, Baldwin, & McInnis, 1999; Marginson & Considine, 2000; Meek, 2002).

There are currently 18 medical schools in Australia (MDANZ, 2015a), located within Australia’s universities, of which there are 40 (TEQSA, 2015). Table 8 provides the list of medical schools. Medical schools in Australia are confined predominantly to older institutions because of strong resistance to other institutions entering these fields from government and professional associations (Meek & O’Neill, 1996). As can be seen from Table 8, all the Go8 universities and three IRUs are represented. The youngest universities—Bond, Notre Dame, and Western Sydney—do not belong to any formal university groupings. The University of New England is a regional university but its joint medical program is affiliated with the University of Newcastle.
Table 8: List of medical schools

<table>
<thead>
<tr>
<th>No.</th>
<th>Institution</th>
<th>University grouping</th>
<th>University established</th>
<th>Medical school commenced</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Australian National University</td>
<td>Go8</td>
<td>1946</td>
<td>2004</td>
</tr>
<tr>
<td>2</td>
<td>Bond University</td>
<td>-</td>
<td>1989</td>
<td>2006</td>
</tr>
<tr>
<td>3</td>
<td>Deakin University</td>
<td>-</td>
<td>1974</td>
<td>2008</td>
</tr>
<tr>
<td>4</td>
<td>Flinders University of South Australia</td>
<td>IRU</td>
<td>1966</td>
<td>1974</td>
</tr>
<tr>
<td>5</td>
<td>Griffith University</td>
<td>IRU</td>
<td>1971</td>
<td>2005</td>
</tr>
<tr>
<td>6</td>
<td>James Cook University</td>
<td>-</td>
<td>1970</td>
<td>2000</td>
</tr>
<tr>
<td>7</td>
<td>Monash University</td>
<td>Go8</td>
<td>1958</td>
<td>1961</td>
</tr>
<tr>
<td>8</td>
<td>The University of Melbourne</td>
<td>Go8</td>
<td>1853</td>
<td>1862</td>
</tr>
<tr>
<td>9</td>
<td>The University of New South Wales</td>
<td>Go8</td>
<td>1949</td>
<td>1961</td>
</tr>
<tr>
<td>10</td>
<td>The University of Newcastle</td>
<td>IRU</td>
<td>1965</td>
<td>1978</td>
</tr>
<tr>
<td>11</td>
<td>The University of Notre Dame Australia (Fremantle/Sydney)</td>
<td>-</td>
<td>1989</td>
<td>2005/2008</td>
</tr>
<tr>
<td>12</td>
<td>The University of Queensland</td>
<td>Go8</td>
<td>1909</td>
<td>1936</td>
</tr>
<tr>
<td>13</td>
<td>The University of Sydney</td>
<td>Go8</td>
<td>1850</td>
<td>1883</td>
</tr>
<tr>
<td>14</td>
<td>The University of Tasmania</td>
<td>-</td>
<td>1890</td>
<td>1965</td>
</tr>
<tr>
<td>15</td>
<td>The University of Western Australia</td>
<td>Go8</td>
<td>1911</td>
<td>1957</td>
</tr>
<tr>
<td>16</td>
<td>The University of Western Sydney</td>
<td>-</td>
<td>1989</td>
<td>2007</td>
</tr>
<tr>
<td>17</td>
<td>The University of Wollongong</td>
<td>-</td>
<td>1951</td>
<td>2007</td>
</tr>
<tr>
<td>18</td>
<td>University of Adelaide</td>
<td>Go8</td>
<td>1874</td>
<td>1885</td>
</tr>
<tr>
<td></td>
<td>University of New England(^\text{5})</td>
<td>RUN</td>
<td>1954</td>
<td>2008</td>
</tr>
</tbody>
</table>

Source: Various medical schools’ websites

\(^5\) Medical Program offered jointly by the University of Newcastle and the University of New England.
The 18 medical schools were listed in order of preference, in order to gain a range of perspectives from across the medical school sector in Australia. The deans of the first six medical schools were invited to participate in the study. Two declined to participate, and hence an additional two invitations to participate were sent to the deans of the next two medical schools on the list. A profile of the medical schools and universities is provided in Table 9.

Table 9: Profile of universities and medical schools

<table>
<thead>
<tr>
<th>Age of university</th>
<th>N = 6</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 50 years</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>50 – 70 years</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>Above 70 years</td>
<td>2</td>
<td>33%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of university</th>
<th>N = 6</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (Under 25,000 students)</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Medium (25,000 – 45,000 students)</td>
<td>4</td>
<td>67%</td>
</tr>
<tr>
<td>Large (Above 45,000 students)</td>
<td>2</td>
<td>33%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age of medical school</th>
<th>N = 6</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 10 years</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>10 – 50 years</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>Above 50 years</td>
<td>2</td>
<td>33%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Size of medical school</th>
<th>N = 6</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (Under 500 students)</td>
<td>1</td>
<td>17%</td>
</tr>
<tr>
<td>Medium (500 – 1000 students)</td>
<td>2</td>
<td>33%</td>
</tr>
<tr>
<td>Large (Above 1000 students)</td>
<td>3</td>
<td>50%</td>
</tr>
</tbody>
</table>

Once consent to participate were received, the deans were also asked, via snowball sampling, to nominate key staff to participate in the study, in particular, those with specific responsibility in one or more of the following areas: teaching and learning, research, and management; and have a comprehensive understanding of the complexities associated with medical schools. As per the ethics protocol, potential participants were emailed an
Participation in the study was voluntary for all staff.

A total of 21 interviews were carried out within the six medical schools. Each participant and medical school was allocated a code in order to protect the anonymity and privacy of participants for subsequent analysis of the data. A profile of staff interviewed is provided in Table 10.

### Table 10: Profile of participants

<table>
<thead>
<tr>
<th></th>
<th>N = 21</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
<td>38%</td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>62%</td>
</tr>
<tr>
<td><strong>Function type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>19</td>
<td>90%</td>
</tr>
<tr>
<td>Professional</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Position type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heads/Deans of medical schools</td>
<td>6</td>
<td>29%</td>
</tr>
<tr>
<td>Clinical Deans</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Heads of others schools/departments</td>
<td>3</td>
<td>14%</td>
</tr>
<tr>
<td>Associate Dean or similar (with specific responsibility)</td>
<td>3</td>
<td>14%</td>
</tr>
<tr>
<td>Professors/Chairs</td>
<td>5</td>
<td>24%</td>
</tr>
<tr>
<td>Senior lecturer</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Professional staff</td>
<td>2</td>
<td>10%</td>
</tr>
</tbody>
</table>
6.2.3 Data sources

This study uses three specific data sources: semi-structured interviews, quantitative data gathered for the visual profiling tool, and websites. These will be discussed in turn.

**Semi-structured interviews**

The research was inductive in that it sought to examine the relationships between strategy formulation and environment from the perspective of staff from medical schools. The interviews were semi-structured and face-to-face to allow participants to elaborate further and to observe the body language of participants (Minichiello, Aroni, Timewell, & Alexander, 1995; Richards & Morse, 2013). The interviews focus on using questions developed to guide instead of control responses, and all questions were asked in an unbiased, friendly and non-threatening manner to allow participants to provide meaningful commentary about the topic (Yin, 2003), and allow the participants to convey their views, experiences, and ‘heart of the stories’ that are valuable and useful for subsequent interviews (Marshall & Rossman, 1989; Seidman, 2006). As such, the subsequent interviews continued to verify preceding interviews findings and the interviews evolved consistently as concepts and themes emerged (Corbin & Strauss, 2008).

There are some limitations to the interview process, for instance participants may omit important details and view situations through distorted lenses (Bauer & Gaskell, 2000). Additionally, Seidman (2006) argues that the interview process takes a lot of time and money because the researcher has to conceptualise the research project, establish access and build rapport through contacting participants, followed by interviewing, transcribing of data and analysing the material before sharing what has been learned. However, he also advocated that the adequacy of a research method depends on the purpose of the research and questions being asked. Furthermore, the interview methods and results need to be validated to address the limitations of the interview process.

The interview questions have been developed based on the literature and the conceptual and analytical frameworks that is intended to answer the research questions developed in chapter one. As noted earlier, internal validity rests on the alignment of the questions to the problem at hand. In the first phase, an interview protocol was devised and
tested on two pilot participants. These pilot interviews allow the interview schedule to be re-designed in the light of the participants’ comments and the interviewer’s observations regarding lack of clarity, logical order, and precision of the questions. Two pilots were also necessary to ensure against one individual exception or fluke. The data from the pilot study are not reported here since the interviews were only provisional.

Appendix C provides the interview protocol used for the semi-structured interviews. The questions on the schedule were theory- and literature-driven in that they aimed to investigate the key research questions directly. Questions 1a to d intend to allow participants to describe the strategic position or the distinctiveness of the medical school. Questions 2 a to c intend to let participants express how the visual profiling tool could be used to inform strategy formulation in medical schools. Finally, questions 3a to f intend to elicit responses from participants around how strategy formulation within the medical school is affected by the external environment.

Not all the questions are intended to translate the participants’ views into specific response categories, instead the questions were designed as an invitation to allow participants to talk at length at their own terms and with time for reflection, if need be (Bauer & Gaskell, 2000). Rapport, including trust and confidence, need to be built between interviewer and participants in order for the participants to feel comfortable and to be frank and elaborate further on the topic (Corbin & Strauss, 2008).

Each interview was conducted by the same person in the participant’s office, and lasted between thirty to sixty minutes. The interview began with casual conversation to establish rapport. The participant was given a hard copy of the plain language statement and asked to sign a consent form. At the end of the interview participants were asked if there was anything they wanted to add that had not been covered. The interviews were audio-recorded for transcription and analysis purposes with permission from the participants.

The rationale for interviewing is the assumption that the views of medical school staff about strategy formulation are meaningful and can be made explicit. In short, the qualitative data collected through the semi-structured interviews intend to describe
the relationships between strategy formulation and environment within the context of medical schools.

**Visual profiling tool**

The profiling tool developed and described in detail in the previous chapter, consists of five dimensions of activities of teaching and learning, student profile, research involvement, knowledge exchange, and international orientation, with 23 indicators underpinning them. An initial list of indicators, drawn from the literature and rankings database, was sent to experts in higher education. The selection of the final indicators involved an iterative and expert review driven process based on practical, technical and substantive criteria. Chapter five provided a thorough discussion of this.

Data was collected to populate the indicators in the profiling tool through publicly available sources as described in the previous chapter. The visual maps for each medical school as well as for the median medical school were presented at each interview to elicit participants’ views on how the visual representation of a medical school’s positioning could be used to inform strategy formulation in medical schools. The tools were also used as a resource when analysing the performance of medical schools in particular area of activities as articulated from participants’ responses about the distinctiveness of the medical school as compared to others.

**Websites**

The most important usage of data from secondary sources is to corroborate and augment evidence from other sources (Yin, 2003). Information from the websites of medical schools were drawn to verify the spelling of titles, names of people and organizations, provide other specific details, and for the researcher to make inferences unobtrusively and non-reactively (Corbin & Strauss, 2008; Richards & Morse, 2013). As a result, a systematic search for information was undertaken for each of the medical school’s websites prior to interviews. These include information on the medical school (school name, organizational structure, strategic documents, where applicable), staff (names, positions, responsibilities) and programs (course name, length, admission process and criteria, etc.).
Additionally, information was also gathered from the websites through a range of organizations such as government agencies such as Departments of Education and Health; peak bodies such as the Medical Deans Australia and New Zealand (MDANZ) and Association of Australian Medical Research Institutes (AAMRI); and accreditation agencies such as Australian Medical Council (AMC) and Tertiary Education Quality and Standards Agency (TEQSA). These sources provided statistical information on students, staff etc., and information on organizations and programs (names, objectives, history, etc.).

6.3 Research analysis

This section discusses the analysis and presentation of the data. It also offers a discussion on the rigour and trustworthiness of the research analysis.

6.3.1 Data Analysis

As a spiral process of investigation, the distinction between data collection and analysis in qualitative work is vague (Patton, 2002). The analysis and data collection are entangled and nourish one another (Caulley, 1994). Early analysis enables the researcher to re-think about the initial data which may lead to more appropriate questions, and thus create stronger data (Hurworthy, 1996). This form of analysis is vital in doing qualitative work (Caulley, 1994).

Consequently, the analysis of the qualitative research is emergent, with data collection and analysis forming part of an ongoing and interconnected process. Analysis of the data took the form of relatively straightforward thematic analysis. This involved an initial listening of all audio files to first gain an overall sense of the data. These interviews were then transcribed, read and re-read and ‘open-coded’ to produce an initial code list until the analysis had reached theoretical saturation. Although some codes were adapted which directly used the language of the participants, the majority were researcher-led and analytic. From this basis, the data was then selectively coded in terms of categories identified by the initial code list and then directly related to the research questions and corresponding domains in the literature and conceptual and analytical frameworks presented in chapters three, four and five.
The five forces described in chapter four, provides the objective, or structural characteristics, of the environment relevant to medical schools. As well, the subjective perceptions of staff about the objective environment are also important, as they may influence strategy formulation. By focusing on Porter’s five forces of competitive positioning, one can remain ‘outside’ the organization and use objective indicators of the environment, and still be able to consider management’s perceptions of these components (Bourgeois, 1980). Consequently, the analysis of the data considers both the objective environment as well as the perceived environment as crucial inputs to the strategy formulation process.

6.3.2 Presentation of the analysis

There are three findings chapters. These chapters are designed to analyse and discuss findings sequentially, allowing coherent presentation and interpretation of the results. It is logical to adopt such an approach, as the discussion of results that follow the analysis is key in understanding the findings at each stage. This allows each of the research questions proposed in chapter one to be answered more succinctly. In doing so, the discussion attempts to compare and contrast findings with the relevant literature that was reviewed in chapter three, identify aspects that are absent from the current scholarly literature, as well as compare findings to the conceptual and analytical frameworks presented in chapters four and five. In the main, each chapter is divided into two main sections: the results of the qualitative analysis and the discussion of the findings.

In order to accurately present the viewpoints of those being studied, all claims made in the final reports were supported with quotes (i.e. evidence), which also ensured a rich description of the study. The quotes are recorded in italics. Ellipses are recorded within the quotes as a result of a change in speaker (to the interviewer, usually to clarify or confirm discussion), repetitive texts or examples, which have been removed without altering its original meaning, and rarely, to signify within one person’s speech major shifts of topic. Texts in square brackets have been included to either remove identifiable characteristics or indicate to the readers the subject of what was being discussed.
To preserve the anonymity and privacy of participants and medical schools, participants are denoted by P1 through to P21; and medical schools represented by M1 through to M6, as listed in no particular order in Table 11.

Table 11: List of interviews

<table>
<thead>
<tr>
<th>Interview no</th>
<th>Participant code</th>
<th>Medical school code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P1</td>
<td>M1</td>
</tr>
<tr>
<td>2</td>
<td>P2</td>
<td>M1</td>
</tr>
<tr>
<td>3</td>
<td>P3</td>
<td>M1</td>
</tr>
<tr>
<td>4</td>
<td>P4</td>
<td>M1</td>
</tr>
<tr>
<td>5</td>
<td>P5</td>
<td>M2</td>
</tr>
<tr>
<td>6</td>
<td>P6</td>
<td>M2</td>
</tr>
<tr>
<td>7</td>
<td>P7</td>
<td>M2</td>
</tr>
<tr>
<td>8</td>
<td>P8</td>
<td>M2</td>
</tr>
<tr>
<td>9</td>
<td>P9</td>
<td>M3</td>
</tr>
<tr>
<td>10</td>
<td>P10</td>
<td>M3</td>
</tr>
<tr>
<td>11</td>
<td>P11</td>
<td>M3</td>
</tr>
<tr>
<td>12</td>
<td>P12</td>
<td>M4</td>
</tr>
<tr>
<td>13</td>
<td>P13</td>
<td>M4</td>
</tr>
<tr>
<td>14</td>
<td>P14</td>
<td>M4</td>
</tr>
<tr>
<td>15</td>
<td>P15</td>
<td>M5</td>
</tr>
<tr>
<td>16</td>
<td>P16</td>
<td>M5</td>
</tr>
<tr>
<td>17</td>
<td>P17</td>
<td>M6</td>
</tr>
<tr>
<td>18</td>
<td>P18</td>
<td>M6</td>
</tr>
<tr>
<td>19</td>
<td>P19</td>
<td>M6</td>
</tr>
<tr>
<td>20</td>
<td>P20</td>
<td>M6</td>
</tr>
<tr>
<td>21</td>
<td>P21</td>
<td>M6</td>
</tr>
</tbody>
</table>
6.3.3 Rigour and trustworthiness

Silverman (2005) refers to the importance in qualitative research of avoiding anecdotalism or relying upon a few well-chosen examples rather than basing findings on a critical evaluation of the data as a whole. This study avoided this in the following ways.

Verification was an ongoing part of the fieldwork. As Patton (1990) pointed out, observation of the setting gives rise to categories and dimensions that help organize what has been experienced and observed. These emergent concepts and dimensions generated by fieldwork are also, in turn, verified by fieldwork (Patton, 1990) and the rich descriptions of qualitative research allow the reader to understand the complexities of the issues in question.

The rigour of the research was maintained by triangulation of sources. Once participants were interviewed, their various perspectives could be balanced against and used to inform each other. As well, the interview data was verified against contextual factors, information through websites, including data from the government, and the visual profiling tools. Triangulation was not intended to lead to what Patton refers to as a ‘single, totally consistent picture’ as the variety, complexities and ambiguities are considered to be important. However, through the richness and complexity of the data, patterns and meanings can be created. The constant comparative method used in this case study (Silverman, 2005) was also utilized by inspecting and comparing the elements of a case. Member checking (Lincoln & Guba, 1985) was carried out by showing transcripts to those participants who requested it. Further, once analysis had been carried out, a summary report was sent out to participants and their input considered. Finally, some of the findings were presented at international and national conferences and published in refereed journals so the methodology and analysis has been scrutinised by other higher education researchers and practitioners.
6.4 Summary

This chapter has outlined the design and method of investigation employed for this study. It has also addressed the limitations and illustrated the approaches to minimise potential criticisms. The three findings chapters follow immediately. The first findings chapter describes the strategic positions or distinctiveness of medical schools within the Australian system. The second findings chapter reports on the use of profiling tool, in particular how the planning and monitoring of profiles could be used to inform strategy formulation in medical schools. The final findings chapter discusses the ways the external environment affect strategy formulation by medical schools.
Chapter 7

Findings: Strategic positioning of medical schools

7.1 Introduction

This chapter is the first of three chapters presenting the results of the research. The results were derived using methods described in chapter six and present the findings for the first subsidiary research question:

What are the principal dimensions/characteristics on which medical schools can position themselves?

The results in this chapter are organized into themes as derived from a systematic review of the interview data. The chapter concludes with a discussion of the empirical findings.

As described in the previous chapter, the interview data were selectively coded in terms of themes, which are directly related to the aims of the study. Consequently due to the nature of the research question, i.e. to identify differentiating factors which medical schools use to position themselves, the analysis within the themes may vary depending on the perspectives of the participants. This means that while the themes are consistent among participants, there may be variability of discussion within each theme.

7.2 Strategic positioning of medical schools

When asked about the strategic position or distinctiveness of the medical school, participants in four different medical schools discussed the position of each medical school in terms of when it was first established. Of these four medical schools, all were established in the last fifty years, and in the case of the younger medical schools, some of the participants interviewed were present at the time of the establishment.
Consequently, the narrative in the next sub-section focused on the strategic position of medical schools when they were first established and how this mission was and still is articulated in their strategic documents. In subsequent sections, the distinctiveness of medical schools is discussed within eight themes which emerged from the interview data: teaching and learning, student profile, research, knowledge exchange, international orientation, location, size, and age.

### 7.2.1 Mission

At the time of establishment, universities had to position their medical schools distinctively from other already established medical schools (see Table 8 in chapter six for the list of medical schools and their year of commencement). For these new medical schools, it was about performing different activities from other medical schools or performing similar activities in novel ways. Finding a distinctive position requires creativity and insight, which is echoed in a number of responses from participants. As one participant pointed out:

> *We had to have a different strategy to get permission to start a medical school in the first place. We had to offer something different to what was already going on in Australia.* (P4)

Much effort went into the design of medical schools at the time of putting together the initial proposal. Emphases were placed in appraising the external and internal environments of the medical school. Universities had to assess how other medical schools were positioned and what they were offering. As articulated in chapter two, there was strong resistance to other institutions entering medicine and hence new medical schools needed to set out some key strategies, or positions in the “market” which could be defended against existing and future medical schools (Porter, 1996). But far from occupying positions for higher profits, the positioning of medical schools sought to solve issues surrounding medicine and the medical workforce.
We are more committed to the industry—health—that’s our primary motivation in many ways... My motivation, as a leader of the medical school is to make—I use the symbiotic framework—is how can the university be adding value to the health service and to the society...
The primary motivation has to be the service motivation, rather than building a castle or a kingdom. There’s a fairly small tolerance for kingdom rulers in medical education. (P17)

This value to the health service focuses around the health care delivery to patients and to society generally, and according to this participant, unites the interests of those involved in medical education. Value, from this perspective, is not necessarily defined as the health outcomes achieved per dollar spent (Porter, 2010). From a medical school perspective, it is about analysing the contemporary issues surrounding medicine and the medical workforce and filling a gap in the field which was not covered at that time or which may not be sufficiently met by already established medical schools. The issues may be similar but the context for one medical school might differ from another. As one participant pointed out:

We were driven by political imperatives, which was to solve the workforce shortage problem... So I think that's a very different framework from what might have been something that set up a medical school in Sydney in 1842, which would have had the same drivers to create locally trained doctors for an emerging colony that needed to do that. (P6)

Commenting on the latter, this participant also said:

Part of the political arguments there were that those universities that have had 120 years to be involved to solve the problems and they had done nothing but create a mess. There were more problems than ever. For them to put themselves forward as part of a solution to a problem that they had created, it seemed counter-intuitive. There was a genuine political drive from doctors, politicians and the community to say you haven’t provided us with the solution, we’ll look for an alternative solution. (P6)
The environmental assessment may also include a feasibility study and/or an independent review by an external assessor. Once the medical and health care system landscape had been mapped out, medical schools began the process of defining its mission and direction, and developing goals and strategies on various aspects of the medical school. This exercise comprised discussions within the executive team, and guided by the vision of the Vice-Chancellor of the university. As one participant indicated:

_The Vice-Chancellor at the time who set up the course, and was a great supporter of having a medical school in the university, had a deliberate policy of not charging full fees for domestic undergraduate courses in the university, and that still stands._ (P4)

Such act of economic risk-taking can be seen as an entrepreneurial act. Additionally, a sound vision from a visionary leader can help institutions sail cohesively through ‘muddy waters’ particularly in the early years of the medical school. As a result of continuous negotiations between the government and the medical schools at the time of the proposal, leadership tended to play a huge part in the strategic positioning of medical schools. While a visionary leader could provide the intuition, judgement, wisdom, experience and insights, a more influential leader would be better able to negotiate with the environment to better fit their internal capabilities. This will be discussed further in the context of the external environment in chapter nine.

In developing a vision for the medical school, universities had to come up with unique propositions. They had to innovate—introduce something new. These innovations ranged from structure to process to outcomes. In particular, participants from two medical schools (M4 and M6) specifically discussed their innovations, in terms of ‘firsts’ within different aspects of the medical schools.
In the first medical school (M4), participants saw their innovations in terms of their curriculum, medical program, admission criteria, clinical experience and rural focus at the time of establishment as well as through the years. This was summarised by one participant as:

_So I think the things that make it unique is its history of innovation in medical education. So we were the first medical program in Australia to introduce problem based learning. We were the first program to introduce student selection by means other than high school scores. We were one of the first programs to introduce early clinical experience. So we play the pioneering role in admitting Indigenous medical students... We were one of the first medical schools to be based in a metropolitan area that have a rural clinical school... Indeed the medical school was the first one in Australia to be sited in a non-capital city and it was partly put in the city of [omit] because this was a regional area that had under provisioned health care... probably the most unique thing at the moment is the joint medical program with the partnership with two LHDs [local health districts] and two universities._ (P12)

In the second medical school (M6), participants saw its medical school as being a “classic disruptive innovation” (P17)—a notion that innovations within the medical school have improved delivery of medical education that then displaced existing practices. Consequently, this has led to more established medical schools to copy from the younger medical school. One participant described the innovations as follows:

_We were the first medical school that was created as an academic health centre... which was at that time a unique model, and one that tried to maximise the synergies between teaching, research and clinical practice... We were the first school to move to a graduate entry medical program in 1996. We were the first school to graduate students with an MD and along with the [name of University omitted] last year... We were the first to do the year of clinical education in rural community, we started that in '97, the rural clinical school started in 2001 on the basis of our success, and that's_
now a national funding framework... And not only for Australia but we’ve got about 45 medical schools around the world now that are following that curriculum approach. (P17)

Additionally, commenting about its Health Professional Education unit, another participant, at the same medical school, commented:

*I think it’s true that it is becoming a characteristic of [the medical school] that it has maintained an academic unit of health professional education. And I think that’s got a historical dimension and it also has an intent there as well which is that [the medical school] prides itself as a school that is innovative.* (P19)

For all medical schools, the distinctiveness of the medical school is articulated in their mission statements, and/or the initial proposal document to the government, and their accreditation documents to the Australian Medical Council (AMC). Particularly for the younger medical schools, the articulation of these values tended to precede the planning process. Having comprehended and articulated the overall purpose of the medical school, the executive team then began to address the task of planning and setting objectives and strategies. In that sense, the primary purpose of the organization, along with its values and typical features, provide the ultimate principle for further steps to the strategic plan and hence their position within the system.

Participants from two medical schools (M1 and M6) specifically discussed the mission of their individual medical schools as something that sets them apart from other medical schools. Interestingly, both medical schools, one a young medical school and the other of medium term age, still see their mission as being rurally focused. These sentiments resonated in the interviews with all participants in both medical schools.

In the first medical school (M1), participants see their mission as being focused on “the three Rs—rural regional and remote” (P2), which is to “increase or address workforce shortage in rural Australia” (P4). This mission is seen as essentially their “whole reason for being” (P1); and as being “really important…it differentiates us” (P3).
From this medical school’s perspective, serving the rural niche allows them to focus on meeting the needs of that community without compromising their value to the broader healthcare system.

*Our rural is our goal. So when you look at our mission statement rural is in the mission statement.* (P3)

In the second medical school (M6), their focus on rural is articulated in their value for social accountability. Participants see this as a “*strong value statement*” (P17, P18), and one that “*differentiates*” (P17) them from others. As one participant described:

*I think the thing that makes this medical school unique for me to others is... the commitment to the idea of social accountability which has predominantly been expressed through the development of its rural and regional programs and its fostering, I think, of its Indigenous entry into medicine through various programs.* (P19)

As articulated in chapter two, medical schools receiving funding from the Rural Clinical Training and Support (RCTS) program have rural training targets, which include among others, a commitment to have at least 25 percent of all Commonwealth-supported medical students undertake at least one year minimum of clinical training in a rural area. Certainly all medical schools participating in the RCTS program would have already met this target in order to have received the rural funding, but participants at this specific medical school see their commitment as going beyond what is expected, as explained by one participant:

*In terms of its ethos, I think most of the schools have a commitment to rural which [the medical school] certainly has had long before it was required to have... But in fact [the medical school] had a documented history of over that from basically its inception... I think the social accountability framework is more than lip speak here at [the medical school]...I think that it relates to the underlying ethos of [the medical school].* (P21)
A distinctive institutional mission means that within the rubric of medical schools, there would be a range of types of institutions, each with a clearly designated mission and an expectation that each medical school would seek excellence within this designated mission. It would seem that medical schools are attempting to do this, as evident from the above analysis. Medical schools are required, in their proposal to the government, to develop a distinctive approach and position relative to other medical schools, particularly in terms of how it would meet the needs and/or increase value to the broader health care system. These are clearly articulated in the mission of the two younger medical schools. The focus on rural, is not surprising, as the more established medical schools, are predominantly located in metropolitan areas. Consequently, it would seem that the missions of the medical schools (M1 and M6), would have met a need not sufficiently met by other more established medical schools, albeit in different locations. This, in itself, is a differentiating factor for medical schools, discussed further in the sub-section 7.2.7.

7.2.2 Teaching and learning

All the medical schools reported that their individual medical programs and curriculum were different from others. Although the requirements, standards and learning outcomes were set out by the Australian Medical Council (AMC) and the Australian Qualifications Framework (AQF), it seemed the all medical schools were able to position their medical programs in their own unique way. Participants reported distinctiveness of their medical program and curriculum in several different ways.

At M1, for instance, participants commented that their curriculum was characterised by its case-based learning (P3), its longitudinal integrated placement (P2, P3), and the way it has embedded research into its program (P4). For this medical school:

*Our curriculum is unique; we are one of three universities in the world, where all the students do one-year integrated fellowships. (P2)*
Additionally,

*Having a different curriculum was to really be able to bed together the science, the clinical competencies, the personal professional behaviours and also research and critical analysis all together. So they are our four themes that go right through the school from the beginning to the end.* (P4)

As noted in chapter two, since its first introduction of the graduate entry programs in 1996, many other medical schools have adopted this program, particularly with the review of the AQF in 2011 and the move towards the Doctor of Medicine (MD). At M2, the medical school prided itself for retaining the undergraduate program, when so many others have followed suit.

*And the other thing that makes it different is that it’s an undergraduate program rather than postgraduate and I think it’s a good idea.* (P7)

However, the same participant noted that:

*It’s going to stay that way…but I can’t help a sense of inevitability that it will go into the MD.* (P7)

Additionally, another participant at the same medical school described the medical program as being an “experiential immersive model” (P5). This participant attributed the distinctive model to the vision of one its early leaders.

*And that was very much the brainchild of one of the early pioneers, the deputy dean, who has now moved on. That was very much his vision to have and fits into that you know making the workforce for the [name of region omitted].* (P5)

The same participant also credited the ongoing innovations within teaching and learning to the current leadership of the school, who has built a culture of continuous improvements.
I suppose in some of the more traditional or long established medical schools, it’s very difficult to make any curriculum change and innovation because you have to go through so many layers of people. Whereas here it’s been “yeah, why not? Just do it”. You know it’s got some of that [name of region omitted] sense of dynamism being young... And I think that’s also the permissiveness, I suppose, on the part of our dean, our leadership to say “yeah, why not? Give it a go. We don’t have to be like the others. We are different” (P5)

Related to the age of the medical school, the distinctiveness of the medical program at M3 was described by the range of experience that a student receives. This is possible because of the maturity, experience and reputation of the medical school (P10).

And I think the other thing that’s unique is... the range of clinical experience, it’s the range of basic science and also the range of basic science of clinical leaders that our students are exposed to. Leaders in colleges, leaders in basic sciences. You know it’s a very high level experience that our medical students are exposed to. (P9)

Participants at M4 described the length of the program (five instead of six years) (P14) and its focus on “case-based research” (P13) as being distinctive. An added distinction is its joint medical program between two universities and two local health districts, which is the one of its kind in Australia (P12, P14).

In more recent times, we’ve joined with the [name of University omitted]. We have a joint medical program. That really has expanded the scope of our program. (P14)

Apart from being the first to adopt the Doctor of Medicine, one participant at M5 attributed its distinctiveness to the “student centred learning approach” which was transformed from a “didactic type program” and then to a “problem based learning outcome” (P16). Although “science and scholarship” is listed as one of the four graduate outcomes domains (Australian Medical Council, 2012d), one participant also
noted that the way this is incorporated into the program will be different for different medical schools.

_There is a great variation in how they are enacting the research agenda within the course, so typically ours we design respectively to include it. In some courses it’s kind of being altered on and in others it’s similar to us._ (P15)

At the final case study institution, M6, participants saw many of the distinctiveness of its medical program being copied by other medical schools. Consequently, while no longer necessarily unique, participants at this medical school prided themselves for being the pioneers in specific features of the medical program, including the graduate entry program, the yearlong clinical education in rural community, and the introduction of the rural clinical school. Although not the first to introduce the Doctor of Medicine (MD), it also prided itself to be one of the first to graduate a cohort of MD graduates (P17, P21). Additionally, the system-based curriculum was also seen as distinctive when it was first introduced.

_One thing that we did start with, which I think was innovative, right from the start in [year omitted] and has continued, is an integrated approach to curriculum. So the medical school’s curriculum is a systems-based curriculum at a time when most medical schools would still be teaching biochemistry as a topic, physiology as a topic and anatomy as a topic etc., the medical school decided to teach them around cardiovascular system, respiratory system, neurological system._ (P17)

From the case study institutions above, it is interesting to note that the individual features of one medical program may not necessarily be distinctive from other medical programs. This was noted by a number of participants (P3, P5, P7, P9, and P12). As one participant remarked, “_none of these are individually unique_” but when put together “it will be a unique program” (P12). The success of the individual features within medical programs has led to other medical schools emulating in the hopes of having similar successful outcomes. These comments from participants provided some examples of how
medical schools, nationally and internationally, have modelled certain aspects of their curriculum to the success of others:

And of course as you know it was a totally different model of education. Which has kind of morphed into what they call kind of case-based research. And it was amazing when it was first set up, everybody said we were crazy and all this sort of thing. And now everybody sort of copies it. (P13)

And the curriculum that was introduced in the very beginning, problem-based learning curriculum was subsequently purchased and used by other schools both in Australia and internationally. (P21)

7.2.3 Student profile

The diversity of students was also seen by some participants as a factor which sets them apart. Although the total number of students is capped by the government (see chapter two), each medical school can choose to select students in whatever way they choose. The diversity of students can be explained in terms of their location (place of residence), age, disciplines of prior degrees, nationality and backgrounds.

At M1, for instance, their students are characterised by their “capability and the interest to work in rural and regional areas” (P3). While the students can come from different locations and backgrounds, this medical school selects students on the basis of their interest to work in these areas. At another medical school (M2), their students are domestic and from the local geographical area as described by these participants:

We’re very much not a medical school that’s seeking to have a large body of international students. That colours the medical school quite a lot. (P5)
And so another point is students, it represents the demographic of the area in which it resides. Unlike other medical schools which are more, perhaps more selective in some ways, but they are an imported demographic. Whereas the students that we have here are very representative of the people that live out in our area. (P8)

One medical school (M3) typified their students as being older, international and coming from different disciplinary backgrounds. These comments from participants described the diverse composition of their students:

We’ve taken students from diverse backgrounds. So you don’t have to have done science to become a medical student. You can come with a background from law for example, or an engineering degree, or a law degree. We still take you in to do medical training. (P10)

Our students are older and from different backgrounds, for example from Afghanistan… (P11)

Diversity is an increasing objective of the school, and also the university. It’s the diversity of students, but also diversity of staff. So we’re encouraged, in fact, probably lead the university I think in terms of having diversity of students. (P10)

The different disciplinary backgrounds of students were also mentioned by another medical school (M4). Not only do they take students from “non-traditional or non-science-based” (P14) backgrounds, they took pride in the fact that they have contributed to more than half of all Indigenous doctors in Australia.

I would say a distinctive characteristic of our medical program is that we have graduated over 50 percent of all indigenous doctors in Australia. (P14)
Particularly for younger medical schools, student market segmentation is used to gain a foothold in a particular niche; i.e. by identifying an opportunity not directly concentrated on by other more established medical schools. In doing so, medical schools can identify distinct market opportunities and develop a target marketing approach based on clearly defined student segments.

7.2.4 Research

A highly regarded research profile is seen as key to increased reputation and prestige of universities, particularly with the advent of global ranking systems. As one participant puts it:

*It doesn’t matter how you dress it up….a university is driven by its research reputation. You know show me a university that’s renowned for its teaching and only teaching alone and you find that it’s not ranked very high.* (P13)

It is not surprising then that medical schools see research as a factor which differentiates them from others. This is evident particularly from the perspectives of the more established medical schools. For one participant,

*I see another point of difference would be on the emphasis of research so in those three domains of teaching, learning, research and engagement, I think the [University] would see a particular activity in the medical school and internationally competitive component to establish research agenda. And that research agenda is developed on a world platform to compete world-wide and to therefore influence research and the outcomes of research and on a true international scale and that the volume of that work is very large, so that it’s a very large proportion of what we do.* (P15)
Another participant from a not-so-young medical school took pride of the research conducted by the medical school, comparing it to the Group of Eight universities.

We are very much a research focused university. For health and medical research, [the medical school] is about fourth in Australia. So we punch way well above our weight in health and medical research even though we are not part of the Group of Eight...So I think our reputation as a research university is also perhaps a differentiating factor. (P14)

Another participant commented on the history of cross-subsidy of medical research from other parts of the university, although in more recent times, medical schools have had to look for other sources of income.

The university happily did that because it saw that the research that was done within the faculty of medicine contributed very significantly to our position in the rankings. And that would be the same for most medical schools. (P10)

Participants from the younger medical schools acknowledged the lack of research intensity within their medical schools. This was attributed to the significant amount of time and resources focused on the establishment of the medical school. This sentiment was echoed by most of the participants in M1 and M2.

The Graduate School of Medicine was established on a bit of a shoestring and so it has a strong focus on education and not much of a focus on research. (P2)

We don’t have a huge research profile yet in our school so we can’t differentiate ourselves and we can’t compete with [name of medical school omitted] on our research. So I don’t think that differentiates us. (P3)
However, participants also noted this is slowly changing. As the younger medical schools become more established, there is an increased pressure to improve research outputs.

*One more task is to turn [research] round a bit. Otherwise we don’t get the credibility that other schools get because of their research.* (P2)

*The medical school was under pressure to do more medical research because one of the arguments, as I understand from the university’s foundation or board or whatever, to set up a new medical school is that we would be up there doing NHMRC grants and being you know a highly ranked university, so we are under pressure to do that.* (P5)

This comment goes to the underlying motive of Australian universities to establish medical schools. By virtue of having a medical school, it would seem that universities are associated with having more research and hence enhanced reputation and prestige through global rankings. This is almost counter-intuitive to a prior comment made by another participant (P17) about the establishment of medical schools to solve the more noble issues surrounding medicine and the medical workforce (see section 7.2.1). Indeed the same participant commented about this inherent tension between its current mission and the increasing focus on research intensity.

*Socially accountable and research intensive which is a difficult space to negotiate in some ways because often the decisions you make in terms of your own social accountability are not the decisions you would make if you were only purely playing the numbers game in research.* (P17)

This tension is further articulated by another participant. In reflecting between mission and research, this participant found that the medical school had its primary motivation, first and foremost, on research.

*One of the interesting things was that when we were debating right at the beginning the mission statement for the medical school, the two issues that*
came up was producing good doctors and the second one was research. And the question was in the sense which came first? (P7)

Participants also commented on the specific research focus areas, which make their medical schools distinctive from others. For instance, a participant from an established medical school commented:

They’d say it’s our world class research and you know recently we defined that has having particular strengths in areas of neuroscience, in the areas of cancer, having children health, and around microbiology and knowledge, but not limited to those. (P15)

Although not a national priority area, a number of medical schools (M1, M2 and M6) prided themselves on having a research focus on medical and health education. For instance:

I think that’s what sets [the medical school] apart. In terms of medical education research, certainly the link between theory and practice. And I think that’s something that it shares with only a few centres in the world. (P18)

The choice of which research areas to focus on can be attributed to two factors: leadership and individual researchers. At one medical school, for instance, leadership is seen as a factor which drives medical schools to conduct research in specific areas.

It was strategic in some way in that the initial leadership in the school. So particularly, the deputy dean had a background in education and health education, and so he set up the principles to pursue this line and actually been picked up by some of us, the more traditional bench scientists, so we’re doing both now. (P4)
At two other medical schools, the research has been driven by individual researchers, as commented by participants:

*I still think it’s very much investigative driven. There’s a lot of talk about what you talk about but I think the implementation is pretty difficult. And I think even the government has to drive this. It almost has to come from the government.* (P13)

*So I think it would be true to say that on the whole we had an investigative driven approach to research strategy for the last decade or two.* (P15)

The investigative driven approach is also changing. There is an increased push by the university and medical school to focus on high performing research areas. There is a sense of deliberateness about the choice of research areas, and likewise leadership played a key role in driving this. For instance, this participant went on to say that:

*I think the last probably five years of university level and probably since the commencement of our new dean,[name omitted], there has been far more discussion of a faculty plus university owned strategy around research with a view of supporting high performing areas as defined by inputs like research grants income and outputs like publications and so on.* (P15)

Research, as a differentiating factor, is seen by all medical schools, as something it already has (for established medical schools) or something it aspires to have in the future (for the younger ones). This points to a more global agenda to improve reputation and prestige through a highly regarded research profile and consequently a higher position in global rankings. However, the choice of which research areas to focus on is increasingly deliberate and for at least one medical school, it is an issue for which it is grappling with, in terms of the tension between its mission and research agenda.
7.2.5 Knowledge exchange

The more established medical schools (M3 and M5) see their association with a wide range of Medical Research Institutes (MRIs) and teaching hospitals as a distinctive feature of the medical schools. The collaboration between MRIs and teaching hospitals can be seen as a form of knowledge exchange which promotes innovation and economic development. As seen from the comments below, participants in M3 concurred that the range of clinical experiences offered by the vast selection of teaching hospitals, make their medical program unique.

Well, I think that what makes it unique is probably because firstly clinically – the clinical experience we can offer to our medical students. We have a huge range of hospitals that we can send our medical students to. So the range of clinical experience that our students get is huge. Of course that’s a potential problem because we have to pay for it. And we maintain a lot of staff in those clinical schools and those hospitals and that’s expensive. And of course it’s not paid for by the government. So I think that’s unique. (P9)

I think it’s the sort of focus on the clinical, very clinical-oriented course, which makes us clearly different from other universities. (P11)

At another established medical school (M5), one participant also commented on the reputational effects of well-established and well-known MRIs and teaching hospitals on the medical school.

We have this extraordinarily rich group of hospitals and medical research institutes which are affiliated with us. And I think although all schools would say that, the nature of the individual reputation of those institutions in their own right reflects well on us and hopefully reflects well on them. (P15)

The relationship between these organizations (MRIs and teaching hospitals) and age and, consequently, reputation is evident in the comments above by participants from the more established medical schools. Additionally, comments made by participants
from the younger medical schools assert this point. Their observations on the lack of renowned MRIs and teaching hospitals associated with their medical schools were described in terms of its reputational effects (P3) and the loss of highly qualified staff to more reputable institutes and hospitals (P7). As a result, the promotion of two hospitals to teaching status at one young medical school is seen as a significant advantage for this medical school (M2).

*It gave the opportunity for two hospitals in the [name of region omitted] to become teaching hospitals... We now have teaching hospitals which will provide the academic and research rigour to support this. So there is a lovely connectivity there between these two, and they both feed off each other. And this is different, this is something completely different from the traditional teaching hospitals in New South Wales and dare I say, in Australia, that there are two small to medium-sized metropolitan hospitals which are now being elevated to the status of teaching hospitals. (P7)*

However, one participant (referring to the way teaching hospitals are managed and run) pointed to age as being a barrier to innovation:

*There hasn’t been a traditional established school that has changed [the way teaching hospitals are managed], only because most of their resources are locked up in the big hospitals. (P17)*

As articulated in chapter two, ensuring adequate breadth and depth of the clinical placement is an issue for all medical schools. Consequently, the clinical experience offered by wide-ranging and reputable teaching hospitals, would be seen as a distinctive feature of some medical schools. Additionally, MRIs and teaching hospitals are characterised, among other things, by their medical and clinical research. A highly regarded research profile is associated with highly ranked positions in global league tables. An association with MRIs and teaching hospitals with long standing reputation for renowned research will be seen as a differentiating factor for medical schools.
7.2.6 International orientation

The more established medical schools see their playing field as global rather than one that is local or regional. It is interesting to note that from the previous sub-section on research (sub-section 7.2.4) that a focus in particular areas of research is seen as a differentiating factor within the international context. This is evident in previous literature which sees research management as increasingly global in nature (van Vught, 2008). The comment made by one participant from an established medical school (M5), supports this point:

So I think that horizon and perception of influence might be… our point of difference might be a truly global agenda and through global competitiveness. (P15)

Indeed, the individual playing field of medical schools influences how external factors affect their strategic positioning. This sets the medical school apart from others and changes the relational linkages with external actors—with whom it collaborates, negotiates and competes and the nature of that relationship.

At another established medical school (M3), participants discussed their distinctiveness in terms of partnerships with international entities (P10) and their international cohort of students (P11). As this comment illustrates:

And of course the final thing that I believe makes us somewhat unique is that we’ve got a network of international partnerships. (P10)

This participant went on to say that as a result of the international partnerships, medical students get a global experience through student exchanges as well as an increased number of international students coming to study at the medical school. For this medical school, the increased international orientation is a deliberate strategy at both the university and medical school levels.
From the above, international orientation of the two medical schools (M3 and M5) seem to cut across research, teaching and learning, and student profile. Internationalisation strategies in higher education have long been documented (see examples of Blight, Davis, & Olsen, 1999; de Wit, 2002). It is interesting to note that in the case of medical schools, this seems to be evident in the more established medical schools. What is striking also is that the international focus at one medical school seems more concentrated on research, while the other on teaching and learning.

7.2.7 Location

A number of participants see location as a differentiating factor for their medical schools. Interestingly, drawing also from the previous section on mission (sub-section 7.2.1), these medical schools are younger medical schools which were established in the last fifty years. This is not surprising as the first (and hence oldest) medical schools are located within the Group of Eight universities and based in large metropolitan areas. Being located outside the metropolitan area was seen as a differentiating factor, as commented by various participants:

*Look the location. Some people choose [the medical school] because they don’t want to be in the city.* (P3)

*We have a rather unique structure, we are trying to adapt which makes it difficult to making a rather other courses. And the other, I guess is unique factor that I didn’t mention is that we run on two campuses. The medical course runs across two campuses. We have another campus in [name of region omitted], the [name of campus omitted] campus which is about an hour away by car.* (P4)

*I suppose the other thing that’s distinct about us is the fact that we’re in the outer urban area and it’s always set up to be in that area. And this is the sort of mission to address the kind of the health inequities caused by the lack of medical workforce here, and that’s a uniting factor.* (P5)
So if you were to say to me, what differentiates this school – it’s because we’ve got a geographical push to bring students in from the local area and that feeds into a fairly universal philosophy which is that if we get them from here, get them early out of school, grow them here and they stay locally then they are highly likely to come back and work locally. (P6)

It was the first medical school established outside a capital city and it was very much established with the assistance of the community. (P14)

Participants from another medical school (M6) talked about the co-location of its medical school and hospital on one site (P17, P20) as a differentiating factor. The medical school was established on this model and has “performed above its expectations in many ways because of that structural style” (P17). Although the medical school has expanded to 123 locations, the original co-location principle has continued to this day.

We’re the most distributed medical school in the country... refer to us as being transcontinental medical school...however we are still distributed in the same way that our facilities, the vast majority of them are located in health services or next to health services or in the health service place. That co-location principle is still a guiding principle for the school. (P17)

Admittedly, the co-location principle of this medical school is more a structural configuration rather than location. However, this medical school is also characterised by its location, which is geographically dispersed across the north-south corridor of Australia. The co-location within its 123 locations (a distinctive feature in itself) is a differentiating factor for this medical school.

7.2.8 Size

A few participants see size as a differentiating factor. Again, these participants (P2, P3, and P5) were from two of the youngest medical schools in Australia. Not surprisingly, the more established medical schools tend to have a bigger cohort of students. It would seem
that the size of a medical school would increase as it becomes more established. However, an expansion of medical programs in Australia requires government approval. At (M1), one participant did not think the size of the student cohort would change dramatically because of the nature of the medical program it has adopted:

*Well the model, we’d be very hard pushed with the model that we have to argue for too many more places because of the nature of the model. It’s a very expensive model.* (P3)

One participant, who has worked in a number of medical schools, pointed to the size of the current medical school, which stimulated an environment of collegiality and made it different from others:

*I’m beginning to think that size is one of the critical things in determining how our medical school actually runs. In the sense of the management structure, if you think about the proximity of the dean and the proximity of the executive group to each other here is excellent because we are small.* (P5)

This participant went on to say that:

*I don’t think we’ve had that many cracks really. We’re still all pretty together. And part of it is the size, and part of it is also we all wear multiple hats... it makes up I suppose, in fact everyone talks to everyone else, makes up creates that cohesive culture. And that’s sort of the sense of uniqueness without having to put it in documents and constantly, I mean sure they get some communication, but it’s not as big as they could be.* (P5)

From the above, size, as a differentiating factor, can be seen from two perspectives. In the first medical school, the small student cohort size is seen as a pull factor to draw students—those who seek a stronger sense of community and connection—into the medical school. In the second medical school, size is seen as creating a more cohesive working culture, on one hand to motivate current staff, and on the other hand to attract potential staff into the medical school.
7.2.9 Age

The age of the medical schools resonated in many responses from participants across most of the case study medical schools. The younger medical schools see their youthfulness as being a differentiating factor. As commented by one participant:

*And the other factor that is really important is the age of the medical school... I think that sort of the different visit, there are probably stages in the evolution on the medical school where you’re moving from that start-up frantic phase to a stage of maturity. I think those things make us quite different.* (P5)

One participant sees its youthfulness as creating a more flexible, adaptable and collegial place to work “*because it hasn’t existed for hundreds of years, it doesn’t have the rigidity that some of the older institutions have*” (P17). However this participant feared that as the medical school becomes more established, it will develop behaviours and structures that are difficult to change.

*However, it is also a risky time in the life of the institution because the institution could decide that it wants to become traditional, i.e. wants to establish traditions and those traditions can, if you are not careful, become somewhat ossified. We are at an interesting phase of our life.* (P17)

Similar to the younger medical schools, the older medical schools see age as a differentiating factor in terms of giving them more opportunities and experience in running a medical school. These are reiterated in participants’ comments:

*I think our age means we have a really a unique clinical school opportunities associated with us, secondly, again because of our age we have a number of research institutes associated with us that enable us to have a research strength, that I think a new medical school wouldn’t have.* (P10)

*We are now one of the older medical schools. After the really old medical...*
schools, we are the next cap off the rank. We now have got a bit of age, I suppose, to our medical program. (P14)

I would say that the thing that sets the medical school... apart is first of all its history. So, its experience in medical education. (P16)

Across all global ranking systems, the top-ranked universities are distinguished, among other factors, by age (Sheil, 2010). It is, not surprising then, that institutions, including medical schools, see their heritage as a distinctive feature, to be associated with reputation and prestige. From the perspective of the younger medical schools, their youthfulness is characterised by their ability to try out new things without established structures creating barriers to innovations. Additionally, it would seem that their youthfulness offer a more collegial workplace.

7.3 Discussion

This chapter has presented the empirical findings related to how medical schools view their distinctiveness, and consequently their strategic positions in relation to other medical schools. After discussing the initial establishment of medical schools in terms of their missions and innovations, the discussion which follows described medical schools’ distinctiveness across eight dimensions and characteristics of teaching and learning, student profile, research, knowledge exchange, international orientation, location, size, and age.

The strategies surrounding the initial establishment of the medical schools are deliberate and planned (Mintzberg & Waters, 1985) as universities have to position their medical schools distinctively from other already established medical schools. Far from it being an emergent process (Mintzberg & Waters, 1985), strategy formation in medical schools can be seen as a process of market analysis, focusing on detailed analysis of the medical school’s context and its competitive position (Porter, 1996, 2008b). Although not for the direct purpose of higher profits, the deliberateness of the medical schools’ strategies was evident from the precise and articulated intentions expressed within the initial proposal.
Based on the environmental assessment of what was already going on in the sector, medical schools set out their mission, vision and strategic intent, as well as their goals, strategic actions, assessment and evaluation (Duderstadt, 2000; Kotler & Murphy, 1981) in the initial proposal to the government. Strategy tends to precede structure (Mintzberg et al., 1998) as medical schools needed to obtain government approval before commencing. It would seem that within the regulated environment, medical schools have some strategic agency to position themselves distinctively from other medical schools. However, this can be considered as a ‘negotiated position’ (Murray & Isenman, 1978), particularly for the newer medical schools as a result of continuous discussions with the government at the time of the proposal.

A recent example can be seen from the proposal for a new medical school in Western Australia. With politics at play, government’s funding and support of the Curtin proposal were negotiated and contingent on the Western Australian government demonstrating that they had addressed the work placements shortage (AAP, 2015). Additionally, the success of Curtin’s bid has fuelled fresh calls from La Trobe and Charles Sturt universities for the government to approve their plan to create the Murray Darling Medical School across regional centres in NSW and Victoria. The joint proposal from both universities claimed 80 percent of students would come from regional backgrounds, helping to redress the shortage of doctors in the bush (Loussikian & Trounson, 2015). If approved, the strategic positioning of the new joint medical school would also appear to be negotiated.

A summary of medical schools’ positions is illustrated in Figure 13. Based on the thematic analysis of the interview data, colored dimensions (in shades of cyan) indicate the dimensions in which medical schools has made strategic decisions to focus on. Dimensions which are greyed out means that a medical school does not consider these dimensions as ones it focuses its efforts and resources on although it may conduct some or limited activities within those dimensions.

The findings suggest that the medical school system is somewhat bipolar in nature (Brosnan, 2010; Trumble, 2010). All medical schools, in the case studies, seem to strive for academic recognition through a highly regarded research profile and graduate outcomes.
through a differentiated medical curriculum. In a regulated environment where the government has the primary responsibility for policy relating to student numbers and funding (see chapter 2), developing a distinctive position through teaching and learning is probably one of the most obvious ways medical schools can position themselves. This is evident from the analysis of the data, as each case study medical school has attempted to develop a distinctive medical curriculum as compared to other medical schools. This is particularly more so in the younger medical schools as they are more focused on the vocation rather than research (Trumble, 2010).

Research, as a differentiating factor, is seen by all medical schools as something it already has (for established medical schools) or something it aspires to have in the future (for the younger ones). In that sense, research can also be seen as one differentiating factor common across all medical schools. This finding challenges Trumble’s (2010) notion that research has little value for those medical schools focused on the vocation, and points to a more global agenda to improve reputation and prestige through a highly regarded research profile and consequently a higher position in global rankings (van Vught, 2008). The choice of which research areas to focus on is increasingly deliberate and for at least one medical school, it is an issue for which it is grappling with, in terms of the tension between its mission and research agenda.
Figure 13: Strategic positions of medical schools
Not all medical schools position themselves through the dimensions of knowledge exchange, student profile and international orientation. This concurs with previous studies (Kim & Lim, 1988; Lukas et al., 2001; Tan & Litschert, 1994) in which medical schools emphasised some dimensions at the expense of others. Interestingly, only one medical school (M5) seem to occupy a position in which its activities cut across all five dimensions. Additionally, location, age and size are seen as distinctive features for some medical schools.

Additionally, some medical schools do attempt to position themselves within ‘blue ocean’ research (Kim & Mauborgne, 2005). Medical schools, M1, M2 and M6, for instance, have a focus on medical education research despite it not being a high national priority area. For the more established medical schools, M3 and M5, their international orientation in teaching and learning and research could also be seen as an attempt to position themselves in distinctive markets.

The above analysis concurs with previous studies (Brosnan, 2010; Lawson et al., 2004) in that medical schools are not all the same. They diverge in terms of their core functions of teaching and learning, research and knowledge exchange as well as have varying histories, locations, size, student profile and international orientation. It would appear that while attributes such as location and size are used to differentiate medical schools, these, on their own, are not sufficient, to position medical schools within the system. To give an example of one medical school, M4 would seem to be differentiated by their location, age and students, in addition to the common differentiating factors of teaching and learning and research. Accordingly, what this implies is that, all medical schools seem to position themselves against two differentiating factors of teaching and learning and research, and make use of other attributes (Morphew & Hartley, 2006) to strengthen its position within the system.
7.4 Summary

This chapter provided an analysis of the interview data which responded to the first subsidiary research question as to how Australian medical schools view their distinctiveness. After discussing the mission and innovation of medical schools at the time of establishment, the analysis which followed, focused on eight themes which were derived from analysis of the interview data. The chapter concluded with a discussion of the empirical findings by reflecting on the literature. The next chapter provides an analysis of the interview data which corresponds to the second subsidiary research question on planning and monitoring of profiles.
Findings: Planning and monitoring of profiles

8.1 Introduction

This chapter is the second of three chapters presenting the results of the research. The chapter presents the findings for the second subsidiary research question:

How does planning and monitoring of profiles inform strategy formulation in medical schools?

The results in this chapter are organized into three main sections. The first section discusses the ways in which the distinctiveness of medical schools, as examined in the previous chapter, is understood and measured within the medical school. It considers the planning process which medical schools apply to develop an understanding of their strategic position amongst staff and the range of indicators used to measure success. The second section deliberates on the utility of the visual profiling tool as a means for supporting evidence-based strategy formulation. The chapter concludes with a discussion of the empirical findings by reflecting on the literature.

8.2 Planning in medical schools

As required by the Australian Medical Council (AMC) in its assessment and accreditation of medical programs, medical schools are required to define “its purpose, which includes learning, teaching, research, societal and community responsibilities” (Australian Medical Council, 2012a, p. 7). Consequently, all medical schools would have a strategic document, of some sort, that sets its mission and values. In some medical schools, the strategic planning process is more comprehensive than others, as articulated by this participant:
Yes. We have a strategic plan for the medical school. So we have a five year strategic plan and we have annual operational plans for the medical school. So that’s part of the [name of university omitted] and obviously includes all of the activities of the school because we don’t just deliver the medical program...But then in addition to that I have a five year operational plan, annual five year strategic plan, annual operational plans and KPIs for the joint medical program that I report on separately to the government that runs the program. (P12)

It is interesting that for most medical schools, the articulation of the strategic planning process is driven by external factors such as the AMC for accreditation (P19); internally by university’s governance (P5); and as mentioned above, the Federal government (P12). As commented by one participant:

*And in some respects, it is written in response to the greater university demanding that each school have a strategic plan. And that it aligns with the strategy of the university. So it’s something that’s requested rather than driven from within. (P5)*

There is a sense among participants that strategic planning within the medical school is a process imposed upon them—shaped by the government in a public sector industry such as higher education, by accrediting agencies particularly in a regulated industry such as medicine, or by the university as part of its alignment to a broader university-wide strategy. For instance, the AMC by requesting medical schools to articulate its purpose, also ask medical schools to ensure that its purpose addresses “Aboriginal and Torres Strait Islander peoples and/or Maori and their health” and relates to it to the “health care needs of the communities it serves” (Australian Medical Council, 2012a, p. 7). Hence, these values would be articulated in some shape or form by all medical schools.

In one medical school (M6), despite being driven externally, the strategic planning process seems to have been embedded in and internalised within the medical school in the last few years.
However, in fact, the reality is that [schools within the university] need to get together. They need to understand the strategic plan of the higher level up and they need to strategically plan themselves about how they will achieve this. And because each division within the university is slightly different so they’ve got particular takes and goals that relate to their areas… and it’s increasingly obvious that the school themselves needs to do strategic planning. (P20)

Consequently, the strategic planning process at this medical school (M6) seems to be more systematic than others. As can be seen from comments by these participants, there is a range of planning activities which take place within the medical school:

We do have strategic planning sessions. Wednesdays is locked off for that. And we’ll be looking at our strengths and weaknesses moving forward (P19)

Yes. We’ve had our own internal strategic planning. We’ve issued a document to the board of education and the school executive. (P20)

I am expecting that at our next strategic planning which we will probably hold mid-year, we will be able to engage strongly with the medical course director and the dean and to get some, be able to engage in some priority setting that is important for the school. (P20)

It is interesting to note that participants at this medical school seem to be genuinely excited at the prospects of being involved in strategic planning for the medical school. This could be attributed to the “unique collection of academics and professionals” (P20) and also to the notion of it ‘being in the blood’ of the medical school. One participant’s comment illustrates this:

We have a mission/vision statement which is on our website but to be a disruptive technology, no that is not documented anywhere. It’s just in our DNA. (P17)
At another medical school (M2), one participant viewed the strategic document as a “word document that sits somewhere. It gets floated around at certain committees” (P5). This participant, however, attributed this to the cohesiveness and open communication of staff within the medical school, which makes the strategic document somewhat less important.

*You know we’re all united in this mission to get [the medical school] going, now getting it going...we are all still pretty much on board. Creates that cohesive culture and that’s sort of the sense of uniqueness without having to put it in documents and constantly making... Sure, they get some communication, but it’s not as big as it could be. (P5)*

Another participant from the same medical school had this to say:

*I think that the other thing that happens is there’s a process of continuing renewal and I think that’s so healthy. A month wouldn’ t go past without somebody in the school saying “why don’t we do this differently?” And I think it’s really healthy. (P7)*

For the most part, strategic planning for medical schools seems to be a process imposed by external factors through accountability frameworks set up by the government, the AMC and the broader university governance. In all medical schools, there is a sense that participants have a shared understanding of the distinctiveness of the school through this process. But for two medical schools, M2 and M6, this understanding seemed to be more embedded. At M2, this seems to stem from the cohesive culture fostered among staff within the medical school. Participants reported an environment where staff feel welcome to participate, collaborate and provide feedback. At M6, there is a sense that the planning process is more systematic, with opportunities for staff to engage in priority settings for the school. In both medical schools, it would seem that the collaborative culture foster engagement of all staff within the medical school rather than just the direct reports.
8.3 Monitoring of profiles

All medical schools monitor their performance to ensure that they were meeting the objectives set out in their strategic documents. This form of strategic control meant that medical schools identified formal and explicit measures to monitor strategic progress and ensure the implementation of strategies. For all medical schools, there seem to be a standard set of metrics (P5) which medical schools use to monitor and measure progress, not least because these “performance indicators [are] required by the AMC” (P14). These indicators seem to centre on teaching and learning and research. These will be described in the next two sub-sections.

8.3.1 Teaching and learning

Participants cited common indicators of assessment, student feedback or satisfaction, and student diversity, as means to measure success in teaching and learning. Examples of comments by participants are provided for each:

1. Assessment

   We obviously just got the usual assessment tasks and in terms of how successful we are at producing doctors. (P4)

   So, other outcome measures, I suppose, might relate to particular skills, so we are interested in clinical pharmacology skills and again we’re doing some direct measurements of that and in collaboration with NPS, the National Prescribing Service. So, that’s a national body and looking at whether or not our students’ skills, we could measure them in assessment, are changing over time. (P15)

2. Student feedback or satisfaction

   We measure [outcomes] in a number of ways. One is student feedback. It’s at one level and I keep saying to students you don’t realize how important that is and that actually people listen to feedback. (P7)
The only [indicator] that would come down to a program level is about teaching, good teaching and things like that. And the university has performance indicators around student satisfaction, good teaching and has indicators around numbers of student. The numbers of students are fixed for medicine and we always achieve those numbers and they are all subjected to the same student satisfaction and good teaching scores of others. (P14)

3. **Student diversity**

We measure [student diversity] in terms of the country of origin, in terms of ethnic diversity. (P10)

So a short term outcome for us is the diversity of our applicants and the number of aboriginal students, and the number of rural and remote students, the numbers, so we have sub-quotas for aboriginal, we have sub-quotas for rural and remote, we have sub-quotas for refugee students. So those things are our outcomes, sort of, right at the outset. (P17)

Indeed, many of the indicators in teaching and learning are driven by AMC. For instance, the use of student and teacher feedback is listed as one of the monitoring mechanisms required of medical schools (Australian Medical Council, 2012a). Certainly as noted by one participant:

The other thing we’re doing because AMC are coming through accreditation next year and there’s a lot of work going into preparing for that and one of the things to demonstrate will be, how efficient is your program? What are you delivering? What’s the feedback from students? What’s the community feedback? (P7)

In terms of particular outcomes for the medical program/curriculum, another participant commented on how the research component of the curriculum will be measured for its AMC accreditation.
So a specific example would be research [component of the program], so what are the measures of success? The measures of success for that program are...I suppose some qualitative things around the breadth of experience and the student’s experience of those research opportunities. But how many of our students have published in peer review literature by the end of two years? What numbers of our students have presented international meetings related to those things? So, there are some very specific measures of which we have some baseline data from the old course that will allow us to look at that. (P15)

Consequently, it would seem that many measures within the teaching and learning dimension are driven by AMC, as the agency that assesses and accredits medical programs in Australia. The process of accrediting medical schools involves critical evaluation of all aspects of the medical education program against standards set by the AMC. Participants view this process as rigorous and hence, setting up a monitoring mechanism for teaching and learning is an integral part of all medical schools.

8.3.2 Research

In terms of research, participants cited common indicators of publications and grants, international collaborations, and students in higher degrees, as measures of success. As above, examples of comments are provided with each:

1. Publications and grants

   In terms of success, we are still measuring in terms of research outputs and publications and grants. Given that we’re a new, I mean we are still setting up, so it’s not too bad. (P5)

   And, of course, there’s the research publications and obtaining grants for monitoring our research performance. (P9)
2. **International collaborations**

*I mean, there’s also the joint publications... with the international collaborations. International grant money as well.* (P11)

*It’s very successful because we produce more than seven international publications per full-time equivalent research.* (P18)

3. **Students in higher degrees**

*It also means that we can grow the number of research students we have. We have really one thousand and two hundred PhD students here.* (P10)

*We will be looking at the number of our students that go onto research higher degrees or other forms of higher degrees.* (P15)

Unlike indicators of teaching and learning, measures of research seemed to be driven by the university and the government. Comments by participants, to that effect, are provided here:

*That’s the key performance indicators that were in the plan and that were accepted by the university... They are set by me and they are higher than what the university would typically ask... Depending on the discipline, [name of university omitted] would ask for more external revenue because they’re very disciplined oriented.* (P18)

*So I wouldn’t make [research] as really a medical school parameter. I think it’s more a university parameter.* (P19)

*I think we’ve been a very process oriented school. And I think the outcomes measures have been those that the university requires, so that predominantly the research outcome measures, and in turn that is guided by Federal government.* (P20)

Interestingly, the comments above are made by participants from one medical
school (M6). In some others, the alignment to the university broader-strategy is more implied rather than explicit, such as this comment by a participant in M4.

*Each school has its own unique KPIs which are around teaching, research performance, staff development, all the sort of things you would expect from any corporate set of indicators.* (P12)

Although participants in M6 see research as being driven by external factors, there is no question of the importance of research for this medical school. It would seem though, that this belief is more rooted in the values of individuals within the medical schools, as to how they view the broader role of the medical school. This comment by one participant illustrates this:

*But it’s a question as to how much you can separate them because I think to be a good research medical school; you’ve got to be research active and looking to teach modern stuff. But you shouldn’t get the research confused with the teaching. It’s a very interesting twist that one. So I think they most definitely both exist, they both contribute to a good medical school. But how you should prioritise them is tricky that’s why I tend to separate them. But I don’t think you could be a good medical school if you didn’t have any activity outside just the teaching.* (P19)

It would seem that measures of research are driven by the university and the government. Unlike teaching and learning measures, measures of research success are not set against any particular standards. There is a sense that success in the research dimension is negotiated and agreed upon by relevant parties involved—such as between the head of school and the university’s senior management, and between staff and the head of school. Consequently, at least in the case of research, medical schools appear to have some strategic autonomy to develop and define their capabilities and goals for success.
8.3.3 Other measures of success

In addition to the externally imposed measures of monitoring, some medical schools reported other distinctive measures used within the medical schools. Synonymous to their missions of addressing workforce shortage in the region or focusing on the rural and regional areas, for instance, a number of schools (M1, M2 and M6) tended to measure success by tracking students and their graduate outcomes and destinations. These comments by participants emphasise this linkage to the missions of medical schools:

*We are setting up a tracking program to track them further down their careers to see what choices they make. The early indications are promising. That we are achieving what we set out to deliver. But we need to continue doing that.* (P1)

*We track where our interns go... We have 63 percent [of our graduates] this year going to regional and rural areas... And as our students are now entering graduate training programs,... we’re starting a new tracking program so we can actually see where those students have gone.* (P3)

*So we’re actually tracking whether they stay in [name of region omitted]’s hospitals and then the next round will be where are they choosing to do their medical specialty and their general practice training at this point. So that feeds into a training pathway for specialty and general practice training.* (P6)

*So for us, a big measure of success is where our graduates work... So the careers of our graduates, are they serving in especially in the underserved areas? Are we preparing a graduate profile that is the profile that the Australian health services need? And what is the work that they are doing? And that, that is key.* (P17)
However as noted by one participant, graduate destination as a measure of success is tracked by most, if not all medical schools (P15). There is, however, some variations as to what would constitute success. At two medical schools (M1 and M6), as seen above, destination is defined by rural, regional and remote areas. At another medical school (M2), it is defined by the local area where it is situated. And for a number of medical schools (M2, M5 and M6), the medical specialty defines the ‘destination’ of students. As one participant commented:

*So what proportion our students end up in primary care because we value primary care. (P15)*

Apart from the ‘corporate’ set of indicators, medical schools may also have other measures specific to the medical school, which are monitored on a regular basis. As can be seen from the comment below, these measures may vary from year to year depending on the priorities of the medical school.

*But the individualised ones would include things like the development of the new MD curriculum, addressing areas that require improvement in terms of the graduate exit survey, responding to our own internal feedback, stuff about improving assessment and so forth. So we have a list of stuff that we want to address for the medical program each year. (P12)*

Other measures include academic performance and development program (P9), international partnerships (P10, P11); hospital partnerships (P10); intern readiness (P15), external revenue (P18), and clinical school or service (P10, P17). Examples of comments from participants follows:

*First of all, it’s hard to measure the uniqueness about clinical school and our hospital partnerships. Half of them through student satisfaction and increasingly, we’ll be looking to measure it if we get anointed as an academic health science centre,... then the hospitals can actually see the partnerships as an advantage to them too. (P10)*
For the clinical service it’s the basis that we’re working to what extent are we turning around their difficulties in recruiting staff. Are they able to now recruit the brightest and best because they are related to our university? That’s a clear outcome for us. (P17)

Many participants agreed that most measures used by the medical schools are proxy or short term measures. Student and teacher satisfaction measures, for instance are “very blunt instruments” (P15) and ought not to be used on its own.

And then in consideration of specific programs, evaluation that relates to those that might have a degree of specificity and a degree of validity that is greater than student happiness. I mean student happiness is a good thing... but it doesn’t actually tell you whether the program is good, it tells you that the experience of the student has been good. (P15)

Nothing wrong with student questionnaires. But first of all they have to be focused on learning. Secondly they have to be triangulated with qualitative but perhaps even other measurements... The student effect should be correlated with an actual demonstration of outcomes and that’s why we’ve got assessment. So you need to bring assessment and program evaluation, and perhaps admission information. Bring that together to see how well we’re doing and where are the strengths and weaknesses in our programs. How should we then combine that with educational design? If we want to make changes what’s the best way to change? And that’s what you combine with staff development, because those are the people who have to make it happen... And that’s something I rarely find in medical schools. (P18)

Participants felt similarly in terms of research indicators, in that they are proxy measures for research output. For instance:

Obviously things like you know publications and grants, those are proxy outcomes for our research output. But they really don’t measure the things that we’re interested in. And that’s the difficulty with the research
environment at the moment I think, is that people really struggle to measure the impact of research. So you can have very prolific research that isn’t likely to bring an impact in our world. (P17)

Indeed, many participants acknowledged the shortcomings of these indicators and seek to develop better measurements of success for medical schools.

So, I am not complaining from a position of weakness, I am complaining from a position of where I actually meet the metrics, but I think it’s not a way to [do it]. Quantifying quality is an oxymoron. (P18)

A number of participants deliberated on outcome indicators in terms of health and good patient care.

So the ultimate thing will be to measure health outcomes as a result of our students. But because of the dilution of everything and everybody in the health system is, it would be impossible to measure the health outcome as a result of a change in the course. (P15)

For our research, it’s what changes are occurring in the health service delivery, in the care or the diagnosis of the people with illness and the prevention of the illnesses in the first place as a result of our research. So it’s very much translational outcomes that we look at for how we can say that we are succeeding. (P17)

Ultimately it comes down to, “Do we produce good patient care?” And I’m looking for ways to objectify good patient care. (P19)

For these participants, this boils down to the values of the medical school and the individuals within them. As articulated in the previous chapter, if the positioning of medical schools sought to solve the issues surrounding medicine and the medical workforce, consequently the measures of its success ought to be ultimately, improve the long term outcomes in medicine and the health care system generally. As one participant pointed out:
They’re all long term, they’re absolutely long term and if you’re in medical education you’re in it for a long term outcome. (P17)

Another participant summarised as follows:

I am an MD. I am a simple MD. I was trained to treat patients. And to me, quality, health or competence are similar concepts. You can’t pin them down in tick lists but you can evaluate them. (P18)

Remarkably, most comments relating to measurement of outcomes, emanated from participants in M6. There seems to be a shared understanding among staff from this medical school that the success of the medical school ought to be measured in terms of outcomes, and this is possible through the collective efforts of all staff. One participant summarised this as follows:

But I also think this is why strategic planning is important because you need to decide what are the outcome indicators that are important that tell you where you are taking things in the strategic direction. I think the school is still working through that. Um, there’s been current documents doing the rounds of what kinds of outcomes will be important for teaching. And I think people are putting their minds behind that. I’m hoping that it is informed by people with strong professional expertise in that area. (P20)

The simple revelation that a portion of medical schools have measures of success that are distinctive from other medical schools suggest that they do have some choice in how they position their medical schools and how they measure success in those areas. If strategic positioning is intentional or negotiated, as discussed the previous chapter, the way medical schools monitor success would have some degree of deliberateness. In that sense, medical schools would appear to have some strategic choice to develop and define their capabilities and goals for success.
8.4 Visual profiling tool for strategy formulation

Participants were presented with two profiling tools—one a visual representation of their performance relative to other medical schools (see sample medical school in Figure 14) and the other a visual representation of the median medical school (see Figure 15). Most participants agreed that the visual profiling tools were useful in helping them visualise their performance, and consequently their position with respect to other medical schools. Participants described the benefits of the tool in terms of its visual representation and utility of the tool for strategic formulation. Some extensions and improvements to the profiling tool were also discussed, in particular in terms of benchmarking and data.
Figure 14: Sample profile of medical school

Figure 15: Median medical school profile
8.4.1 Visual representation of profiles

Most participants agreed that as a visual representation, the profiling tool was useful. The profiling tool was ‘better than just numbers on a page’, visually engaging across the different dimensions of activities and colour, and provides an overview of the medical school. The comments by participants below summarises these views.

So if it looked like that. It’s always good if it reads easier. Putting numbers and stats on a page is not that helpful... Easy to read, easy to understand that sort of stuff. Yes. (P3)

Extremely. Extremely. Even if it’s nothing more than just lets you focus on the sorts of clump domains that external people wanted to point. It fits beautifully with the AMC standards. (P6)

The important thing for me is the various domains that you are looking at. I like the idea of these domains because it focuses your mind on the individual things. (P7)

It certainly shows where you are weak, doesn’t it?... If you have everything like this and you have one that goes like krrrk like that, it sort of really does stand out. (P13)

These kind of visual representation activities are very helpful and... I think summary data is always helpful in strategy. (P15)

It’s a great model. It’s a great way for people to inform of what’s happening. It’s intuitive and it’s, you know we’re all better with pictures than we are with numbers. (P16)

Oh yes, certainly, certainly, because this is your overview. (P18)
Certainly in no doubt did it stimulate my interest enough to make an engagement about primary issues. That’s what you want. So I think as a visual, it’s interesting and useful. (P20)

Clearly, a tool which allows staff to engage visually is more favourable than one which displays just figures and statistical computations. As summarised by the above comments, the profiling tool uses colours, dimensions and organized space to record and display information in a readily understandable form. It provided staff with a useful overview of the medical school in terms of monitoring the goals and objectives set out in its strategic plans.

As a visual representation, only one participant considered the profiling tool as being flawed. This participant saw the physical area for each quartile as being misleading.

[The area of each quartile] tends to make that look bigger than that and all it is, is that you are just talking about quartiles... This thing really almost speaks of the volume or area that’s bulky and yet if you were to represent it in two dimensions which is really, really what it is. It may not be quite as profoundly different from this one. Tufte may look at this in horror and say this is inherently deceptive. So you look out here and you see this big, big block of, that’s a huge area but in fact it’s really only just units of equal, equal weight. (P8)

While this participant suggested relating performance to ‘line size’ rather than ‘area’, this participant also conceded that doing so will make it less vivid.

Maybe if you made this less related to area and more related to line size or something like that. That might be a more accurate way of representing it. But it may be less evocative. Maybe less impression. (P8)

The previous chapter demonstrated that the positioning of medical schools involves a complex task of appraising the external environment of the medical school, analysing the contemporary issues surrounding medicine and the medical workforce, and
accordingly, to fill a gap in the field which was not covered at that time or which may not be sufficiently met by already established medical schools. Additionally, as can be seen from the previous section in this chapter, monitoring and measuring of performance in relation to that position is a multifaceted task involving a balance between externally-imposed measures of monitoring and those aligned with goals and objectives of specific medical schools.

As a result of this complexity, a good communication and shared understanding among staff are vital. Managers need to present increasing amounts of information to one another clearly and effectively. An effective tool for visualising a medical school’s performance and hence position should necessarily display information in a readily understandable form. A visual tool, such as this, will allow staff to support aspects of strategic formulation, discussed in the next few sub-sections.

### 8.4.2 Utility of profiling tool for strategy formulation

Only one participant did not find the profiling tool useful for strategic formulation. This participant asserted that he already knew the issues facing the medical school and such a tool would not provide him with any additional information he did not already know.

*Well most of the things that worry me are budget issues and not fluffing around with this. I mean all of the issues that I’ve got that will enable me to improve things come down to having money. Having money to do them. I know exactly... I know pretty well what needs to be improved. I know how to go about doing it. I don’t have any funds to do it with though... all of it involves money. (P9)*

For this participant, his financial discontent could be a result of two factors: the participant’s role within the schools; and the way this participant views strategy formulation in the context of the external environment. The first relates to the internal structure and hence governance of the university and medical school. The second relates to this participant’s views about the capacity to be strategic.
For the most part, participants agreed that the tool would be useful for strategy formulation. Higher education institutions and systems over the world collect data on a massive scale for internal management and external accountability purposes. However, if the information gathered is not used in ways to effect improvements, it renders that information useless. As one participant commented:

*It’s not what you do with the tool, it’s what you do with the information afterwards that’s important. If you’re going to talk about the utility of the tool then I guess it would be sort of careful instructions or a guide to the users saying this is what you’re meant to do with that afterwards. You know, you might use this as a base for a strategic planning day around that or something like that and say, “Okay, we’re going to talk about these areas and it’s not necessarily, you know, a true reflection but we would like you to sort of think about these sorts of things.”* (P5)

Another participant commented on access to the tool.

*Have a clear plan on who has access to this information. Every information can be used for good or for bad. So, this in itself needs to have a plan, who’s allowed, because if you’re the owner of this you can also decide who gets to use it or not.* (P18)

For any tool, and thus information within it, to be useful, it needs to cause a ‘thoughtful reaction’—for people to stand up and take notice in considered ways. For many participants, the tool triggered a response, for instance in areas where they thought they were not performing well but did, or vice versa. It “directs you where to have conversations” (P19) and enable more-focussed planning.

*I worry about people who are reactive without being thoughtful. I worry about people who would react to being in the 25th percentile and seeing that as representing we’re really poor at this when in fact we are really good at this. I think that if the overall satisfaction is 94, I would like to see 94 there just to orientate people the meaning of these. We’re doing ok. 94 is
a pretty good result or 86 or whatever it is but relative to other schools they are rating lower. Why does that matter? Some people may ask. It matters in terms of the reputation of the school in terms of the ability to attract researchers, the ability to attract students in a competitive environment. (P19)

And it raises a lot of questions for me as well which I think is important. And in terms of strategic directions I think it would inform strategies so long as it’s thought through critically and not superficially... I think it’s important in terms of a tool for asking or analysing, for asking questions... and getting strategic planning focused I think that’s where perhaps its function might be. (P20)

For some participants, it also depends on the culture in which the tool is introduced and used.

It all depends in the culture in which it is introduced and followed up...
So with the right culture, with the right VC, plus supportive environment—it tells us where to have discussions. (P19)

For this participant, such a tool would be better accepted in a medical school environment which encourages a system of accountability that sets clear expectations of standards for performance and promotes a culture of evidence-based decision making and continuous improvement. Culture is also about successfully bringing different groups of people together and developing a shared understanding of the purpose and direction of the medical school.

I think it's really, really important that you bring your people with you. So I think if strategic planning takes place in an obscure elitist manner, it would probably be almost useless. I think then, you become a top down authoritarian place which isn’t pleasant to work in. I think that if you really want to harness the power of the school, then you need to have a communicative process of strategic planning where the outcomes, you
know the strategic plan needs to be communicated, the commitment, then
the flow down kind of aligning of resources, the understanding of the
position on the ground and all that and the negotiations around that.
I think it has to be an open transparent communicative process to take the
people with you. (P20)

While there were shared agreement that the tool was useful for strategy formulation,
some participants feared that it could be used “dishonestly” (P8) or for “evil” (P19).

So I don’t think this [profiling tool] is inherently trying to be dishonest. It
could be used dishonestly if you were to manipulate this in certain ways
with your choice of figures. (P8)

The evil bit would be say well you should be like this and try and fit
the mould. So if, for instance, there is an area that perhaps we score low
then we should have a conversation. But then we could say, “No, we agree
that that’s the correct score”... And so providing we’re not a slave to it, I
think it’s a good window, a good insight to direct us. I quite like that. (P19)

Another participant explained it in this way.

This represents its benchmarking as a strategic planning guide would
require a lot of thought. I think all the information is useful in that, but my
experience is, if you under present the detail, then those who don’t know as
much will be ...are potentially biased by how it’s represented. So without
someone knowing the right questions to ask, things could look worse or
better than they are. (P21)

A number of participants see the utility of the profiling tool as an endorsement of
what the medical school has achieved. As can be seen from the comments below,
participants view the use of this tool as providing evidence that the medical schools has
attained what it intended to do, as articulated in their strategic plan.
So it’s confirming that what we’re doing is working. (P4)

It’s confirming what I already suspect. (P10)

It’s interesting how much of it is aligned to what I told you in the beginning. (P15)

Personally for me this is quite informative. And is actually consistent with my impressions. (P20)

The above suggests that the visual profiling tool is useful for a medical school if strategy formulation is deliberate. It strengthens the argument put forward in the previous chapter about the deliberateness of the medical schools’ strategies. Only when strategies are articulated precisely from the start, would medical schools be able to monitor performance in terms what it has planned. Having achieved what it sets out to do, a medical school is also able to use this evidence to demonstrate to senior management its achievements or reinforce certain aspects of the medical schools. Comments from participants reveal this:

It’s really interesting to see that we are on a path that the academic staff number is concerned and staff-student ratios. It would be very useful to take to the people that complain that we’re overstaffed. We’re no different to anybody else. (P1)

The vice chancellor says you’ve got too many staff, but we happen to be at the bottom of the 25 percent of medical schools in Australia. Okay, that’s good… I’ll show that to the Executive Dean. (P2)

And where we feature if we had Indigenous students in comparative here, that’s an important metric that I report back to anyone who would listen. (P6)
The student-staff ratio stuff is something I wouldn’t otherwise ordinarily be able to compare easily so that would be useful strategically. So we have a higher staff to student ratio is what this is saying than other medical schools. Others are in the 75th percentile where we’re in the fourth quartile… Yes. So that aspect it would be nice for me to show to the Vice-Chancellor. (P10)

The visual profiling tool was also useful for medical schools to analyse its strengths and weaknesses. As this participant indicated:

It would be interesting to look at where we are outliers. So whether we are above or below doesn’t matter; outlaying is outlaying. So then if we are doing something really good, then great. What have we done to make us really good at that? And if we’re not doing something as well then we are not in, not that we should always be in the average but if we’re below what is expected, why are we below that? Maybe quite rational why because we focusing on the purple rather than the green or something but that would be how I would use that. And then if it wasn’t important, then it wouldn’t matter. It doesn’t matter if you were an outlier. But if it is important, then obviously we would have to address that. (P3)

Self-assessment of an organization’s strengths and weaknesses is one way for a medical school to achieve a sense of one’s personal best. But what is best for one medical school is not necessarily the best for another. As can be seen from the above comment, it is also about prioritising what the medical school deem is important to them. This resonated in a number of comments from other participants.

So, yes it can be used as a tool for planning and strategy and identifying areas of weakness if you like and areas that need to be built up. This isn’t saying that certain areas are poor. It’s simply saying that this is where the emphasis is. (P16)
Again it’s about, you know, understanding what the indicators are and what their importance are to us as a score. I mean we may look at some of these and say this is in the area of flux for our school. We are not necessarily saying that we will be or ever can be in the top 25 percentile for every single measure. (P20)

Given resource constraints, medical schools cannot be all things to all people. They respond strategically to locate themselves in niches where they can make use of resources effectively and efficiently. Comments by some participants reflect this. They see the visual profiling tool as a way to focus their resources and investment in areas where it might improve their strategic position and enable them to outline some priorities.

I think it would be very useful internally within the university. I think it shows us in a pretty good light but it also, it also shows us how we can, areas which might be, the university might think, for the university’s strategic positioning, might be worth improving and putting some resources towards. (P4)

I suppose it also helps you, it may help out outline some priorities, like where you...because there’s only a limited amount of resources you can focus your attention to. Maybe that helps to make you go, “Oh, we better look at that particular area, of how are you doing. (P5)

And you know as long there is enough here to give you some idea then you know where you want to invest. (P15)

I think that it would direct us to areas to where we should have conversations. That would be good. (P19)

It also provides further evidence to the public as well as the profession as to the quality of medical graduates. For example:
What we don’t know is how we are perceived from outside. It is important to have reality checks. How do the places outside sees us when we take away all of the politics... It is really important, from a strategic point of view, we understand what the data shows, and how and where we put our time and effort. (P7)

The notion of benchmarking used in the profiling tool was welcomed by most participants. As a management tool, benchmarking is about self-evaluation and self-improvement through systematic and collaborative comparison of practice and performance with similar organizations (Burquel & van Vught, 2010). For the medical schools, benchmarking is an essential mechanism as a tool for strategy formulation and improvement processes. Benchmarking provides individual medical schools with valuable feedback about the strengths and weaknesses of their school.

But this gives you a kind of a bulk to it which is representative in some way. I think it would be interesting to see how each other individual medical school stacks up. What the plot features... for us to look at those. (P8)

Some participants, however, wanted to extend the concept of benchmarking further. A number of participants wanted to see the profiling tool be used to benchmark against similar like-minded medical schools. One participant, for instance, sought a comparison with other medical schools in the same phase in terms of its maturity:

There’s got to be context about all this, that’s very important... To see how we are perceived. How do we measure up with schools at a similar stage of development? [name of medical school omitted] has got a different mantra, [name of medical school omitted] has got a different mantra... How do we compare? Where are our strengths? (P7)

Another participant seek to benchmark medical schools with similar external funding.
So I recommend if you are looking and trying to compare [medical schools], you need to make an adjustment for the funding that comes not through the HECS scheme... If I look around, it’s fairly consistent. It’s those external resources. (P17)

What this participant meant is that, because the government tells medical schools how many students they can enrol, the funding they receive from the federal government is consequently fixed, in terms of teaching. The point of difference, from this participant’s perspective, is how medical schools use funding from other external sources, to position themselves distinctively. For this participant, the way to view distinctiveness of medical schools is to see how two medical schools with the same amount of external funding, perform in the different dimensions of activities. He pointed to several sources of external funding, such as philanthropy and funding from state governments above and beyond what medical schools would receive from the Federal government.

Comparing “apples with apples” (P5), as one participant puts it, enables medical schools to examine aspects of medical schools which are similar in attributes. The rationale is simple. As one participant explained:

What works managerially for [name of university omitted] works, because it’s got roughly hundred times the funding that we’ve got. If you are a boutique hotel, don’t try to run it like a Hilton. Focus on the boutiqueness of the hotel and the uniqueness of the hotel. (P18)

Another participant sought to benchmark its medical school with those which are more established.

It would be nice to have this for the top universities. See one of the things we’re always saying is, I don’t want to be compared to [name of medical school omitted]. I want to know how I’m going versus [name of medical school omitted] or [name of medical school omitted]. Now our Vice-Chancellor,... he’s always comparing us to our competitors. So our competitors, sort of the ones close to us. We are often about nine, nine to
eleven, you know sort of just outside the big eight... She’s always worried about the people who are in that space. (P13)

This type of norm-referenced benchmarking involves comparing performance with kindred medical schools in similar phases, which relates back to the age of the medical schools. As the previous chapter confirms, younger medical schools are more focussed on establishing their medical programs, the mid-term medical schools are more focussed on increasing research outputs, and the older medical schools sought to enhance reputation through research and international collaborations. Although benchmarking with all medical schools is useful, for a young medical school, it makes more sense to compare performance with another young medical school rather than with one that is more established.

Despite one participant (P3) commenting about the shortcoming of its university comparing schools within it, another participant from the same medical school, wanted to see the profiling tool used for comparison within different disciplines.

The other thing that will help us is medical school in comparison to other schools in the university. I don’t know whether that’s even possible... Yeah, it would be nice to know what that’s like comparing with the school of engineering. (P2)

Another form of benchmarking which participants sought is what is known as criterion-referenced benchmarking. Criterion-referenced benchmarking involves establishing a target, which is either a specified minimum outcome or an outcome it aspires to. This is captured by these comments by participants from M6.

So the second thing I would be looking at is... what are the strategic priorities that we set in the school? (P18)

No, because I’m not out to compete [with other medical schools]. I’m more interested in the end product which is how we produce the doctor. We don’t have a bar for that... We need to understand the course and the school
what’s important to them so we can prioritise and make sure our resources are put to best use. We are actually here not for our own careers but we’re actually here to support the school to make a difference. (P19)

I guess the university assesses itself by benchmarking with other universities. I would say we’d be assessing ourselves against the goals that we have. So that’s the different... It’s misleading to have, you know, compare it to others who are out there. (P21)

The last participant went on to say:

The other thing I think is, I’ll call it a “marker of concern” for each [medical school]. And that’s about where the [medical school] wants to go, so you know someone knowledgeable... would look at the retention rate and say it’s only 25%, but actually..., there’s no marker of concern. (P21)

As can be seen in the previous chapter, there are distinctiveness between medical schools in terms of how they position themselves. Consequently, the goals and objectives would be different for medical schools. Based on its distinctiveness, the “marker of concern” (P21) or, as another participant puts it, the “traffic lights” (P15) can be used as signals for medical schools to monitor performance against their set objectives. However, these goals and objectives would differ based on their mission and vision. What one medical school see as an area of concern will differ from another. As one participant remarked:

There needs to be room for people to define their own measures of success and not just the standard metrics from publicly available data. We almost need some kind of a gap [in the profiling tool] to remind people that this is where you put your mission. And so that it gives the stakeholders or the school community a chance to sit down and say “Ok, what is your vision?” We need you to define what it is and where you are going? (P5)

Any tool for supporting evidence-based strategy formulation is only as good as the data which underpins it. Consequently, many participants commented on various
aspects of the data. A number of participants queried about the quality and reliability of the data:

*The concept is good if I knew the data was correct.* (P3)

*The problem with the all these data, quality of teaching data, is the way it’s collected. It’s different from medical school to medical school.* (P10)

*So if you want to say how could I make this a better tool is increasing the reliability of the data coming in.* (P19)

It goes without saying that all organizations want timely, accurate, and consistent information to underpin strategy formulation. The same goes for medical schools. For P3, it is about making the right strategic decisions based on accurate data. For P10, it is about consistency of the data collected. Particularly with student feedback, there are variations among medical schools, in terms of how data are collected (for instance, online, paper-based and telephone surveys) and response rates of students. For P19, definitional issues relating to some measures, may lead to the process of strategy formulation being devalued.

As an overview of medical schools’ positions and performance, the visual profiling tool is useful. However, some participants wanted more granularity in the data. One participant wanted “*raw numbers*” which “*would be interesting rather than just proportions*” (P1). Another participant sought the range for each quartile. This is because the medical school may perform satisfactorily on one measure but still be in the bottom quartile and hence could potentially be “*deceptive*” (P21). For some participants, they also sought granularity in the different measures and dimensions of activities:

*It would be nice if you could kind of just break this one here and just pull one of these out and so you would look at academic staff and you didn’t have to sort of deal with all this other stuff. There’s a lot of distracting information. You could almost do that on an animation now, couldn’t you?* (P13)
I would be interested in combining them in a more query type of stuff or to look at the underlying numbers. I would like to be able to zero in... So what is the number of academic staff and what is the number of medical students and how does that fit? Because again, an overview is very helpful but for a detailed decision making I need to be able to query it later on. (P18)

I would say for each colour, there needs to be more granularity in it. For each colour, there needs to be its own circle. And so this is fine as a sort of a pictorial representation... I guess this encapsulates all the goals. It is what it is. It’s a summary. But yes I would like to pull it apart and have you know one blue bit, one green bit, red bit, purple bit, yellow bit. (P21)

An easy to read, often single page interface, showing a graphical presentation of the current snapshot of a medical school’s performance can enable instantaneous and informed strategic decisions to be made at a glance. However, being able to explore the data by moving from one level of detail to the next, will enable medical schools to change practices in order for those strategies to take effect. This is relevant for middle-level staff, particularly those with specific roles such as in teaching and learning and research.

In some cases, to be able to drill down the data is not sufficient. For some participants, it is also about triangulating the data for specific measures or dimensions of activities with other measures and activities, or with other measures not encapsulated within the tool, or with other qualitative judgments about its individual performance.

So that bit of information helps me analyse that’s where we are and where to go with it. I guess that it would be nice to triangulate some of this data with independently measured parameters. (P19)

Look at your strategic plan and what you are trying to achieve, and ask: Are we on the right track? Are there things that we could do to optimise what we are trying to do? Are all the activities that we’ve deployed aligned with the strategic decisions we’ve made? And how can we improve? And
then the numeric information plus the judgement information needs to be brought together. (P18)

This participant went on to say:

I would be getting this, exactly what I’m doing now, is, “Hey, how do these things combine with each other? I’m trying to make sense of the combination, because each individual, it doesn’t tell me very much. (P18)

A number of participants also sought longitudinal data to compare medical schools over time to identify any consistent results or trends. Trend data can assist medical schools to develop a strategy to respond to these trends, as commented by these participants.

Yeah, the trend absolutely. You know, what’s the trend? And so it would be useful, rather than to see a static position, what’s the trend? (P7)

But it would also be useful to see how the data from last year compared to the year before that or five years ago... I think breaking that down into what it actually means in terms of figures and how those figures are changing over time – are we improving in teaching quality but not as fast as everybody else or vice versa. (P12)

What would be more informative for me is if there were a longitudinal way of looking at it in the past decades... It would be nice to see how these things go because then you can link it to the management. Change of management, change of strategic direction, et cetera. (P18)

Trend data can assist medical schools in a number of ways: to identify areas where it is performing well so it can duplicate success; to identify areas where it is underperforming, and to provide evidence to inform strategy formulation. For another participant, it is also about understanding how the medical school has performed and predicting where current operations and practices will take it.
Well, I suppose what it doesn’t give is the ideal or what you would like to be. It gives a situation at one time. Doesn’t indicate where the future might go... As I said it doesn’t give you an idea of how your strategy might alter or what you actually want to have. This is what you do have but it’s not really what you want. So direction of change, if you like. (P16)

For this participant, the trend data can provide indications about how the medical schools might change its operations and practices in order to move the medical school in the right direction.

Additionally, participants also suggested a range of measures which could potentially be included in the profiling tool. These could be grouped into six dimensions:

1. **Teaching and Learning.** Examples include hours of clinical placement (P3); graduate destinations (P3); pathway programs, e.g. rural and Indigenous training and entry (P6) and work-ready graduates (P11)

2. **Knowledge exchange.** Examples include student and idea exchange between medical schools (P7); and national industry partnerships (P5, P6).

3. **Staff.** Examples include academic-professional staff ratio (P3); professional and career development, staff retention; staff equity (P5); and academic staff with teaching qualifications (P15).

4. **Finance.** Examples include cost per student (P2); and external funding, for example philanthropy (P7).

5. **Engagement.** Examples include service to community (P5); relationships with hospitals, medical research institutes, the proportion of our staff who are quoted and acknowledged in the press, social media (P15); and engagement with the university, department, community, media and industry (P16).
6. **Infrastructure and physical environment.** Examples include buildings, Information Technology and physical facilities and amenities (P5).

The utility of the profiling tool for strategy management is evident from the responses of participants. It would seem that as a snapshot, the tool would be useful if strategy formulation in medical schools was intentional. The tool provides medical schools with a mechanism to monitor their performance and provide evidence to external stakeholders against their specific goals and objectives. Similarly, for some participants, the tool allows them to monitor performance against the mission set out for the medical school.

An extension of the tool, to include trend data and benchmarking against similar medical schools, would appear to support medical schools to identify areas where it needs improvement and priorities for the future. Far from identifying actions which may form a pattern, it is about identifying priorities which are consistent with the context and mission of the medical school. In that sense this is also quite deliberate.

**8.5 Discussion**

This chapter has presented the empirical findings related to how medical schools understand and measure their distinctiveness. After discussing the way strategic planning and monitoring are undertaken in medical schools, the subsequent discussion described the utility of a visual profiling tool for strategy formulation.

For the most part, strategic planning and monitoring in medical schools seems to be a process imposed by external factors through accountability frameworks set up by the government, the AMC, and the broader university governance. In all medical schools, there is a sense that participants have a shared understanding of the distinctiveness of individual medical school, some more than others. Additionally, there is a degree of autonomy for medical schools to set their goals and objectives, particularly in their overall mission and vision, and as well, as seen from the above analysis, in areas of research outcomes.

It would seem that planning and monitoring of profiles play several roles within a medical school: a means by which staff can understand strategic issues, a means of
questioning and challenging aspects of the medical schools, coordinating business-level strategies within an overall corporate strategy, and communicating intended strategy and providing agreed objectives or strategic milestones. It provides evidence of whether a medical school has achieved what it sets out to do, and a mechanism for formulating strategies for the future.

The findings in this chapter are consistent with those in the previous chapter. While planning and monitoring would seem to be externally-imposed, the deliberateness of the medical schools’ strategies which were evident from the precise and articulated intentions expressed within the initial proposal (see previous chapter for a thorough discussion), are internalised within the institution through collective action and known to virtually to all the actors in the institution, and these collective intentions were realized, in most cases, exactly as intended (Mintzberg et al., 1998).

Analysing medical schools’ performance suggests that performance standards and their degree of achievement do have an impact on strategy formulation in medical schools. A poor performance on one measure or activity may lead to strategic decisions aimed at effecting improvements, if it was considered to be of strategic importance to that medical school. The key to executing strategy is to have staff in the medical school understand it; and it is evident from the findings in this chapter, that a visual profiling tool, which can convey instantly and memorably relationships that would otherwise be obscure, could be used effectively in the strategy formulation process (Platts & Tan, 2004).

In summary, participants found that planning and monitoring performance profiles can inform strategy formulation in medical schools. The visual profiling tool was better than just numbers on a page, visually engaging across the different dimensions of activities and colour, and provides an overview of the performance of the medical school. Participants agreed that the tool would be useful for strategy formulation: for external accountability purposes, to effect improvements, to direct discussions and enable more-focussed planning, to encourage a system of accountability that sets clear expectations of standards for performance, to promote a culture of evidence-based decision making and continuous improvement, and to provide evidence to senior management and other stakeholders of the achievements of the medical school. The profiling tool could also be
used to analyse strengths and weaknesses, focus resources and investment in areas where it might improve strategic positions of medical schools, and enable medical schools to outline priorities. The findings concur with previous studies which emphasized the importance of visual representation to support strategy formulation (Eden & Ackerman, 1998; Foil & Huff, 1992; Lohse, Biolsi, Walker, & Rueter, 1994; Morgan, 1993; Tan & Platts, 2003a; Tufte, 1990).

The analysis in this chapter provides further empirical evidence that staff within the medical schools perceive that they have substantial element of choice in the positioning of the medical school. The snapshot ‘moment-in-time’ of the performance of the medical school provides further indication that medical schools’ strategies are deliberate and “realized as intended” (Mintzberg & Waters, 1985, p. 257). Figure 16 provides the positions and performances of each medical school.

For the most part, the profiling of medical schools as portrayed in Figure 16 seems to illustrate the alignment between performance (as illuminated from the profiling tool) and strategic positioning (informed by the distinctiveness of medical schools in the previous chapter). While all medical schools have some activities across all dimensions, the visual profiling tool seems to indicate that the performance of each medical school is quite consistent to the strategic positions discussed in the previous chapter. For medical school M1, for instance, their performance in teaching and learning and student profile seems to be quite consistent to the position it has defined for itself. Likewise, the performance of medical school M3 across all five dimensions seem to correspond to its strategic position within the system.

Only one medical school’s performance did not seem to fit the strategic position it has articulated for itself, as described in the previous chapter. While participants in M6 perceived its position to be focused in teaching and learning, research and knowledge exchange, their performance in these dimensions did not seem to measure up. This could just mean that the medical school is not performing as well as it could be in those areas. Additionally, its performance in student profile seems to indicate a distinctive feature for the medical school, one that was not perceived by participants. An in-depth profile of each medical school is provided in Appendix D.
Figure 16: Positions and performances of medical schools
8.6 Summary

The first two findings chapters have presented the empirical findings related to how medical schools view their distinctiveness, and how this distinctiveness is understood and measured in medical schools. This chapter also discussed the utility of planning and monitoring of performance profiles as a tool to inform strategy formulation in medical schools. The implication of environmental forces, as conceptualised in chapter four, on strategy formulation is another important aspect of this study, which will be discussed in the next chapter.
9.1 Introduction

This chapter is the last of three chapters presenting the results of the research. The chapter presents the findings for the third research question:

*What competitive forces structure the medical education industry, and consequently affect strategy formulation in medical schools?*

The results in this chapter are organized into three main sections. The first section discusses the competitive forces within the environment which structure the medical education industry and the impact on strategy formulation in medical schools. The second section discusses the effects of the environment on strategic process within medical schools. The chapter concludes with a discussion of the empirical findings. Because both objective and perceived environments are considered as crucial inputs to the strategy formulation process, participants’ perceptions about the environment are interwoven into the discussions. As perceptions are also participant specific, the analysis of interview data may not necessarily be associated with individual medical schools.

9.2 Competitive forces in medical education

The discussion in this section analyses the medical education industry based on Porter’s five competitive forces of buyers’ and suppliers’ power, threat of new entrants and substitutes, and intensity of rivalry, as conceptualised in chapter four. This will be discussed in turn, with participants’ perceptions interwoven into the discussions.
9.2.1 Threat of new entrants

Porter (2008b) argues that it is not necessarily the actual entry of new competitors but the threat of new entrants to the industry which drives competition and impacts the industry’s profitability. In the medical education context, the Federal government restricts new entry into medical education. For instance, one participant, when asked if the government would let private providers open up medical schools in Australia, replied simply, “they won’t” (P2). Consequently, the threat of new entrants is very low, as articulated by these participants:

*I don’t think we’re terribly affected by competition from private providers because private providers as a rule don’t provide courses that are expensive to teach like medicine, science and science based teaching. They teach in the science if it’s cheap...Business, Law (P9)*

*That’s not a problem for us really. And I don’t think that [is a problem] in any degrees that require a high accreditation standard... that’s never going to happen in the clinical space. (P13)*

As discussed in chapter two, there are many more qualified and capable applicants to accept than there are places available in medical schools. As such, participants did not consider potential new entrants as a threat. As one participant commented:

*So competition [from new entrants] ... well we’re ok. We have enough medical school quota so we don’t have an issue at the moment with numbers. We get lots and lots of applicants. (P3)*

For a number of participants, the potential threat is the increased in competition down the line if new medical schools are established. Examples of such comments are provided here:

*Yes, [emergence of new medical schools] would affect us but down the track a little bit, not immediately. (P9)*
Competition from new medical schools? Yes they can, could make a difference. (P10)

While the likelihood of new entrants is low, participants conceded that the establishment of new medical schools would change the structure of medical education industry, and would have some effect on strategy formulation at each individual medical school. Examples of such comments include:

New medical schools – well that’s a threat at one stage but I don’t think there are any more medical schools on the horizon. (P13)

Well [the establishment of new medical schools] affected [us]. I believe probably some of the cut off scores to get into medicine [were affected] for a couple of years in the 2000s. (P21)

One participant also pointed out that this was location specific. While the establishment of a new medical school would affect the other established medical schools in the particular region, it does not have much effect to other established medical schools outside the region.

They are too far away... So you are not competing at the same [space]. I mean the so called competitors are [name of medical school omitted] and [name of medical school omitted] with the three undergraduate programs in the state... There are so many medical schools in one small state. (P5)

From the analysis of interview data, the threat of new entrants can be seen as low as a result of restrictive government policies that place barriers to entry into medical education. Potential new entrants are likely to modify the structure of the industry but competition from new medical schools is also seen as context and location specific.
9.2.2 Threat of substitute products

The findings from chapter seven indicate that medical schools tend to differentiate themselves through their medical program and curriculum. One particular differentiating factor is whether medical schools offer undergraduate- or graduate-entry programs and increasingly, the Doctor of Medicine (MD). Of the 18 medical schools, half of them offer a Doctor of Medicine. To some extent, this is one way for medical schools to move outside the realm of traditional medical programs to increase the propensity of students to switch to alternatives. From the analysis of the data, the move to MD seems to be more related to attracting international students, and the employability of graduates globally. As these participants commented:

*Well in some ways it is because our students start asking why we are doing an MBBS and not an MD. And certainly if you're recruiting from overseas it’s, if you run an MBBS, you have to spend a lot of time explaining what an MBBS is. Because if you pitting of America, they all have MD’s, so why are they not getting an MD. So it’s part of that as well, so it’s part of marketing.* (P2)

*It is the same program,... MD which is more acceptable in the United States. So for years to come we’re going to have graduates here one with MBBS and one MD and I guess the concern for me is how students will be seen when they apply for a job overseas.* (P7)

However, a number of participants in M2 medical school do not have any immediate plans to shift into an MD. For this medical school, international students are not a key market (P5), it does not fit with the mission of the school (P6) and the outcomes of an MBBS medical graduate are similar to one with an MD even though the former is assessed at a level seven (bachelor degree) as compared to the latter at level nine (masters degree) on the Australian Qualifications Framework (P6, P7). As one participant commented:
But there’s no doubt that students are going to be working side by side as an intern. There’ll be an expectation that we function as a nine even if we were a seven. That doesn’t worry me. (P6)

However, another participant at the same medical school noted that the issue of switching to MD as an ongoing agenda, implying that it affects strategy formulation within the medical school.

There is a lot of debate about that, it’s a standing agenda often on the executive meetings, discuss it every month, what’s the movement in all the medical schools? (P7)

It would seem that the University of Melbourne’s move to the MD changed the underlying structure of medical education. The highly regarded strategic institutional position of the University of Melbourne resulted in other medical schools to copy through repositioning itself to match the superior performer or to match the benefits of a successful position while maintaining its existing position (DiMaggio & Powell, 1983; Porter, 2012). This can be seen from the analysis of the interview data, in that medical schools are increasingly switching to the graduate-entry program, with two out of the six case study medical schools offering a graduate-entry MD, and another two offering a combination of undergraduate- and graduate-entry options. From the industry analysis, the move to MD seems to be related to the recruitment of international students and the employability of graduates in the global market. From this perspective, the threat of substitutes can be seen as a competitive force more globally, rather than one that is local.

9.2.3 Bargaining power of buyers

As discussed in chapter four, students are considered as ‘buyers’ in higher education. In medical education, the distinction between domestic and international student is important because of the regulation around domestic student numbers. An analysis of interview data also found that for some medical schools, the ultimate customers are the patients or society in which the medical schools serve. This section will discuss students and society as ‘buyers’ in medical education.
Domestic students
As a result of capping the student numbers and hence funding by the Federal government, medical schools do not compete among themselves for students. The government put constraints around establishment of new medical schools. There are also many more applications than there are places in medical programs. The lack of competition between medical schools for domestic students was echoed numerous times. Examples of comments by participants are provided here.

*We have enough medical school quota so we don’t have an issue at the moment with numbers. We get lots and lots of applicants.* (P3)

*{New or similar medical schools] are too far away... I’d have to say there is less, in terms of day to day competition,... the competition doesn’t happen over the students because there is more than enough students to go around, and I guess there is a sense that everybody is getting the sorts of students that we want and they are good students, so that is not a problem.* (P5)

Despite the surplus of applicants, there is a sense that some competition is healthy within the medical education industry. One participant advocated for more competition to enable more differentiation between medical schools.

*I actually would prefer if there was more open competition in medical schools. Because we are capped and because our fees are capped, we are not able to segment the market, we are not able to differentiate ourselves in the market, we are not able to really position ourselves because essentially the government is giving a one-size-fits-all policy framework for medical education.* (P17)

From the above it would seem that as a competitive force, domestic students as ‘buyers’ have little or no bargaining power. Despite the limited student bargaining power, there is little strategic agency that a medical school can enact. Restrictive government policies dampen competition between medical schools. Unless the policy
around domestic student numbers and funding changes (see discussion in latter sections), students have limited choices and hence buyer power in medical education is low.

**International students**

The number of international students is set by individual medical schools, and changes which affect international students, impact the structure of the medical education industry and consequently have an impact on how medical schools formulate strategy in this area. For most medical schools, the biggest issue with regard to the international student intake is clinical internships (P3, P4, P6, P10, P17, and P20). As commented by one participant:

*The ability to guarantee internships is probably the biggest change that influences the willingness of students to come... They generally want to complete their training here because it's difficult to get, although not impossible, to get an intern placement back in Canada if you haven't trained in Canada. (P4)*

The availability and requirement for clinical internships vary between countries. As well, as articulated in chapter two, clinical internships in Australia are compulsory for new graduates, there are more applicants for internships than there are available positions; and that domestic students are generally prioritised above other students in the allocation of internships. Hence the ability of international students to gain an internship in Australia is limited, and this impacts greatly on how medical schools formulate strategies for their recruitment of international students.

Participants from three medical schools (M1, M3 and M6) commented on the effect the other environmental factors, such as the economy, and legislation and policies in other countries and systems, has on their international student intake.

*[In terms of] external events, we are limited by where we take international students from Singapore and Malaysia have both decided they will not accredit any more medical schools. (P2)*
I guess the external events that are... mostly affecting our international intake level. Now from time to time we’ve not quite got the numbers that we allowing for... Things like the rising Australian dollar. (P4)

If the Canadian government decided it was going to add another five medical schools in Canada, [there] wouldn’t be so many students wanting to come to Australia, I can assure you. So that’s vulnerability for us. Singapore is just doing that, it is creating more medical school places so we might not get 20 students. (P10)

From the above, it would make sense that medical schools with a bigger cohort of international students would tend to be more affected by these environmental factors than medical schools which do not. But this does not seem to be the case. In terms of the international students enrolment (see Table 12), M1 and M6 have less than 5 percent international students enrolled in their medical program.

Table 12: Number of international students, 2014

<table>
<thead>
<tr>
<th>Medical School</th>
<th>Enrolment of international students (all years)</th>
<th>Percent of total in system</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>29</td>
<td>1.2 %</td>
</tr>
<tr>
<td>M2</td>
<td>96</td>
<td>3.9 %</td>
</tr>
<tr>
<td>M3</td>
<td>263</td>
<td>10.7 %</td>
</tr>
<tr>
<td>M4</td>
<td>139</td>
<td>5.7 %</td>
</tr>
<tr>
<td>M5</td>
<td>134</td>
<td>5.5 %</td>
</tr>
<tr>
<td>M6</td>
<td>77</td>
<td>3.1 %</td>
</tr>
</tbody>
</table>

Source: MDANZ (2015b, 2015c)

It would seem, that despite the small cohort, the international student market can be seen as a source of competition for medical schools. A number of participants explained their reliance on the international market:
Our only flexibility in terms of student numbers is our international intake and we leave that to about a dozen a year. (P4)

International [students] really is left as the only way that universities can get a fair income for their medical education. If we didn’t have any international students, our medical education would be, for our domestic students, would be far poor; the quality would not be there. So they are an absolutely crucial part financially, they are very important in terms of the culture of the place and the mixing of ideas and the philosophy of a liberal education. Having international students is a key part of that. (P17)

Hence, for these medical schools, having an international cohort of students is seen as providing flexibility, increased income, enhancing the quality of medical education, and improving the culture of the medical school. Unlike domestic student intake which is constraint by the Federal government, the number of international students is determined by individual medical schools. As such, medical schools would have the agency to develop strategies around the recruitment and intake of international students. Despite this, as a buyer, international students do not seem to garner a lot of power. As a result of national and international legislation around clinical placements and student numbers, and economic growth, for instance, international students tended to have low bargaining power.

**Patient and society**

The analysis in chapter seven indicates that for some participants, the ultimate mission of the medical school is about how it can add value to the health service and to the society. Hence for these participants, the ultimate customer is the patient and society, as articulated by one participant:

> Probably my third piece of thought... is that when making decisions, don’t lose sight of the ultimate real customer which is the patient at the end of the day. So you need to balance between being a pragmatist and an idealist. (P19)
The notion that society plays a role in medical education, and accordingly affects the choice of strategies adopted by medical schools, is also described by other participants. For P6, the community had a strong influence on the establishment of the medical school at the time, and continue to influence strategy formulation within the medical school. Participant, P20, provided an example of how the community affected the way the admissions criteria were developed within the medical school.

There was a genuine political drive from doctors, politicians and the community... So if you were to say to me what makes this an exciting place to work and how it's different from elsewhere, it's the fact that it came out of a community need—has a strong community sense of representation and involvement, and they continue to be our primary champions for being here. (P6)

I think community. So community is quite a powerful driver and I think the move in medical schools from decades ago probably from the 1970s towards interviewing students on admissions really came from community perceptions that schools weren't producing the sort of doctors the community wanted and a lot of people that could communicate... And again community pressure is actually a very strong influence in that. (P20)

Achieving alignment, where strategy, goals, and meaningful purpose reinforce one another to the needs of the patient and society, provides a medical school a clear sense of their ‘existence’ at any given time. Accordingly, it would seem that from this perspective, a medical school has the ability for planned strategy formulation, as long as they align themselves to the needs of the patient and society. This notion is summarised by one participant as:

The one thing that is stable is society’s need for good healthcare and their recognition that doctors are a crucial part of that. I think [the medical school] has been successful because it has seen that basic value as meaning it can go out, and with confidence in the community, to negotiate for new ways of doing things, and work out where we can draw resources and how
we can do things differently, based on that premise, that we can get better at clinical research, care and education outcomes for our society. And if we keep that objective as being the goal post, then we can have a degree of setting our sails. If it’s purely for maximising profit or maximising income, then medical schools would remain reactive. (P17)

In addition to students, it would seem that within the medical education context, the patient and the wider community/society can also be considered as ‘buyers’. From the analysis of the interview data, the wider community and society has a somewhat moderate bargaining power by demanding better quality healthcare or more service. As a result they have much influence in the structure of the medical education industry. Accordingly, this would impact strategy formulation by medical schools.

9.2.4 Bargaining power of suppliers

In industry analysis, Martinez and Wolverton (2009a, 2009b) argue that suppliers are defined as those organizations or individuals that allow an organization to produce its good and/or services. In the context of the current analysis in medical education, it would seem that those organizations and individuals that supply resources, in the form of funds for medical schools to carry out its mission, can be seen as a form of supplier. Funding for teaching and learning, and research, are sourced from the government, research grant agencies, the university and philanthropic organizations and individuals. Staff, as a supplier of labour, is also seen as a competitive force within medical education industry.

Funding sources

In medical education, organizations and individuals who provide resources, in the form of funds, can be seen as a form of supplier. In terms of funding for teaching and learning, the Federal government and students’ fees through the higher education contribution scheme (HECS) support about 30 percent of the total cost of running the medical program (P10). These are both set by the Federal government and hence medical schools have limited agency in strategy formulation. As a result, the potential fee de-regulation policy introduced by the present government has brought about numerous responses from most participants. Although the policy has been shelved for the time being, discussions have
been ongoing for the last two years within the government, peak bodies, and universities, and have been a constant feature in the media. As commented by one participant.

The proposed de-regulation is something that is exercising everybody’s minds in terms of teaching and learning. What will this mean in terms of how we fund the programs? Where should we set our price points? Should we want to set that at a premium level and then provide more scholarship support? This will affect our student profile...It is a question of how you want to position yourself in terms of reputation. (P12)

Consequently, a change in policy which affects funding has the potential to change the underlying structure of medical education as an industry and impact on medical schools’ agency for strategy formulation. The potential fee de-regulation would mean that students’ contribution to their education would rise. This, on one hand, may lead to an increased funding for medical school, but on the other hand will change the profile of students, as less financially-abled students may not afford to pay the increased cost of a medical education.

The de-regulation scenario [would mean] that the students are going to graduate with a much bigger debt. Students are going to look at that and make choices driven by how quickly they can pay off their HECS debt rather than making career choices in terms of where they are most needed... The other factor is that students who come from rural backgrounds are going to find it harder to attend university if university fees are higher. (P1)

The Pyne changes for example, the de-regulation of fees could affect the faculty of medicine hugely potentially because it could also mean that we could charge fees for medicine, charge appropriate fees for medicine and that could take the faculty out of deficit. (P9)

I think it’s directly impacting on the student profile more than the teaching and learning processes, I suppose. We’re getting a completely different profile now with the [current] model and we will get another change again
if fees are de-regulated because our fees are one of the highest in the university field. And that’s both for local and overseas. (P16)

Funding from the Federal government for teaching and learning is a critical source of uncertainty for some medical schools. Participants, from one medical school (M1), noted this in their comments.

Well it does in the sense that the government has not been forthcoming to universities as to what the level of funding is going to be or the budget for 2015. We still don’t know what the 2015 budget is going to be for the university here. And the same with our rural funding. Although we’ve had indication that it’s going to be continued... there’s no certainty... there’s nothing from government in that either. I’m sure we’re going to get some form of funding we just don’t know how much at this stage. Whether it’s going to be reduced or not. (P1)

The Rural Clinical Training Scheme, the RCTS, runs out at the end of June this year, and we haven’t been told yet whether we are getting more funding. We have been reassured we will but no one knows how much. So that’s restricting, making it very difficult to plan. It makes it very difficult for staff because a lot of the staff contracts run out at that time... so it affects the teaching and learning and to a less extent, research. (P2)

This medical school is relatively new, and do not have the funding trends as well as the track record of more established medical schools. Consequently, the uncertainty surrounding funding affects their strategy formulation, particularly in terms of managing resources such as staff. It would seem that more established medical schools have more stable funding sources hence are better able to plan the way their resources are being utilised. The mission for this medical school is also rural focused (see chapter seven) and hence rural funding would have a more significant impact on their strategy formulation. Consequently, rural funding is also context specific. A medical school that is not highly rural-focussed will not see this as an environmental force which affects them significantly, as articulated by this participant.
There’s not a whole of a lot of impact on us really around rural because we’re not a player in that field and it’s not the majority of our program. But major changes in decreasing funding in the rural environment would mean we would have to constraint our numbers for the [university] because of the decreased number of clinical placements. And limited funding – we get a big chunk of money both from the health department and from rural but not as much as others… so that doesn’t define us. (P6)

The university is another supplier of funding to medical schools. As a smaller entity within the broader university, medical schools rely on a significant amount of their funding from the university. As articulated in chapter two, government funding for universities are decreasing and hence, this will have a flow-on effect on medical schools. As commented by one participant.

[The government is] cutting university budget means the med school budget is cut because that’s just the way it works. (P3)

Participant P10 also noted that the university provided 20 percent of the cost of medical education as cross subsidy from other faculties. However, this is no longer the case and for this medical school, this would mean having to look for other sources of income.

The problem with it now, is that the university is saying that in this university, the medical school has to stand on its own two feet... A program like a medical school which has to have tutorials with six or seven people around the bedside... don’t have a chance in ever being financially viable. So we’ve got the AMC saying that sort of educational model is what we require of you. And on the other hand, we have got the Department of Education which is not funding that model properly. Until now, the university has said, “Well, we understand that but we’ll subsidize medicine from faculties that can easily make money”. So we’ve been ok to this point but now the university is saying, “Well sorry, we are not going to continue that anymore. You go and actually stand on your own two feet”. So that’s created this situation where we have to go out looking for other sources of income,
which, you know is a diversion. We can’t be focussed on our research and our teaching if we are chasing for contracts with the TGA or other agencies. The squeeze is on. (P10)

In terms of funding for research, participants discussed research income from competitive grants. There are a number of agencies, such as Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC), which provide competitive grants to Australian universities. For these participants, funding from these sources is limited due to the fixed number of grants and funding available.

But funding is a big issue for research. Big challenge... you know with the government increasing the competitive environment for a fairly fixed number of grants you can get from the NHMRC. (P12)

The research funding environment is a really tricky situation now because there isn't enough project grant funding for all the fellows. So let alone people who are not research fellows, who are not, you know, research only. And yet to have the most effective research, [the medical school’s] belief is that you are better getting people who are in the clinical practice and are doing some teaching as well as research, rather than just doing research and potentially going down a burrow that doesn’t have any light at the end of it. So we’ve created an environment where it is increasingly difficult to balance research, teaching and clinical services and my personal view is that it’s not a healthy environment. (P17)

Additionally, one participant criticised the allocation of research funding by these agencies. The contention is that the agencies award the majority of the funding to only a small number of ‘elite’ researchers. In this specific case, the participant noted that the priority for the medical school is to increase income through research revenue, for example via external contracts etc., rather than grant monies.

For Australia, the grant funding approach to funding research is dying. In the Netherlands, for example, now there’s a big row going on because
people have done the math... the typical 20 percent of the researchers attract 90 percent of the funding. (P18)

The other source of funding is the people or organizations that bequeath money to medical schools. Approximately 10 percent of Australia’s total philanthropic donations were donated to health and medical research in 2014 (Kerin, 2014), and this has the potential to change the structure of medical education, and consequently, affect strategy formulation in medical schools.

There are terrific opportunities for people to get a ‘name’ on a building, and there is a lot of money around. No shortage of money... I think the real room for improvement there, talking about strategic plan, is you got to invest in a team that’s dedicated to [philanthropy]. (P7)

And increasingly universities are going to have to chase money outside and you can’t just do that overnight in my opinion... You got to play a whole new game. (P13)

There is the group [of medical schools] that have significant investments and philanthropy built up over time and there is a group that don’t. And they are chalk and cheese because once you get those other investments, that means you can then attract research fellows because you can pay them a top up, or pay them a start-up, or pay them, you know, more money. (P17)

For these participants, they perceive some strategic agency in how they plan for philanthropic investments. Additionally, the availability of funding through philanthropic sources would mean that medical schools would have more flexibility in the way they implement strategies. But interestingly, none of these medical schools (M2, M4 and M6) are rigorously pursuing deliberate strategies to improve philanthropy. The reasons are unclear. For at least one of the participants (P13), it is not something you can do overnight; and involves individuals learning how to ‘sell’ the medical school and ‘ask’ for endowments, a skill which needs to be learned and mastered.
The analysis in this section seems to indicate that competition for funding is a source of rivalry that can structure the medical education industry. Medical schools tended to align their strategy to that of the environment, in this case with those who control external resources. For example, medical schools are looking at various strategy options if the fee de-regulation were to be implemented.

*There has been some strategizing in anticipation of where that’s going to jump but nobody one wants to waste too much energy doing them because they might change again tomorrow.* (P5)

*But you’ve got to watch it and be aware of it. I think for that one we just wait and see... You have to be reactive. My approach to strategic planning is the best way to be reactive is to have already some idea of how you might feel when it happens.* (P19)

However, there is also a sense that policy changes which affect funding will not affect the overall direction of the medical school. Indeed the mission of the medical school will remain but the strategies to achieve this may change.

*I don’t think it should change the mission of the school. But it could negatively impact on our success. But I don’t think it’s going to change the mission. [So the position of the school] will remain... We’re going to have to find creative ways to overcoming those obstacles.* (P1)

*So I want to see the final print in the de-regulation and what impact it would have on our students in particular... I think that the feeling here is that if it’s de-regulated, it’s de-regulated and we’ll just keep going. That’s my guess.* (P7)

The procurement of external resources is an important tenet of both the strategic and tactical management of a medical school and consequently affects the ability and desire for medical schools to negotiate their positions within these constraints (Pfeffer & Salancik, 1978). As one participant commented:
There needs to be more funding available and there needs to be more discretion with funding for me to do the sorts of things that I think are essential to improve the position of the school. (P9)

Indeed, another participant remarked:

*It essentially comes down to—you’ve got fixed commitments to teaching and you’ve got a fixed amount of income—so unless you can increase your income, there are limits to what you can do with that.* (P12)

It would seem that organizations and individuals which provide funding to medical schools can be seen as a form of supplier, which can restrict or expand the competitive nature within medical education. Designing strategy around critical resources and capabilities imply that medical schools may limit its strategic scope to those activities where it possesses a clear competitive advantage (Grant, 1991). A third of the cost of medical education is obtained from the government and student contributions, which are controlled by the government. Consequently, in that domain, medical schools seem to have very limited strategic agency. The other two thirds of the cost are sourced from research funding agencies, the university and philanthropic sources. From the above analysis, due to the limits or difficulties associated with these, medical schools are increasingly looking at other sources of income. Therefore, despite being an onerous process, medical schools would tend to have strategic agency in the way they plan for resources, for instance, through emphasis on distinctive research areas and funding streams, or their relationship with the university, or the way they plan for endowments. In that sense, it would seem that the organizations and individuals, who provide funding, should be recognised as ‘suppliers’, and have high bargaining power in the medical education context.

**Staff**

Highly skilled labour in the form of academic staff is another form of supplier power. It would seem that in medical education, there are more positions than there are qualified staff. As one participant commented:
There is a shortage of staff within a number of specialties but there is a
general shortage of medical staff and attracting medical staff to [the region].
And it’s a continuing problem. It’s a continuing major problem. (P7)

In the medical education context, not only is there a nation-wide shortage of
doctors, but the overall distribution of doctors is skewed heavily towards the major cities
such that regional, rural and remote areas assume a disproportionate workforce shortage
burden. There is a strong preference amongst much of the current medical workforce to
live and work in major cities, not only for the lifestyle and the relatively higher pay, but
also for the reputation of the more established medical schools and hospitals in metropolitan
areas. This comment made by a participant captured this.

Just last week on Monday,… a neonatologist said, “I am very happy here,
though I have just been offered a job at [name omitted], what do you think
I should do?” She said, “I have always wanted to be a specialist at [name
omitted] but I am very happy here”. And I am sure she will take the job and
I don’t blame her; but that means we are losing a very highly qualified
person,… she sees a future for herself in a much bigger role. (P7)

Medical schools keen to boost their research reputation are increasingly recruiting
or poaching of staff from other medical schools. At one medical school, a participant
bemoans the fact that as a result of increased research performance, its staff were getting
recruited by other universities.

So what we tend to see is relatively strong research performance – or a
research performance that’s similar to the Group of Eight but with a staff
profile that looks more like the non-Group of Eight universities… The first
thing is that it puts us vulnerable to having our staff poached because we’re
research active enough to produce staff that other people might – or the
bigger people – would like. So we train them, then identify them, then they
get poached. So that does make us more vulnerable. (P12)

This sentiment is reiterated by other participants. For P9, recruitment of staff would
be a priority if there was additional funding. For P17, getting good quality staff is seen as synonymous to a highly regarded reputation.

*What would I do if I had the money? I would hire more research staff to improve the research profile of the school and I’d have funding to support the new academic staff that we hire because at the moment we have to hand so much teaching to them that we just crush them. That’s essentially the two sorts of things I would do.* (P9)

*For the clinical service it’s the basis that we’re working to what extent are we turning around their difficulties in recruiting staff. Are they able to now recruit the brightest and best because they are related to our university? That’s a clear outcome for us.* (P17)

Accordingly, for many medical schools, retaining good quality staff is of paramount importance. This is summarised below by these comments:

*I’m thinking more in terms of attracting the best people to medical school and making sure that they stay...if the school can’t provide [the research infrastructure] and the university is not providing [the research infrastructure], then they will start looking elsewhere... How well do you look after your staff, are you attracting [the best], do you have equity?* (P5)

*The strengths of us is the academic and professional staff who work and are paid within the university, but also this much, much larger group of honorary staff who work with us, who teach our students, who do research but not paid by the university and so on and places like [name omitted] in which they hold honorary appointments but their predominant work is within institutes.* (P15)

From the analysis of the interview data, staff would seem to have considerable supplier power, from the point of choice of locations to work in, their pay and their working conditions, as well as the availability of good facilities and infrastructure.
Their supplier power would also seem to apply to teaching and learning, and research within medical schools, as commented by these participants:

I think in terms of pedagogy and what the curriculum looks like, and how you might teach it, and what you hope to get out of it and students get out of it, I think that’s very much in the hands of the medical school staff of the medical school.

That we have employed good people and we have kind of gotten out of the way and said this is the research agenda you develop and we’re very happy support you in the way. (P15)

From the analysis of the interview data, it would seem to indicate that staff has high bargaining power within the medical education context. Research staff have more bargaining power than teaching staff, particularly those who conduct good quality renowned research in specific specialties. With shortage of doctors and medical researchers across the board, staff as suppliers have considerable bargaining power in medical education.

9.2.5 Intensity of rivalry

In the medical education context, sources of rivalry come in the forms of competition for clinical placements, funding from research income, and academic reputation. The intensity of rivalry is very much context and focus specific—not all Australian medical schools collectively compete in these things and at the same time. In addition, participants highlighted the collaborative nature of medical schools, which will be discussed thereafter.

The number of internships and funding for clinical placements is broadly controlled by the Department of Health or Human Services in each state and territory, and reflects the service needs of the intern training institutions and the number of graduates in each state who are Australian citizens or who have permanent resident status. Each state varies as to whether application for internship is made to the Health Department, a Postgraduate Medical Council or individual hospitals. Consequently, there will be differences on how a medical school in two different states compete for clinical placements (P3, P5, and
P7)—depending on the state the medical school is based in; the agencies which administer it, and also the relationship each medical school has with the respective organizations. As one participant commented:

*I reckon, in [name of state omitted], we’re losing an opportunity by not having clinical placements in private hospitals. I’ve tried to approach it but nowhere. I’ve tried different ways but nowhere. And I know in [name of state omitted], they do it much more than we do. (P7)*

Another participant commented on the excessive amount of resources expended in vying for clinical placements.

*The more competitive area is in clinical placements... we spend an enormous amount of energy and time and resources managing relationships with health services because we have to compete with these other medical schools. If all that time and energy was spent on improving the program we probably would have a better medical education system. (P5)*

As can be seen from the analysis of the interview data, competition for clinical placements is state-specific, and greatly influenced by political and social factors in each state. As well, as can be derived from the last comment, changes in how medical schools compete for clinical placement, has the potential to alter the competitive structure of medical education.

The analysis in the previous section indicates that competition for funding is a source of rivalry that can structure the medical education industry. Medical schools tended to align their strategy to those who control external resources. In particular, participants discussed competition for research income, which according to them is context specific. At two medical schools (M1 and M2), where the focus, in recent years, has been on the establishment of the medical schools, competition for research income is low on their priorities (P2, P3, P5). At another not-so-young medical school (M4), one participant sees its competitors as the more established medical schools within the Group of Eight.
How do we compete with [name of medical school omitted] and [name of medical omitted] and the others? Maintain our market share of that. Where else do we do to diversify our sources of research funding? So that’s a big piece of work that we do. (P12)

The analysis of the interview data indicates that competition for academic reputation is prevalent in medical education. Participants tended to look at academic reputation associated with rankings—both national and international, and at discipline and university levels. One participant summarised this as follows:

You can identify medicine internationally and nationally in terms of your rankings as a subject. And obviously universities compare their rankings as whole universities... Within the Australian context the rankings are fairly constant. So [the medical school] for what it’s worth usually ranks about 9th or thereabouts 8th or 9th. We, in that sense, would probably want to make sure that we’re maintaining that position in the face of the kind of other middle ranking medical schools... I think it’s quite a big jump for us to move up into the next level – into the Group of Eight – where we sort of aspire to do. Internationally it is a much more fluid situation because you are looking at a significant increase of medical schools globally but more particularly what we’re seeing is enormous amounts of medical schools in regions where we didn’t rank before. And now we’re in the much higher profile. (P12)

As can be seen from chapter seven, a highly regarded research profile is seen as key to increased reputation and prestige of universities. Participants from the younger medical schools (M1 and M2) acknowledged the lack of research intensity within their medical schools. As such, these schools, in their current positions, are not necessarily competing for academic reputation internationally or nationally. For those who are not necessarily competing for academic reputation through research performance, the same participant observed:
Rankings are very heavily weighted in terms of research performance rather than the quality of the medical education. It’s generally assumed that because of the AMC, all medical schools that are accredited in Australia produce similar quality graduates. It shouldn’t make much difference which medical school you go to. But I think what we are looking at increasingly, and this is just a personal opinion, is a differentiation between the medical schools where we each seek to carve out a niche reputation. So that not all medical schools are exactly the same…not just only in research. (P12)

Consequently, the medical school’s playing field defines, to some extent, who its competitors are. Indeed the playing field for one medical school would differ for another, as commented by one participant:

The horizon and perception of influence for our medical school is global…Where else other medical schools may have a more local view and their mission revolves around the provision of rural workforce and research around the provision of health care in rural and remote settings, and that is reasonable. (P15)

For this participant, the medical school (M5) is focused on building relationships internationally, with institutions and organizations overseas, as well as nationally, with partner research institutes. However, there is little, if at all, competition with other Australian medical schools. In another medical school (M6), because of its location, there is active competition for quality students within the state it is located, and because of the phase the medical school is in, it is also increasingly competing in the national and international arenas to increase academic reputation (P20). At another school (M2), one participant commented that because of the youth of the medical school, it does not compete for academic reputation with the more established medical schools, nationally or internationally (P5).

The intensity of rivalry depends on the object of competition. In the case of medical education, this includes specifically, clinical placements, funding in particular for research, and academic reputation. From the previous section, competition can also come in the form
of academic staff, particularly those with specialist knowledge and or renowned research. As can be seen from the above analysis, medical schools compete on different dimensions and depending on their context, the intensity of rivalry is variable. Additionally, collaboration among medical schools was emphasized by many participants, discussed next.

**Collaboration between medical schools**

The collaborative nature of medical schools was highlighted by many participants. The more established medical schools, for instance, have provided curriculum (albeit for a price) and provided active support for the initial set-up of new medical schools. As one participant puts it:

*If someone didn’t help us, we wouldn’t be here. And I don’t... get across into the castle, pull up the draw bridge. And no one wants to do it. We see ourselves as a participant. And I’m quite magnanimous about that. If the best solution for providing doctors was a different structure for our school or others, then I think we should be driven by that need rather than some view that this was a duel for the university to have in its own right. (P6)*

It is interesting to note that a participant from another medical school (M6) sees this sharing of curriculum as a form of competition. For this medical school, being able to position its curriculum distinctively from others has provided it financial gains, not only nationally but also internationally.

*Yep. Essentially [the medical school] has been quite active in supporting new medical schools. And again there’s a competition element to that... the school has been involved in marketing its curriculum to other schools. So [the medical school] has been opportunistic. (P20)*

The collaborative nature of medical schools extends to other areas of activities. Particularly through the MDANZ, medical schools collaborate on a number of projects and activities covering clinical training placements, workforce planning, Indigenous health, policy guidelines and recommendations, benchmarking, competencies, and rural and regional health.
We do benchmarking with other medical schools. So ours is all about outcome to be honest. I mean personally I don’t care where we rank. But what’s important is we’ve got good graduates and good research and so we are members of a number of consortiums. (P3)

There is a medical education collaborative committee established by the medical deans, action group of people of all universities coming together, working together and there are individual projects looking at sharing the material and collaborating… There’s a couple of these collaborations and I think it’s from inside the feeling that we don’t have to compete for students yet so why would we not share materials. (P18)

It is interesting to note that in the analysis of interview data, participants seemed to emphasise collaboration rather than competition among medical schools. Because medical schools do not compete for domestic students and because competition for clinical placements, research income and academic reputation is context and focus specific, the extent to which the effect competitors have on strategy formulation is not homogeneous across the medical education sector. Consequently, while rivalry as a competitive force within the environment can affect strategy formulation in medical schools, the degree of effect will vary between medical schools.

9.2.6 Regulatory bodies

From the analysis in preceding sections, the role of regulation seems to have a large influence on the competitive forces within the medical education industry. In the context of medical education, regulatory influence does not only stem from the government but also from health agencies, the AMC as an accrediting agency, and the broader university. Accordingly, it is imperative that a section be devoted to the discussion of the influence of regulation within medical education.

A number of participants see government as affecting reporting and compliance requirements in medical schools, which is in line with their funding agreements.
We also have to report to the Federal government for our rural funding. There are certain details that we have to communicate. So we have to do that every six months. So that’s a regular issue. We just have to face up to them and we just have to make sure that the money we use is used in the way that it’s intended to be used because we have to account to the Federal government every dollar that we spend. (P1)

And then of course with the medical program there’s the additional complicating factor of the Federal government’s having to meet the need of two universities instead of one for the medical program. (P12)

Comments made by participants seem to indicate that, in its current state, the medical school’s responsibility for meeting the government’s reporting and compliance requirements affect operational effectiveness rather than strategy formulation. However, there is a sense that any changes in government’s policy will affect the structure of medical education as an industry, and consequently medical schools’ strategy formulation. One participant, for instance, commented:

[The Transforming Health Review] is going to have a big impact on us… It will reduce our ability to provide the sorts of [clinical] placements we need. It will restrict the numbers of students that we can take in. (P20)

The sense that government policy changes have affected strategy formulation is summarised further by this participant. Looking historically at a number of strategies undertaken by the medical school, this participant suggested that changes within the school have been driven to a large extent by the government.

Obviously at the top level there’s no doubt that policy changes can result in impacts across the board… Quite a lot of innovations that the school has actually been engaged in has been dictated by government policy changes. And the move to the graduate entry has, this has been in the public demand, was a response to the threat which was at the time, which in the 90s the government wanted to downsize… medical schools. And of course now
we’ve had a whole shift of pointing the position to the graduate entry was a shorter and quicker course and offered something new that was educationally innovative that solved problems. It solved not problems, but provided solutions internally for the challenges of education and solved well in the broader sense of the environment. So I think government policy is a huge impact. (P20)

Interactions with health agencies appear to be about managing relationships, expectations and compliance. For example, for participant P3, the extent to which these health agencies affect the medical schools is through the reporting and compliance requirements. For P19, it is about managing the relationships between these external stakeholders.

*AHPRA tells us what to do, and we just do it... They do affect everything but some of it you just have to do. Ok, we don’t have a choice. (P3)*

*So the regulation bodies, the professional regulation bodies, etc. and again it’s about having partnership arrangements with them and having engagement and involvement with them. So we try and contribute to those people. (P19)*

The lack of coherent coordination in all aspects of medical education and training observed a decade ago (Dowton et al., 2005; McGrath et al., 2006), still seem to be quite apparent. Between agencies, communication seems to be inept, processes uncoordinated and objectives misaligned. Examples of comments by participants are provided here.

*I don’t think they talk to one another enough. When Health Workforce Australia was established, it was doing things that were at odds with the Department of Education. And trying to get the two government agencies to talk to one another was actually quite challenging... It means that we can easily tend to become somewhat reactive. It’s hard to have strategy... so our ability to have a strategy that really is about promoting excellence is limited. This frustrates not just this medical school. (P10)
So here you have the number of overall domestic places set by the Australian government, the number of international places set by each university and the number of internships places set by the state government. And it's an unresolved issue and it's been very difficult for students. And it would be comical, if it wasn’t people’s careers. It's ludicrous. (P21)

It would seem that health agencies, as a regulatory force within the medical education environment, affect strategy formulation in medical schools. However, the inefficiencies between the agencies tend to make medical schools more reactive than they would like to be. From the analysis of interview data, it would seem that medical schools are better able to align their strategies to the effect of policy changes within health agencies, if the relationships between them and also between medical schools are better coordinated.

The Australian Medical Council (AMC) is an independent national standards body for medical education and training, and provides accreditation for Australian medical schools. The AMC sets the same minimum standards in which all medical schools have to fulfil and for some participants, they see this as a compliance matter.

We’ve had no problems with accreditation thus far but it’s sort of something that you have to deal with every year. Accreditation cycle is always the concern that they’re going to find something they’re not happy with. But you just have to deal with that when it comes. (P1)

Most participants did not see AMC as limiting what they can do in terms of positioning their medical programs.

I think the AMC informed us very highly. I use that as a bit of a tease to say that’s improved [the medical program] because this is something that the AMC would look at. Only because I think it genuinely represents something that would improve the quality of the course. And therefore put us in good standing with the AMC but I’m not threatened by the AMC. I’m not worried about our standing. (P6)
There is a change in the accreditation process and it’s changing to become an ever more real evaluation… They have tightened up the documents, they have tightened up the criteria on which to judge, they have tightened up the conclusions that can be drawn, but in a good way. (P18)

The above comments suggest that medical schools align their teaching and learning strategies to the minimum standards set by AMC. Above and beyond that, the analysis of the interview data seems to indicate that medical schools have the strategic capability to position their medical program in distinctive ways. This is aligned with the discussion in chapter seven on how medical schools position themselves in terms of their teaching and learning.

One medical school commented on an overseas accrediting agency’s refusal to grant accreditation to its program. For this medical school (M1), this limited their international student intake to particular regions and countries. This has a flow on impact on how they develop their international strategies.

The other thing I guess that has an impact on this is accreditation. So we, in Malaysia and Singapore for example, our degree is not accredited… Not because they’re not accepting any new ones but because we don’t meet the criteria. And that’s a problem cause that means we can’t recruit students from Singapore or Malaysia because they’re not accredited… It [is an issue] because the market we currently have is Canadian and U.S. students. And that market has changed significantly recently across the board for all universities. So it’s really hard for us to get into the new market. (P3)

The university is also seen as a body that regulates what the medical school can or cannot do. Many participants see the broader university environment as “driv[ing] our activities” (P5), for which staff spend significant amount of time trying to “put out the fires” (P1) and “bridge the two worlds” (P17). As one participant remarked,

Internal, probably harder to deal with. University bureaucracy and risk of nature makes it harder to do and enact good strategic planning. Yeah, the
central university service is a bit like fighting with your hands tied behind your back. (P19)

Internal re-structures seem to be the norm in many universities. At one university, for instance, there was a university and faculty re-structure as well as two re-structures within the medical school in recent years. There was a lot of “sense-making” (P20) required as a result of the re-structures. At another university, where the medical school was re-structured to become part of a bigger faculty, one participant commented:

We constantly have to explain why running a medical course isn’t the same as running a fine arts degree, or a geology degree or a chemistry degree. It’s a very different approach... We are much more accountable now to people at a lower level than to the Vice-Chancellor. There are various things that we constantly have to explain to try to make people understand... We try but we don’t always win. You just have to constantly fight the battles. You spend a lot of time, it takes a lot of time unnecessarily to try to put out the fires. It’s very time-consuming. (P1)

At another medical school (M2), one participant indicated that the youth of the university was an attributing factor to increased bureaucracy within the institution. This participant attributed this bureaucracy to the amalgamation of nine TAFES—with different cultures and different campuses—into one university.

I thought being a new university and being in a circle of dynamic area and a new medical school, there would be a less bureaucracy. But it’s not... An early on, it became very clear that some of the sites were very feral... To bring it all under control, they had a highly centralized and bureaucratic system and a set of approvals and processes. (P5)

Leadership came up as one of the factors within the broader university that affect strategy formulation in medical schools. In some medical schools (M1, M2 and M6), there may be tensions between the visions or ideals of leaders at the university and medical school levels.
The Vice-Chancellor has decided to have a pre-med degree... It will take off because the Vice-Chancellor has said that it will take off. (P4)

Our new VC has very much, much more internationalization, globalization focus... One of the things I commented on was that the whole social justice ethos of the university as a whole and within which the medical school fitted is now diluted. (P5)

Indeed, participants from another medical school remarked:

So the Vice-Chancellor would get a bright idea and then that tends to disrupt the place for a while. (P19)

We’ve had a new Vice-Chancellor begin. And everybody has been trying to second-guess the new Vice-Chancellor and the direction that he will take. (P20)

The biggest challenge for medical schools seems to be governance and leadership within the university. There seem to be tensions between the overall strategic direction for the university and the medical school, lack of understanding on how a medical school is run and managed (in particular in terms of cost, curriculum, and staff), and divergent visions between the university’s and medical school’s leaders.

From the above analyses, it would seem that the influence of regulation is a force within the medical education environment that shape the form and level of strategy formulation that a medical school conducts. The current government policies and legislation affect organizational effectiveness, and policy changes brought about by the government has the potential to re-structure the medical education industry. This seems to be the case for health agencies as well. Medical schools tend to align their teaching and learning strategies to the AMC, because not doing so may have adverse consequences. For most medical schools, the broader university, as an environmental force, provides the most significant effect in terms of their ability to develop strategy.
9.2.7 Other environmental factors

Participants see the environment factors as influential and important but are not necessarily affected by them in direct ways. Examples of comments from participants to that effect, are provided here.

Yes, changes to immigration laws that does affect us. But again indirectly. (P9)

The external events, I think immigration laws are all, of course, are an issue but labour market is a big issue in terms of higher education [generally]. (P18)

External... that’s tricky. It’s very difficult to do much more than to do as a citizen to keep an eye on what’s going on. But if a war broke out tomorrow then it would catch everyone by surprise and we would have to deal with it. (P19)

Yeah. I think that where strategic planning we have to take into account the changing social norms... I think probably one of the intriguing factors to think about in the strategic planning is not just confined to running a medical school but it’s engaging with a different society. (P19)

International trends definitely are influential and important. Certainly in terms of teaching and learning... the technology-enhanced education and that sort of things. International transact learning are all important... Labour market is important. (P20)

For these participants, they view changes within such environmental factors, for example, the immigration laws (P9, P18), the labour market (P18), societal changes (P19), and technology (P20), as something medical schools have to keep an eye on, in order to assess their impact on the competitive forces within medical education. The strategic significance of these environmental factors are best understood through the lens of the five forces (Porter, 2008b).
9.3 Strategy formulation process

Strategy formulation in higher education takes into account the interplay of forces between the internal and external environments. There is some form of sense-making (P18), recognising the key relationships which need to be maintained (P3, P15), and understanding the sphere of influence (P15) and playing field (P5). Medical schools have to deal with tensions between key actors, for instance between hospitals and universities (P7); and uncertainties with regards to government funding and policies (P1), while at the same time balancing internal capabilities such as staff (P2).

There is an overwhelming consensus that strategy formulation process in medical schools is mostly deliberate—whether planned or imposed. Three participants (P3, P9, and P12) perceived that there is little strategic agency for medical schools and the formulation of strategies are mostly externally driven; and hence imposed upon medical schools. There is a constant struggle between intention and responding to external factors; and a lot of effort is focused on the latter such as reacting to new leadership, government and the health service sectors. Examples of comments from these participants are provided here.

*It’s mainly driven externally... There are a lot of things that we would like to do but we just can’t do them.* (P3)

*Given the flexibilities that I don’t have I’d probably have as much time in genuine strategic planning as is useful... A huge amount of what I do is just managing.* (P9)

*[The external factors are not] wholly imposed on us... [But] because there’s only so many things we can do and by the time we comply with external requirements for university plus what the Vice-Chancellor wants to do plus the head of the faculty wants to do, it doesn’t leave a lot of time and energy to do a lot more.* (P12)

Additionally, participant P12 noted that within this limited capacity to develop planned strategies, there are constraints around the breadth of possible paths for medical
schools to go down. This seems to indicate that the concepts of equifinality (Macmillan & Guth, 1985) and the ‘garbage can’ (Cohen, March, & Olsen, 1972) are very limited in medical schools. Medical schools can only choose from a limited range of paths and solutions to reach the same or similar positions. This is align with the positioning school of thought, in that strategies are generic and identifiable positions in the market (Mintzberg et al., 1998).

So yes I have a range of options but the solution is going to be pretty similar from one medical school to another basically... I would be surprised if I gave you a list of things that I would do to enact an increase in publication [for instance], I bet you would get the same list from every other medical school. (P12)

A number of participants perceived strategy formulation in medical schools as partially planned and partially imposed by external factors. For these participants, strategy formulation process is a constant balance between planned and imposed (P5), the ability to balance this is a quality inherent in each individual (P13), and is imposed because medical schools cannot plan for the “unplannable” (P19).

I think it is a constant balance between the two... we constantly strategize and plan ahead and anticipate and constantly doing environmental scans of what’s going on. (P5)

It sort of depends on what sort of person you are. Probably told to do a lot of things but I think I kind of do what I think I would be effective at... You can’t do everything. (P13)

To be honest a fair bit of reaction is happening. It probably comes out to be at least 50-50... because the curve balls keep coming. Political curve balls, economic curve balls. (P19)

While these participants perceived strategy formulation within medical schools as quite reactionary, and hence imposed by external forces, some also believed that it is a
“purposive reaction” (P3) or “informed reaction” (P19) rather than just a “knee jerk reaction” (P19). As one participant explained, there is some scenario planning that goes into planning for uncertainties in the external environment (P5). In that sense, it is not purely imposed.

However, all other participants perceived a significant amount of planned strategy formulation in medical schools, which is deliberate in nature. Despite the ongoing uncertainties in the external environment and the tensions between internal capabilities and external forces, these participants observed that there was a significant amount of strategic agency in medical schools to formulate planned and deliberate strategies.

*With this medical school, it’s 100 percent deliberate.* (P4)

*There’s a planning involved in all of that. I’m not being reactive to anything.* (P8)

*I think more and more it’s around the edges and what you can do outside the core of training doctors.* (P11)

*I think [the medical school] have a lot of control over their own destiny, in our university. Not greatly affected by internal things. External, of course, we are subjected to the same things... But I think they have quite a bit of freedom to determine their own destiny and strategies.* (P14)

A number of explanations were offered for medical schools’ ability to conduct deliberate and planned strategies. For instance, a number of participants noted that changes to policy create nuances in strategy formulation but maintained that the position of its medical school will not change as a result of these external factors.

*Well I think as far as this medical school is concerned I think it’s been a very deliberate strategy to have a regional and rural focus. And everything is being set up around that. I think it’s going to continue. Of course other factors play a part but as I said before, the way things are going, changes that*
are happening at university level and at a government level aren’t going to change the mission at this point in time. I guess if the crunch really came and we lost our rural funding, then we might have to rethink but we certainly will fight really hard to keep that position, maintaining that position. (P1)

It doesn’t threaten us at all… [The government] may cap students and fees, force scholarships, cap international students… There may be a change in compliance around where the money comes from… but it’s business as usual really. (P6)

Another participant noted that external uncertainties were a feature of higher education and being reactionary to these forces were not prudent.

Nobody one wants to waste too much energy [strategizing in anticipation of what might happen] because they might change again tomorrow. (P5)

Despite the ability and opportunity for planned and deliberate strategic formulation, some participants conceded that medical schools do not do enough purposive planning. Participants pointed to the culture of the Australian system, rather than one associated with medical schools for this adhocracy (P18), and risk-averse nature of universities (P19) and particular leaders (P5). One participant remarked:

I think that the intentional planning isn’t well communicated when it’s happening [within the medical school]… And there are times when this school was very strategic, undertook good strategic planning. So I know it can happen. (P20)

Over time, medical schools may evolve and so too their positions within the system. Participants identified a number of reasons: due to the different phase of its life cycle (P5, 6, 17), changes to external contexts (P5), changes in the playing field (P3, P20), changes in leadership (P20), and emergence of new opportunities (P7). Participants used terms such as “morphing” (P6) and “organic strategic planning” (P5) and “orienting” (P17). As one participant noted:
So I think there has been a nascent strategy, almost organic, but whereas now it’s more explicit. (P15)

It would seem that effective strategic leaders, as compared to operational leaders, who can formulate and execute strategies to produce desired results, are seen as critical in leading change in medical schools. Some leaders are very successful in operational and functional roles but are not necessarily able to look beyond the everyday matters to identify and exploit opportunities and strategize in ways that may take the medical school ‘out of its comfort zone’. Additionally, the comments by these participants seem to suggest that in some medical schools strategies can be realized despite planned intentions. The leaders provide a ‘vision’, which offers a general sense of direction and within it, at least in the case of these two medical schools, there is room for adaptation.

The planning changes when opportunities come along. (P7)

There’s subtlety to this and you can’t be held to the plan because you know sometimes the shining new thing in the periphery of your vision is actually the thing that you need to grab hold off, and sometimes it’s the thing you need to ignore and I suppose that’s what good leadership is all about. (P15)

For the most part, it would seem that strategy formulation in medical schools is (or can be) deliberate. The responses of participants are summarised in Table 13. Because of the inherent nature of the medical system environment, for example as a result of the government’s control over domestic students and funding, some strategies are imposed. Additionally, a strategic leader may identify and exploit opportunities and consequently, strategies may emerge over time.
Table 13: Strategy formulation process

<table>
<thead>
<tr>
<th>Medical schools</th>
<th>Participant</th>
<th>Planned strategy</th>
<th>Imposed strategy</th>
<th>Emergent strategy</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>P1</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>Yes</td>
<td>Some</td>
<td>N/A</td>
<td>However, there are constraints surrounding the external environment which the medical school may respond indirectly.</td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>No</td>
<td>Yes</td>
<td>N/A</td>
<td>Strategies are externally driven.</td>
</tr>
<tr>
<td></td>
<td>P4</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Medical schools</td>
<td>Participant</td>
<td>Planned strategy</td>
<td>Imposed strategy</td>
<td>Emergent strategy</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
<td>------------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td>M2</td>
<td>P5</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
<td>“Organic sort of strategic development and a little bit on the run but it is quite purposive”.</td>
</tr>
<tr>
<td>P6</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>“The formation of the school 100 percent reactionary to political imperative” but going forward, it is about “partnership” and meeting the need of the community.</td>
<td></td>
</tr>
<tr>
<td>P7</td>
<td>Yes</td>
<td>Some</td>
<td>Yes</td>
<td>Strategies are planned but can also be emergent. The establishment of the school was reactionary but in the ensuing years, the program has been “clinician- and academic-led”. But also “the planning changes when opportunities come along”.</td>
<td></td>
</tr>
<tr>
<td>P8</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>Strategies are planned. [in his role and within the particular unit].</td>
<td></td>
</tr>
<tr>
<td>Medical schools</td>
<td>Participant</td>
<td>Planned strategy</td>
<td>Imposed strategy</td>
<td>Emergent strategy</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
<td>------------------</td>
<td>------------------</td>
<td>-------------------</td>
<td>----------</td>
</tr>
<tr>
<td>M3</td>
<td>P9</td>
<td>Some</td>
<td>Yes</td>
<td>N/A</td>
<td>20 percent of the time is planned. “I would say that probably 80 percent of my time is responding to external pressures and only 20 percent is spent in actually being able to be strategic”.</td>
</tr>
<tr>
<td>P10⁵</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>P11</td>
<td>Yes</td>
<td>Some</td>
<td>N/A</td>
<td>Strategies are increasingly deliberate. “More activity is happening outside that traditional core”.</td>
<td></td>
</tr>
<tr>
<td>M4</td>
<td>P12</td>
<td>Some</td>
<td>Yes</td>
<td>N/A</td>
<td>20 percent of the time is planned. Most of the rest is driven by the broader university which is in turn a response to the market.</td>
</tr>
<tr>
<td>P13</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
<td>Depends on person you are. I can be deliberate in the “few things where I think I can make a difference”.</td>
<td></td>
</tr>
<tr>
<td>P14</td>
<td>Yes</td>
<td>Some</td>
<td>N/A</td>
<td>Strategies are mostly planned. The medical school has “quite a bit of freedom to determine their own destiny and strategies”.</td>
<td></td>
</tr>
</tbody>
</table>

⁵Due to time constraints, participant did not respond to this question.
<table>
<thead>
<tr>
<th>Medical schools</th>
<th>Participant</th>
<th>Planned strategy</th>
<th>Imposed strategy</th>
<th>Emergent strategy</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>P15 (^6)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Not applicable.</td>
</tr>
<tr>
<td></td>
<td>P16</td>
<td>Yes</td>
<td>Some</td>
<td>N/A</td>
<td>Strategies are planned. However the model is 100 per cent driven by the broader university; and hence imposed.</td>
</tr>
<tr>
<td>M6</td>
<td>P17</td>
<td>Yes</td>
<td>Some</td>
<td>N/A</td>
<td>Strategies are planned and also “adaptable and responsive to the environment”. Depends also “at what level of the strategy you are talking about”. For instance, teaching and learning is 100 percent planned while research is still quite investigator driven.</td>
</tr>
<tr>
<td></td>
<td>P18</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>Strategies can be planned but too little is happening within the medical school.</td>
</tr>
<tr>
<td></td>
<td>P19</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P20</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>Strategies can be planned but too little is happening within the medical school.</td>
</tr>
<tr>
<td></td>
<td>P21</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td>Environment factors interwoven within planned strategies.</td>
</tr>
</tbody>
</table>

\(^6\)Due to time constraints, participant did not respond to this question.
9.4 Discussion

As articulated in chapter three, strategy can be defined as the “match an organization makes between its internal resources and skills and the opportunities and risks created by its external environment that enables it to achieve its goals and objectives” (Hofer & Schendel, 1978, p. 12). This is the central tenet of Porter’s analysis of competitive positioning. In line with this, the external environment of a medical school is, or should be, a central consideration in strategy formulation.

According to Porter, the essence of strategy formulation is coping with competition, and that competition in any industry does not stem only from competitors, but is also influenced by the underlying structures of the industry (Porter, 2008a). Porter’s five forces framework, include threat of new entrants, bargaining power of suppliers, bargaining power of customers, threat of substitute products, and intensity of rivalry. Complementing these forces are other factors that need to be considered such as industry growth, technology and innovation, and the relationship with other sectors.

Seen from the lens of Porter’s framework, the analysis of the interview data found that the threat of new entrants can be seen as low, as a result of restrictive government policies that place barriers to entry into medical education. The threat of substitute products is moderate, and can be seen as a competitive force in the global context, rather than one that is local. Students, both domestic and international, and the patient and the wider community/society can be considered as ‘buyers’ in medical education industry. As compared to students, the wider community and society has a somewhat moderate bargaining power through demanding better quality healthcare or more service (Porter, 2008b). Consequently, they have the potential to influence the structure of the medical education industry. Suppliers of labour, i.e. staff and organizations and individual who supply resources in the form funding have high bargaining power within the medical education context. Rivalry comes in the form of competition for clinical placements, funding particularly for research, and academic reputation, and the intensity is very much context specific. In addition, environmental factors such as the economy and labour market, changing social norms, and technology have the potential to shift competitive forces over time and the resulting changes in structure may reconfigure the medical education industry.
The industry analysis of medical education has identified two additional elements in the buyers’ and suppliers’ perspectives. First, the findings recognised patient and wider community/society as one of the ‘buyers’ in medical education, and has a somewhat moderate bargaining power. Second, organizations and individuals which supply resources in the form of funding were acknowledged as ‘suppliers’ in medical education. They have high bargaining power and consequently, have the potential to structure the competitive forces within medical education.

Unlike environmental factors such as economy and technology, the analysis of the interview data found that regulatory bodies, both locally and overseas, wield considerable influence, within medical education, and as such plays a major role in structuring the competitive nature within industry. Various governmental levels influence the medical education industry by funding institutions, assessing and accrediting medical schools, and potentially empowering students (if fee-deregulation occurs in the future). One normally perceives government involvement as stifling market mechanisms, but in the medical education context, changes in legislation and policies will have a significant impact to the underlying structure of medical education industry through expansion, creation, enabling, or limiting the market (Martinez & Wolverton, 2009a, 2009b). By the same token, the broader university, as a source of regulation for medical schools, has the potential to modify how medical schools compete with one another.

The analysis of the interview data concurs with previous studies (Collis, 1999, 2000; King, 2008; Martinez & Wolverton, 2009a, 2009b; Mathooko & Ogutu, 2015; Pringle & Huisman, 2011), in that it is possible to apply a pre-dominantly profit-oriented framework to higher education. Porter’s five forces framework is based on microeconomics, and takes into account different market structures such as monopoly, perfect competition, or oligopoly—the latter synonymous to Australian higher and medical education, with a few universities dominating the sector. Accordingly, it has provided a frame in which to view medical education as an industry.

However, the analysis has shown that regulatory bodies exert legitimate influence in medical education and affect nearly all of the five forces. While Porter (2008b) sees government as an attribute, in line with previous research (Martinez & Wolverton, 2009b;
Mathooko & Ogutu (2015), the findings have provided sufficient evidence to extend Porter’s five forces framework to include government and other organizations that regulate the industry. Additionally, the findings of the study have identified two additional elements to the buyers’ and suppliers’ perspectives: patient and community/society and organizations and individuals that supply funding respectively.

Accordingly, the findings of the study have shown that a revised framework that incorporates regulatory bodies as a sixth and equivalent force, and includes two additional elements to the buyers’ and suppliers’ perspectives provide a more comprehensive view of medical education. By extending the framework, medical schools can gain a complete picture of the competitive influences in the environment, to exploit and work around constraints and even reshape the forces in their favour. Figure 17 provides a revised framework.

![Porter’s revised framework](image-url)

**Figure 17: Porter’s revised framework**
The analysis of the interview data also found that, in the context of the medical education, where the environment either imposes certain conditions, or are static or benign, lead to a higher degree of deliberate strategies (Mintzberg & Waters, 1985). In addition, as a result of the restrictive government’s legislation and policies for instance, some strategies are imposed (Mintzberg & Waters, 1985). The findings in this chapter concur with the findings from the last two chapters. The deliberateness of the medical schools’ strategies which were evident from the precise and articulated intentions expressed within the initial proposal (see chapter seven); are internalised within the institution through collective action and known to virtually to all the actors in the institution (chapter eight); and these collective intentions were realized, in most cases, exactly as intended (chapter eight). This is very much in line with Porter’s depiction of strategic positioning.

Additionally there is a sense that environmental dynamism (Miller & Toulouse, 1986) and environmental uncertainty (Anderson & Paine, 1975; Child, 1972; Miller, 1988), particularly within a regulated environment which is quite stable, may significantly impact on strategy formulation in medical schools. In some medical schools, strategies may emerge over time, as a strategic leader are better able to identify and exploit opportunities as they come (Cottingham et al., 2008; Mintzberg & Waters, 1985).

9.5 Summary

This chapter and the preceding two chapters have presented the findings of the study, and respond to the main research question as to the extent Australian medical schools can differentiate themselves from each other in the context of a regulated environment. This study concludes in the next chapter by providing an overview of the study and findings, offering implications to theory and practice, as well as bringing forward implications for future inquiries.
Chapter 10

Conclusion, implications and future research

10.1 Introduction

Chapters seven to nine have presented the analysis of data from this study. These chapters investigated the notion of strategic positioning in higher education in the context of Australian medical education. In particular, using the conceptual framework advanced in chapter four, the preceding chapter has analysed the interview data to investigate the competitive forces that shape Australian medical education, and consequently, their impact on strategy formulation in medical schools. This final chapter will provide conclusion, implications and future research. It is organized into five sections. The first section provides an overview of the study. The second section discusses the contributions the findings of the study have made to research. Next, the third and fourth sections consider the implications for theory and practice. The final section provides directions for future research and some concluding remarks.

10.2 Overview of study

Working with perspectives offered by strategic management theory, and within the case study context of medical education, this study has shed further light on the notion of strategic positioning in Australian higher education. It began by developing a context for discussion for the current study by firstly mapping the landscape of Australian higher and medical education. In particular, it discussed the regulatory architecture within which universities and medical schools sit. Subsequently, the broad conceptualisations of strategy were deliberated, and the literature on strategy in higher and medical education was reviewed.

This was followed by an analysis of the medical education industry seen through the lens of Porter’s five forces framework, which include threat of new entrants, bargaining
power of firm’s suppliers, bargaining power of firm’s buyers, threat of substitute products, and intensity of rivalry among competing firms. Viewed from the perspective of the five forces framework, the study highlighted that an awareness of the five forces can help medical schools understand the structure of their industry and stake out a position that is more advantageous and less vulnerable to attacks from competitors.

The study moved on to operationalize strategic positioning in higher education by describing the dimensions of positions that a medical school can choose to focus on and the indicators within. For the purpose of the current study, the Australian University Profiles was adapted to the medical school context. Through a rigorous process of validation, 23 positioning indicators were chosen to fit within the five dimensions of teaching and learning, research, knowledge exchange, international orientation, and student profile. Porter’s five forces framework and the profiling tool served as conceptual and analytical frameworks to guide analysis of case studies of Australian medical schools.

Because the nature of strategy in higher education is complex and highly abstract, a case study approach was used to allow for the collection of rich data, which can capture the complexity and detail of the construct under study. A total of 21 semi-structured interviews were carried out within six case study medical schools. The questions used for the interviews were theory- and literature-driven in that they aimed to investigate the key research questions directly. Triangulation was achieved by informing and balancing participant’s perspectives against each other, verified against contextual factors, through information from websites, and the performance data captured through the visual profiling tool.

The study produced four major findings, discussed below. At its core, the findings have provided a clearer understanding of strategic positioning in Australian medical education within the wider higher education context in which it is situated. Empirical analyses have yielded results that shed light on the three subsidiary research questions, the principal dimensions/characteristics on which medical schools position themselves, how the planning and monitoring of profiles inform strategy formulation, and the competitive forces that shape medical education. In doing so, it also responds to the primary research question: *To what extent do medical schools aim to differentiate themselves from each other in the context of a regulated environment?*
10.3 Contributions to research

The overall aim of this research is to investigate the notion of strategic positioning in Australian higher education. Based on the literature review, the conceptual and analytical frameworks, and empirical analyses of qualitative and quantitative data, the study has produced four main findings, captured below. Most broadly, it has revealed much about strategic positioning of Australian medical schools and developed an understanding of how medical schools formulate strategies within a regulated environment.

10.3.1 A new understanding of strategic positioning in higher education

This study has produced empirical findings that can be used to provide a more informed understanding of strategic positioning in Australian higher education. The results of the empirical analyses provide evidence of strategic positioning and niche-finding behaviour by medical schools despite the highly structured and regulated field. In all case study institutions, there is empirical evidence to show that there are concrete attempts at creating organizational coherence through strategic positioning. For the younger medical schools, this may be considered as a ‘negotiated position’ (Murray & Isenman, 1978), as a result of discussions with the government at the time of the proposal.

For the more established medical schools, positioning seems to be more strategic. Established medical schools seem to be able to formulate coherent strategies in order to place themselves distinctively within the system. Not all medical schools position themselves through the dimensions of knowledge exchange, student profile and international orientation. This concurs with previous studies (Kim & Lim, 1988; Lukas, Tan, & Hult, 2001; Tan & Litschert, 1994) in which medical schools emphasised some dimensions at the expense of others. Interestingly, only one medical school seemed to occupy a position in which its activities cut across all five dimensions.

Additionally, some medical schools do attempt to position themselves in ‘blue ocean’ (Kim & Mauborgne, 2005). Medical schools have a focus on particular research areas or on international orientation as an attempt to position themselves in distinctive markets. As well, medical schools identified features of location, age and size to further
emphasise their distinctiveness (Morphew & Hartley, 2006). The findings challenge prevailing notions which suggest that organizations functioning in regulated contexts, such as medical schools, will be unable to achieve sustainable competitive advantage given the extent of regulatory control of competitive dimensions (for example, Mahon & Murray, 1980, 1981; Smith & Grimm, 1987).

10.3.2 A visual profiling tool to inform strategy formulation

The study has made a contribution through the development of a visual profiling tool to assist medical schools to plan and monitor profiles in order to inform strategy formulation. The findings of the study support the contention that within the regulated environment, medical schools were indeed able to formulate coherent strategies. As the findings have shown, visualisation is a central tool to support strategy formulation (Eden & Ackerman, 1998; Foil & Huff, 1992; Lohse, Biolsi, Walker, & Rueter, 1994; Morgan, 1993; Tan & Platts, 2003a; Tufte, 1990) through exploring and analysing data, identifying patterns and associations, directing discussions, enabling more-focussed planning and so on. Good data visualisations can help medical schools make robust decisions based on the data being presented and support senior management engaged in strategic planning, understanding where quality could be improved, as well as for monitoring of performance.

Specifically for strategy formulation, the empirical analyses provide evidence for medical schools to use the profiling tool to identify and understand institutional mission and strategy, setting a target or benchmark, and selectively choosing indicators for management and quality enhancement purposes. The indicators could be used to analyse and map against actual performance in order to identify strengths and weaknesses, set strategic goals, define targets/key performance indicators (KPIs), and aid resource allocation. As a tool which provides an overview of performance, the profiling tool seems to provide the evidence and justification for medical school leaders to make significant change, speeding up reform or pursuing a particular agenda.
10.3.3 The competitive forces that shape medical education

The study has made a contribution through industry analysis of medical education. Various schools of strategic management suggest that the environment is of primary importance to strategy formulation. The results of the empirical analyses provide evidence that environmental forces affect the nature of competition in medical education, and that competitive advantage can be gained by medical schools from a sustained analysis of the industry in which they operate in.

The findings have provided evidence that it is possible to apply Porter’s five forces framework to a substantially public and more institutionalised higher education sector. As a “tentative theory” (Maxwell, 2004, p. 33), Porter’s five forces framework has been very valuable in investigating the competitive forces that shape medical education, and provided a conceptual map for analysing medical education as an industry. Seen from the lens of Porter’s framework, the findings suggest that threat of new entrants can be seen as low, the threat of substitute products is moderate, buyers’ power is moderate, while suppliers’ power is high, and the intensity of rivalry is variable depending on the dimensions of competition and context. Additionally, environmental factors such as the economy and labour market, changing social norms, and technology have the potential to shift competitive forces over time and the resulting changes in structure may reconfigure the medical education industry.

10.3.4 Extending Porter’s five forces framework

The study has made a contribution by extending Porter’s five forces framework that is centred on the medical education industry. In particular, seen through the lens of the framework, the findings identified three contributions to the analysis of medical education. Firstly the findings recognised patient and wider community/society as one of the ‘buyers’ in medical education. Secondly, organizations and individuals which supply resources in the form of funding were acknowledged as ‘suppliers’ in medical education. Finally, but perhaps most importantly, regulatory bodies, in the form of Federal and state governments, accrediting agency, and the university, was identified as a sixth force within the medical education industry. These competitive forces have considerable influence to the structure
of medical education, through expanding, creating, enabling, or limiting the market, and consequently will impact strategy formulation in medical schools (Martinez & Wolverton, 2009a, 2009b).

As a sixth force, regulatory bodies within medical education have essential or even critical influence over the medical education industry by, among other things, providing or limiting funding, assessing and accrediting courses, controlling clinical placements, and by creating the legal and medical frameworks in the health care system within which medical schools operate. In doing so, regulatory bodies have the power to change the medical education industry’s structure and create entirely new ways to do businesses by placing constraints around the way in which resources are used. Accordingly, regulatory bodies play a significant role in this context.

The findings of the study have shown that a revised framework that incorporates regulatory bodies as a sixth and equivalent force, and includes two additional elements to the buyers’ and suppliers’ perspectives provide a more comprehensive view of medical education. By extending the framework, medical schools can gain a complete picture of the competitive influences in the environment, to exploit and work around constraints and even reshape the forces in their favour.

10.4 Implications for theory

The higher education world is undergoing rapid transformation, and is operating in a highly turbulent and dynamic environment that calls for universities to plan and anticipate uncertainties by developing appropriate and sustainable response strategies. Despite previous research, which has argued that strategy, in the business sense, does not apply to a substantially public and more institutionalised sector such as higher education (Amaral et al., 2002; Gumport, 2001) and is not achievable in complex, loosely coupled organizations such as universities (Leslie, 1996; Musselin, 2007), the findings of this study has shown the contrary, and accordingly challenge these assertions.

The current competitive forces in higher education have confronted the very functioning of universities in its present form and style. Changes to the landscape of
higher education such as reduced government funding, and increasing emergence of private providers and new business models, continually disrupts the competitive structure of the industry. The higher education environment is formed by its relationship with students and staff, the intensity of competition among universities that vie for the same value-creating opportunities which affects the ability to generate income, all of which are influenced by the government (Martinez & Wolverton, 2009a, 2009b).

While most models and framework for analysis in higher education are based on defining the governance structure or steering models (see examples of Clark, 1983; Hood, James, Peters, & Scott, 2004; Hood, 1998; Olsen, 1988; van Vught, 1989), the findings of this study calls for an analysis of higher education using more business-oriented frameworks. As an industry facing increasing pressure toward marketization and competition, the findings concur with previous studies (Collis, 1999, 2000; King, 2008; Martinez & Wolverton, 2009a, 2009b; Mathooko & Ogutu, 2015; Pringle & Huismann, 2011) and provide sufficient evidence that an analysis of higher education as an industry using an extended version of Porter’s five forces is justifiable and possible.

10.5 Implications for practice

In analysing the strategic positions of medical schools, the findings of this study can assist researchers, practitioners and policy makers to recognize how medical schools have contrasting institutional priorities and values and consequently understand and predict ways in which they compete with one another for various resources. A distinctive position means that within the rubric of medical schools, there would be a range of types of institutions, each with a clear mission and an expectation that medical schools would seek excellence within this position. Obviously, this has implications at both institutional and systems levels—in areas such as funding, governance and workforce.

One way to encourage this distinctiveness is to develop a differentiated funding system. There are a number of benefits. A differentiated funding system can ensure that medical schools have clarity and accountability around the things that are expected of them. It enables medical schools to optimize the use of their internal resources by allocating them to activities consistent with a focused mission and mandate. Furthermore, such a
funding framework allows the potential for medical schools to move away from the more costly, volatile and risky model inherent in traditional universities. Most importantly, a goal-oriented funding framework could be used to steer the medical schools system in accordance with the broad social, economic and health development objectives nationally.

The findings of this study have implications for strategic leadership and management in higher education. Australian universities have seen the emergence of professional middle management that complements a similar structure at the central university level (Goedegebuure & Schoen, 2014). As well, for both academic and professional staff, there is likely to be an expansion and diversification of roles – reflecting an increasing variety of broad functions required in the future (Coates & Goedegebuure, 2010, 2012).

Additionally, there is an expectation that staff manage relationships, expectations and engagement with regulatory health agencies, which would mean that there is a requirement for business and commercial capabilities, such as negotiation skills, intercultural awareness, and collaborative leadership. As core functions become more specialised, more general capabilities will also be required. These include the management of multiple functions in a complex environment, delivering a wide transformational agenda, conducting a bridging role with external partners, organizational skills, and the capacity to create, navigate and lead networks and alliances locally and internationally across sectors, and with business and governments (Perkmann et al., 2013; Varpio et al., 2014).

In an era of ‘big data’ higher education institutions are awash in information; and as can be seen from the analyses of medical schools’ profiles, it is crucial that the ‘right’ things are being measured in valid, reliable and efficient ways. Reporting information to management is meaningless if the information is not focused on the areas that count (Mahat & Coates, 2015). The need to build new impact-oriented metrics on learning outcomes and research impact continues to heighten, though progress is being made (see examples of Coates & Mahat, 2014a; HEFCE, 2014). As higher education moves beyond input- and process-oriented metrics, ensuring provision of salient and robust outcome-oriented metrics is critical (Mahat & Goedegebuure, 2014).
Additionally, the visual profiling tool provides evidence that transparency is of major importance for strategy formulation in higher education. Higher education institutions function in an increasingly complex environment and as a result require more reflective and data-driven strategic leadership and management. Such strategic leadership and management must be evidence-based and occur within transparent internal and external frameworks that can structure evaluation and application of data. The profiling tool provides indication that transparent reporting of the right kind of data is possible. In an era of greater accountability, such a transparent profiling tool can assist institutional leaders and policy makers to better understand, analyse and position themselves in rapidly changing contexts, nationally and internationally.

10.6 Directions for future research

As with all studies, the findings and implications of the study when put together create opportunities for future research ideas. Future research could focus on areas that were touched on only briefly and/or illuminated from the findings of this study, discussed below.

A consideration to be made is the ‘moment in time’ nature of this approach to analysis. Porter’s five forces framework and the profiling tool provides a snapshot of the medical school positions based on the industry analysis and data collected at a particular time. It by no means provides insights into the strategic orienting that universities go through in order to navigate the dynamics and uncertainties of the higher education landscape. A time series reporting on the profiles can provide an analysis of the developmental dynamics of strategy formulation in higher education. For the purpose of this study, the ‘moment in time’ analysis was useful to provide an overview of strategic positions and to inform medical schools about its strategy formulation. Ideally, strategy should also be examined longitudinally, since the impact of strategy occurs over time. Future research might examine the short- and long-run coherence of strategies and the implications of this for performance.

This study is based on specific conceptual choices: strategic positioning, which is analysed in accordance to Porter’s five forces framework. From the profiles
of medical schools (see Appendix D), strategic positioning can also be inquired as institutional spaces whose meaning is dynamically constructed by social actors through collective processes (Mohr & Lee, 2000; Rawlings & Bourgeois, 2004). A power approach could also be useful for understanding strategy formulation in medical schools, particularly from perspectives of bases of power in organizations (Emerson, 1962; French & Raven, 1959). As well, it would be of utmost value to investigate the effect of the medical school’s life cycle to strategy and performance (Anderson & Zeithaml, 1984; Miller, Friesen, & Hautes, 2015). It would also be useful to address the prescriptive question of what types of alignments among environment, strategy, and internal features are important to organizational performance. Particular in the early years of medical schools, when strategy tends to precede structure (Mintzberg et al., 1998), a systematic comparative investigation of the relationships between organizational structure and situational variables would produce promising insights for structural configurations of medical schools (Blau, Heydebrand, & Stauffer, 1966; Hall, 1962; Pugh, Hickson, & Hinings, 1968).

The empirical findings seem to indicate that particularly in regulated environments, some environmental forces impose certain conditions and consequently, can be static or benign. Additionally, there is a sense that changes in the environmental forces have a higher propensity to affect medical schools’ strategic formulation. Consequently, future inquiry could focus on environmental variability, complexity and illiberality (Child, 1972). An extension of such a study to explore in-depth the different environmental conditions and dynamism could illuminate the different types of organizational strategy which medical schools can adopt for a high level of performance to be achieved. Future inquiry could also consider dynamics of the environmental forces.

This study focuses on Australian medical schools and takes into account six case study institutions. There are two ways in which the scope could be extended. Firstly, an expansion of the study would include a study of medical schools in different higher education contexts and systems. Replication helps validate, contextualise and improve the current study. As well, the significant expansion of higher education over several decades, coupled with ever more competitive and complex borderless operating environments, provides a compelling rationale to broaden the scope across contexts and systems. Secondly, the study could be extended to include other disciplines and/or
programs. Such benchmarking exercises will encourage systematic and collaborative comparison of practice and performance. Additionally, it can help identify strengths and weaknesses as well as adapt and improve organizational processes.

As can be seen from this study, strategy has impacted on the diversity of the medical school system in distinctive ways, influencing their internal features, and reshaping positions. It would be relevant to look at how higher education organizational fields differentiate or converge focusing on the action of individual organizations (see Frølich, Huisman, Slipersæter, & Stensaker, 2010). An in-depth exploration of programmatic diversity is the foundation of true diversity (Coates et al., 2013; Mahat et al., 2014), which are critical for students (Jones, 1996), generate desirable certification for the labour market (Kivinen & Rinne, 1996), and caters for the needs of the majority of higher education stakeholder groups (Federkeil, Kaiser, van Vught, & Westerheijden, 2012). Extending the study to explore programmatic diversity could include five bases of degree level, degree area, comprehensiveness, mission and emphasis of program and services (Birnbaum, 1983). As well, such a study could also explore more in-depth the factors affecting programmatic diversity such as competition (Ben-David, 1972; Dill & Teixeira, 2000), role of state (Birnbaum, 1983; Jenniskens, 1997), and government policies (Huisman & Jenniskens, 1994; Huisman & Morpew, 1998; Huisman, 1995).

As a concluding remark, the importance of strategy in higher education is gaining momentum as higher education continues to undergo rapid transformation. Increasingly, universities operate in a highly turbulent and dynamic environment, where the dual growth of marketization and competition is evident. This calls for universities to understand the competitive forces in the environment and the key activities within their dimensions of activities that will help them plan and strategize to meet their overall objectives. Despite this, it is striking that a clear and encompassing analysis of the current competitive landscape for higher education in Australia is lacking.

On that note, this study has successfully contributed to greater understanding of higher education as an industry, by providing salient examples in the medical education context. The study has provided insights into the dimensions of activities on which medical schools can position themselves, the ways the planning and monitoring of profiles
can inform strategy formulation, and the competitive forces that shape medical education. As Porter (1985) argues, every firm competing in an industry has a competitive strategy, whether explicit or implicit. This study has provided empirical evidence that the statement holds true for academic organizations, including universities and academic units within them. Not only that, this study has also provided very important implications for theory and practice and a basis for guiding research into strategy in higher education, with the intent to develop a deeper understanding and knowledge of this phenomenon.


Coates, H., & Goedegebuure, L. C. J. (2010). *The Real Academic Revolution: Why We Need To Reconceptualise Australia’s Future Academic Workforce, and Eight Possible Strategies For How To Go About This*. Melbourne: LH Martin Institute.

Coates, H., & Goedegebuure, L. C. J. (2012). Recasting the academic workforce: Why the attractiveness of the academic profession needs to be increased and eight possible strategies for how to go about this from an Australian perspective. *Higher Education, 64*(6), 875–889.


Department of Education. (2014b). Table 1: EFTSL of Postgraduate and HDR students, 2011-2013. Canberra: Department of Education.

Department of Education. (2014c). Table 1: Retention Rates for all Students by Provider, detained Field of Education, 2011-2012. Canberra: Department of Education.
Department of Education. (2014d). *Table 1: Staff Headcount and FTE, 2011-2013*. Canberra: Department of Education.

Department of Education. (2014e). *Table 1: Student Number and EFTSL, 2011-2013*. Canberra: Department of Education.


UWA Faculty of Medicine, Dentistry and Health Sciences. (2014). Faculty of Medicine, Dentistry and Health Sciences. Retrieved December 4, 2014, from http://www.meddent.uwa.edu.au/


outcomes. Sydney: Office for Learning and Teaching, Department of Industry, Innovation, Science, Research and Tertiary Education.


Appendix A

List of experts

Dr Peter Bentley
Research Fellow
LH Martin Institute, Melbourne
Graduate School of Education, The University of Melbourne

Professor Ben Canny
Associate Dean - MBBS International & President, Academic Board
Faculty of Medicine, Nursing and Health Sciences, Monash University

Professor Hamish Coates
Professor of Higher Education
Melbourne Centre for the Study of Higher Education, The University of Melbourne

Professor Merran Evans
Former Pro Vice-Chancellor, Planning and Quality
Monash University

David De Bellis
Director, Planning Services
Flinders University of South Australia

Jon File
Director, Development and Consultancy
Centre for Higher Education Policy Studies, University of Twente

Professor Leo Goedegebuure
Director
LH Martin Institute, Melbourne
Graduate School of Education, The University of Melbourne

Linley Martin
Commissioner
Tertiary Education Quality and Standards Agency

Professor Vin Massaro
Managing Director
Massaro Consulting

Professor Geoff McColl
Head and Professor of Medical Education and Training
Melbourne Medical School, The University of Melbourne

Professor Lynn Meek
Professor and Foundation Director
LH Martin Institute, Melbourne
Graduate School of Education, The University of Melbourne

Professor Peter Noonan
Mitchell Professorial Fellow
Mitchell Institute, Victoria University

Professor Alan Pettigrew
Adjunct Professor
College of Medicine, Biology and Environment, The Australian National University
### Positioning Indicators

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Teaching and Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>T.1</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Academic staff</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of academic staff</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of academic staff in the medical school as a proportion of all academic staff in the university.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education, Higher Education Statistics Data Cube (uCube)</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total full-time and fractional full-time staff in teaching and teaching research functions Academic Organizational Unit (AOU) groups which map up to the following Fields of Education: 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science Total full-time and fractional full-time staff in teaching and teaching/research functions for the whole university.</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Teaching and Learning</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Code</td>
<td>T.2</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Staff/student ratio</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Staff/student ratio</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The ratio of staff to students</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total full-time and fractional full-time staff in teaching and teaching/research functions Academic Organizational Unit (AOU) groups which map up to the following Fields of Education. Total Effective Full Time Student Load (EFTSL) in the following Fields of Education. 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Teaching and Learning</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Code</td>
<td>T.3</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Retention rate</td>
</tr>
<tr>
<td>Indicator</td>
<td>Retention rate for commencing students</td>
</tr>
<tr>
<td>description</td>
<td></td>
</tr>
<tr>
<td>Indicator</td>
<td>Retention rate (adjusted DoE calculation) for commencing bachelor domestic students.</td>
</tr>
<tr>
<td>detail</td>
<td></td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
</tbody>
</table>
| Date elements   | The total adjusted retention rate for the following fields of education:  
|                 | 0109 Biological Sciences  
|                 | 0199 Other Natural & Physical Sciences  
|                 | 0601 Medical Studies  
|                 | 0603 Nursing  
|                 | 0605 Pharmacy  
|                 | 0607 Dental Studies  
|                 | 0609 Optical Science  
|                 | 0613 Public Health  
|                 | 0617 Rehabilitation Therapies  
|                 | 0905 Human Welfare Studies & Services  
<p>|                 | 0907 Behavioural Science  |
| Year            | 2013                  |</p>
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Teaching and Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>T.4</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Quality of teaching</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of undergraduate domestic students who feel that the quality of teaching is good or excellent.</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of undergraduate domestic later students who responded in the top two response categories for this item in the University Experience Survey (UES).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Recommended through expert consultation</td>
</tr>
<tr>
<td>Data sources</td>
<td>Social Research Centre</td>
</tr>
<tr>
<td>Date elements</td>
<td>Later-year students who responded ‘good’ and ‘excellent’ to this item in the University Experience Survey (UES): <em>Thinking about your university course: overall how would you rate the quality of your entire educational experience this year?</em> and enrolled in the following narrow Fields of Education: 010900, 010901, 010911, 010913, 010999, 019900, 019901, 019903, 019905, 019907, 019909, 019999, 060100, 060101, 060103, 060105, 060107, 060109, 060111, 060113, 060115, 060117, 060119, 060199, 060700, 060701, 060703, 060705, 060799, 061700, 061701, 061703, 061705, 061707, 061709, 061711, 061713, 061799, 063000, 063001, 063003, 063005, 063007, 063009, 063011, 063013, 063015, 063099, 065000, 065001, 065003, 065005, 065007, 065009, 065011, 065013, 065015, 065059, 065070, 065071, 065079</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Teaching and Learning</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Code</td>
<td>T.5</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Quality of educational experience</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of undergraduate domestic students who feels that the quality of the educational experience is good or excellent.</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of undergraduate domestic later students who responded in the top two response categories for this item in the University Experience Survey (UES).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Recommended through expert consultation</td>
</tr>
<tr>
<td>Data sources</td>
<td>Social Research Centre</td>
</tr>
<tr>
<td>Date elements</td>
<td>Student who responded ‘good’ and ‘excellent’ to this item in the University Experience Survey (UES): <em>Thinking about your university course: overall how would you rate the quality of the teaching you have experienced?</em> and enrolled in the following narrow Fields of Education: 010900, 010901, 010911, 010913, 010999, 019900, 019901, 019903, 019905, 019907, 019909, 019999, 060100, 060101, 060103, 060105, 060107, 060109, 060111, 060113, 060115, 060117, 060119, 060199, 060700, 060701, 060703, 060705, 060799, 061700, 061701, 061703, 061705, 061707, 061709, 061711, 061713, 061799, 063000, 063001, 063003, 063005, 063007, 063009, 063011, 063013, 063015, 063099, 065000, 065001, 065003, 065005, 065007, 065009, 065011, 065013, 065015, 065099, 090500, 090501, 090503, 090505, 090507, 090509, 090511, 090513, 090515, 090599, 090700, 090701, 090799</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Teaching and Learning</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Code</td>
<td>T.6</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Overall satisfaction</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of undergraduate domestic students who were satisfied with the overall quality of their course.</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of domestic undergraduate students who completed their degree program in the previous year who were satisfied ('Agree' and 'Strongly agree') with the overall quality of their course in the Course Experience Questionnaire (CEQ).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Recommended through expert consultation</td>
</tr>
<tr>
<td>Data sources</td>
<td>Graduate Careers Australia</td>
</tr>
<tr>
<td>Date elements</td>
<td>Graduates who agree or disagree with the following item: <em>Overall, I was satisfied with the quality of this course</em> in the Course Experience Questionnaire (CEQ) and enrolled in the following narrow fields of education (CEQMAJ) as listed below: 010900, 010901, 010911, 010913, 010999, 019900, 019901, 019903, 019905, 019907, 019909, 019999, 060100, 060101, 060103, 060105, 060107, 060109, 060111, 060113, 060115, 060117, 060119, 060199, 060700, 060701, 060703, 060705, 060799, 061700, 061701, 061703, 061705, 061707, 061709, 061711, 061713, 061799, 063000, 063001, 063003, 063005, 063007, 063009, 063011, 063013, 063015, 063099, 063000, 060501, 060900, 060901, 060903, 060999, 061300, 061301, 061303, 061305, 061307, 061309, 061311, 061399, 090500, 090501, 090503, 090505, 090507, 090509, 090511, 090513, 090515, 090599, 090700, 090701, 090799</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Student Profile</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Code</td>
<td>S.1</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Student body</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Size of student body</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of students enrolled in medical school as a proportion of university's student body (EFTSL).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education, Higher Education Statistics Data Cube (uCube)</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) in the following Fields of Education. 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science Total Effective Full Time Student Load (EFTSL) for the whole university.</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Student Profile</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Code</td>
<td>S.2</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Medical students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of students enrolled in undergraduate, graduate and Doctor of Medicine medical programs.</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The number students who are enrolled in medical programs as a proportion of all students in the medical school (Headcount).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Medical Deans Australia and New Zealand (MDANZ), Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total student enrolments by year of course as reported by MDANZ. Total student enrolments in the following Fields of Education. 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Student Profile</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Code</td>
<td>S.3</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Postgraduate students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Postgraduate students</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The number of domestic and international postgraduate students as a proportion of all students in the medical school (EFTSL).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) enrolled in postgraduate programs in the following Fields of Education. Total Effective Full Time Student Load (EFTSL) enrolled in all programs in the following Fields of Education. 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science Postgraduate programs include honours, postgraduate coursework programs and postgraduate research programs.</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Student Profile</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Code</td>
<td>S.4</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Mature age students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of mature age students</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of students enrolled in the medical school who are mature age (30 years or more).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) who are 30 years old and above enrolled in the following Fields of Education. Total Effective Full Time Student Load (EFTSL) enrolled in the following Fields of Education. 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Student Profile</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Code</td>
<td>S.5</td>
</tr>
<tr>
<td>Indicator label</td>
<td>PT students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of part-time students</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of students enrolled in the medical school who are part-time.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) who are enrolled part-time in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>Total Effective Full Time Student Load (EFTSL) enrolled in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>0109 Biological Sciences</td>
</tr>
<tr>
<td></td>
<td>0199 Other Natural &amp; Physical Sciences</td>
</tr>
<tr>
<td></td>
<td>0601 Medical Studies</td>
</tr>
<tr>
<td></td>
<td>0603 Nursing</td>
</tr>
<tr>
<td></td>
<td>0605 Pharmacy</td>
</tr>
<tr>
<td></td>
<td>0607 Dental Studies</td>
</tr>
<tr>
<td></td>
<td>0609 Optical Science</td>
</tr>
<tr>
<td></td>
<td>0613 Public Health</td>
</tr>
<tr>
<td></td>
<td>0617 Rehabilitation Therapies</td>
</tr>
<tr>
<td></td>
<td>0905 Human Welfare Studies &amp; Services</td>
</tr>
<tr>
<td></td>
<td>0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Student Profile</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Code</td>
<td>S.6</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Low SES students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of low SES students</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of students enrolled in the medical school who come from low socio-economic status (SES) (% of cohort).</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) who come from low SES in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>Total Effective Full Time Student Load (EFTSL) enrolled in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>0109 Biological Sciences</td>
</tr>
<tr>
<td></td>
<td>0199 Other Natural &amp; Physical Sciences</td>
</tr>
<tr>
<td></td>
<td>0601 Medical Studies</td>
</tr>
<tr>
<td></td>
<td>0603 Nursing</td>
</tr>
<tr>
<td></td>
<td>0605 Pharmacy</td>
</tr>
<tr>
<td></td>
<td>0607 Dental Studies</td>
</tr>
<tr>
<td></td>
<td>0609 Optical Science</td>
</tr>
<tr>
<td></td>
<td>0613 Public Health</td>
</tr>
<tr>
<td></td>
<td>0617 Rehabilitation Therapies</td>
</tr>
<tr>
<td></td>
<td>0905 Human Welfare Studies &amp; Services</td>
</tr>
<tr>
<td></td>
<td>0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Student Profile</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Code</td>
<td>S.7</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Regional students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of students from regional/remote areas</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of students enrolled in the medical school who come from regional/remote areas.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) who come from regional/remote areas in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>Total Effective Full Time Student Load (EFTSL) enrolled in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>0109 Biological Sciences</td>
</tr>
<tr>
<td></td>
<td>0199 Other Natural &amp; Physical Sciences</td>
</tr>
<tr>
<td></td>
<td>0601 Medical Studies</td>
</tr>
<tr>
<td></td>
<td>0603 Nursing</td>
</tr>
<tr>
<td></td>
<td>0605 Pharmacy</td>
</tr>
<tr>
<td></td>
<td>0607 Dental Studies</td>
</tr>
<tr>
<td></td>
<td>0609 Optical Science</td>
</tr>
<tr>
<td></td>
<td>0613 Public Health</td>
</tr>
<tr>
<td></td>
<td>0617 Rehabilitation Therapies</td>
</tr>
<tr>
<td></td>
<td>0905 Human Welfare Studies &amp; Services</td>
</tr>
<tr>
<td></td>
<td>0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Research</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------</td>
</tr>
<tr>
<td>Code</td>
<td>R.1</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Research pubs/academic</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Academic research publications per academic</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The ratio of academic weighted research publications to academic staff.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>SciVal, Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Scholarly output by year in Medicine from the Scopus database</td>
</tr>
<tr>
<td></td>
<td>Total full-time and fractional full-time staff in teaching and teaching/research functions within Academic Organizational Unit (AOU) groups which map to the following Fields of Education:</td>
</tr>
<tr>
<td></td>
<td>0109 Biological Sciences</td>
</tr>
<tr>
<td></td>
<td>0199 Other Natural &amp; Physical Sciences</td>
</tr>
<tr>
<td></td>
<td>0601 Medical Studies</td>
</tr>
<tr>
<td></td>
<td>0603 Nursing</td>
</tr>
<tr>
<td></td>
<td>0605 Pharmacy</td>
</tr>
<tr>
<td></td>
<td>0607 Dental Studies</td>
</tr>
<tr>
<td></td>
<td>0609 Optical Science</td>
</tr>
<tr>
<td></td>
<td>0613 Public Health</td>
</tr>
<tr>
<td></td>
<td>0617 Rehabilitation Therapies</td>
</tr>
<tr>
<td></td>
<td>0905 Human Welfare Studies &amp; Services</td>
</tr>
<tr>
<td></td>
<td>0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Research</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>Code</td>
<td>R.2</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Citations/paper</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Citations per paper</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The average number of citations received per publication.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>QS-Medicine/U-Multirank</td>
</tr>
<tr>
<td>Data sources</td>
<td>SciVal</td>
</tr>
<tr>
<td>Date elements</td>
<td>Citations per publication by year in Medicine from the Scopus database.</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
</tbody>
</table>

<p>| Dimensions: Research | Code: R.2 | Indicator label: Citations/paper | Indicator description: Citations per paper | Indicator detail: The average number of citations received per publication. | Indicator source: QS-Medicine/U-Multirank | Data sources: SciVal | Date elements: Citations per publication by year in Medicine from the Scopus database. | Year: 2013 |</p>
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>R.3</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Research inc/academic</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Research income/Academic staff</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The ratio of NHMRC research income per academic staff</td>
</tr>
<tr>
<td>Indicator source</td>
<td>THES-Clinical</td>
</tr>
<tr>
<td>Data sources</td>
<td>NHMRC/Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>The amount of funding allocated as a result of the 2013 Application Round for applications reviewed by the NHMRC and for grants awarded where no applications were required or funding was provided by external agencies. Total full-time and fractional full-time staff in teaching and teaching/research functions within Academic Organizational Unit (AOU) groups which map to the following Fields of Education: 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Research</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
</tr>
<tr>
<td>Code</td>
<td>R.4</td>
</tr>
<tr>
<td>Indicator label</td>
<td>HDR students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of HDR students</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of students in the medical school who are in higher degree research.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education, Higher Education Statistics Data Cube (uCube)</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) enrolled in higher degree research (HDR) programs in the following Fields of Education. Total Effective Full Time Student Load (EFTSL) enrolled in all programs in the following Fields of Education. 0109 Biological Sciences 0199 Other Natural &amp; Physical Sciences 0601 Medical Studies 0603 Nursing 0605 Pharmacy 0607 Dental Studies 0609 Optical Science 0613 Public Health 0617 Rehabilitation Therapies 0905 Human Welfare Studies &amp; Services 0907 Behavioural Science HDR programs include honours, master by research and doctorate programs.</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Research</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Code</td>
<td>R.5</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Grads in FT study</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of graduates in full-time study</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of graduates in further full-time study as reported by the Australian Graduate Survey.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Graduate Careers Australia</td>
</tr>
<tr>
<td>Date elements</td>
<td>The proportion of graduates who were enrolled in the following narrow fields of education (MAJ) and went on to further full-time study: 010900, 010901, 010911, 010913, 010999, 019900, 019901, 019903, 019905, 019907, 019909, 019999, 060100, 060101, 060103, 060105, 060107, 060109, 060111, 060113, 060115, 060117, 060119, 060199, 060700, 060701, 060703, 060705, 060799, 061700, 061701, 061703, 061705, 061707, 061709, 061711, 061713, 061799, 063000, 063001, 063003, 063005, 063007, 063009, 063011, 063013, 063015, 063099, 065000, 065001, 065003, 065005, 065007, 065009, 065011, 065013, 065015, 065099, 065700, 065701, 065799</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Knowledge exchange</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Code</td>
<td>K.1</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Co-pub with industry partners</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Co-publications with industrial partners</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The number of publications with both academic and corporate affiliations as a proportion of all publications.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>U-Multirank-Field</td>
</tr>
<tr>
<td>Data sources</td>
<td>SciVal</td>
</tr>
<tr>
<td>Date elements</td>
<td>Academic-Corporate Collaboration by year in Medicine from the Scopus database</td>
</tr>
<tr>
<td></td>
<td>Scholarly output by year in Medicine from the Scopus database</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>Knowledge exchange</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Code</td>
<td>K.2</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Grads in FT work</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of graduates in full-time work</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of graduates in full-time employment as reported by the Australian Graduate Survey.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Graduate Careers Australia</td>
</tr>
<tr>
<td>Date elements</td>
<td>The proportion of graduates who were enrolled in the following narrow fields of education (MAJ) and in full-time work: 010900, 010901, 010911, 010913, 010999, 019900, 019901, 019903, 019905, 019907, 019909, 019999, 060100, 060101, 060103, 060105, 060107, 060109, 060111, 060113, 060115, 060117, 060119, 060199, 060700, 060701, 060703, 060705, 060799, 061700, 061701, 061703, 061705, 061707, 061709, 061711, 061713, 061799, 060300, 060301, 060303, 060305, 060307, 060309, 060311, 060313, 060315, 060399, 060500, 060501, 060900, 060901, 060903, 060999, 061300, 061301, 061303, 061305, 061307, 061309, 061311, 061399, 090500, 090501, 090503, 090505, 090507, 090509, 090511, 090513, 090515, 090599, 090700, 090701, 090799</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>International orientation</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Code</td>
<td>I.1</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Intl students</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of international students</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of students enrolled in the medical school who are international.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total Effective Full Time Student Load (EFTSL) who are international enrolled in programs in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>Total Effective Full Time Student Load (EFTSL) enrolled in all programs in the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>0109 Biological Sciences</td>
</tr>
<tr>
<td></td>
<td>0199 Other Natural &amp; Physical Sciences</td>
</tr>
<tr>
<td></td>
<td>0601 Medical Studies</td>
</tr>
<tr>
<td></td>
<td>0603 Nursing</td>
</tr>
<tr>
<td></td>
<td>0605 Pharmacy</td>
</tr>
<tr>
<td></td>
<td>0607 Dental Studies</td>
</tr>
<tr>
<td></td>
<td>0609 Optical Science</td>
</tr>
<tr>
<td></td>
<td>0613 Public Health</td>
</tr>
<tr>
<td></td>
<td>0617 Rehabilitation Therapies</td>
</tr>
<tr>
<td></td>
<td>0905 Human Welfare Studies &amp; Services</td>
</tr>
<tr>
<td></td>
<td>0907 Behavioural Science</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
<tr>
<td>Dimension</td>
<td>International orientation</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Code</td>
<td>I.2</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Staff with overseas quals</td>
</tr>
<tr>
<td>Indicator description</td>
<td>Percentage of staff with overseas qualification</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of academic staff that obtained their highest qualification overseas.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>Australian University Profile</td>
</tr>
<tr>
<td>Data sources</td>
<td>Department of Education</td>
</tr>
<tr>
<td>Date elements</td>
<td>Total full-time and fractional full-time staff in teaching and teaching/research functions who has an overseas qualification within Academic Organizational Unit (AOU) groups which map to the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>Total full-time and fractional full-time staff in teaching and teaching/research functions within Academic Organizational Unit (AOU) groups which map to the following Fields of Education.</td>
</tr>
<tr>
<td></td>
<td>0109 Biological Sciences</td>
</tr>
<tr>
<td></td>
<td>0199 Other Natural &amp; Physical Sciences</td>
</tr>
<tr>
<td></td>
<td>0601 Medical Studies</td>
</tr>
<tr>
<td></td>
<td>0603 Nursing</td>
</tr>
<tr>
<td></td>
<td>0605 Pharmacy</td>
</tr>
<tr>
<td></td>
<td>0607 Dental Studies</td>
</tr>
<tr>
<td></td>
<td>0609 Optical Science</td>
</tr>
<tr>
<td></td>
<td>0613 Public Health</td>
</tr>
<tr>
<td></td>
<td>0617 Rehabilitation Therapies</td>
</tr>
<tr>
<td></td>
<td>0905 Human Welfare Studies &amp; Services</td>
</tr>
<tr>
<td></td>
<td>0907 Behavioural Science</td>
</tr>
</tbody>
</table>
| Year      | 2013 }
<table>
<thead>
<tr>
<th>Dimension</th>
<th>International orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>I.3</td>
</tr>
<tr>
<td>Indicator label</td>
<td>Intl co-authorship</td>
</tr>
<tr>
<td>Indicator description</td>
<td>International co-authorship</td>
</tr>
<tr>
<td>Indicator detail</td>
<td>The proportion of total research publications that have at least one international co-author.</td>
</tr>
<tr>
<td>Indicator source</td>
<td>THES-Clinical</td>
</tr>
<tr>
<td>Data sources</td>
<td>SciVal</td>
</tr>
<tr>
<td>Date elements</td>
<td>Collaboration by year in Medicine from the Scopus database. Scholarly output by year in Medicine from the Scopus database.</td>
</tr>
<tr>
<td>Year</td>
<td>2013</td>
</tr>
</tbody>
</table>
Appendix C

Interview protocol

Project: Strategic positioning in higher education: Reshaping perspectives

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>Venue</td>
<td></td>
</tr>
<tr>
<td>Participant’s name</td>
<td></td>
</tr>
<tr>
<td>Consent form signed</td>
<td></td>
</tr>
</tbody>
</table>

Preamble:

- Thank you for your participation. I believe your input will be valuable to this research and to understanding strategy formulation in higher education.
- Approximate length of interview is 60 minutes.
- The interview will be audio-taped. Confidentiality of responses is guaranteed.
- Purpose of research: Understand strategy in higher education, in the context of medical schools.

Interview begins:

1. Strategic positioning of the medical school

   a) What makes your medical school different (unique) from others?
   b) How are goals/objectives formulated and documented?
   c) What indicators are tracked and how are they compared?
   d) What influence does monitoring of activities have on allocation of resources or positioning of your medical school?
2. **Visual profiling tool**

<table>
<thead>
<tr>
<th>Notes to researcher:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Present a profiling tool for medical school.</td>
</tr>
<tr>
<td>• Drawn from an Australia Institutional Profile project based on the European classification of U-Map and U-Multirank, the tool consists of five dimensions of Teaching and Learning; Student Profile; Research involvement; Knowledge exchange; and International orientation.</td>
</tr>
<tr>
<td>• There are 23 indicators to underpin each dimension and have been moulded to fit the medical school context and data availabilities.</td>
</tr>
<tr>
<td>• Four categories were set by taking quartiles of the national distribution.</td>
</tr>
<tr>
<td>• Each institution was placed in the first, second, third or fourth group based on the performance on each indicator.</td>
</tr>
<tr>
<td>• The median university represents the average of all Australian medical schools, presenting the median national value for each indicator. It provides a reference point against which profiles for individual medical schools can be compared.</td>
</tr>
</tbody>
</table>

**In terms of the profiling tool:**

a) In what ways could the visual profiling tool be used to inform strategy formulation in your medical school?

b) In what ways can the profiling tool be improved to provide a more valid representation of your medical school distinct institutional mission?

c) In what ways could the promulgation of this profiling tool help to understand strategic positioning of medical schools in Australia?
3. The external environment

Notes to researcher:

- Present Table 1 to participant.
- The columns represent some of the dimensions of activities that a medical school might participate in. The rows present some of the factors external to the medical school that might affect strategy formulation in these dimensions of activities.

Looking at Table 1,

a) How do these factors affect strategy formulation in the different dimensions of activities?

b) How does your medical school compare to others? On what dimensions?
   To which medical schools?

c) What proportion of strategy formulation is a reaction to these factors/dimensions and what proportion is deliberate based on strategic positioning/planning?

d) Can you give an example?

e) What signals does the institution use for strategic positioning, e.g. rankings, accreditation, media, opinion?

e) Can you think of other factors that may affect strategic positioning of medical schools?

Closing

- Do you have any further thoughts that you might like to add?
- Do you have any questions you would like to ask regarding the study?
- Thank the participant.
- Reassure confidentiality.
- Summary report to be sent to participants once all interviews completed and data analysed.
## Table 1

<table>
<thead>
<tr>
<th>External Factors</th>
<th>Dimensions of activities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Teaching and Learning</td>
</tr>
<tr>
<td><strong>1</strong> Policy changes</td>
<td></td>
</tr>
<tr>
<td>For e.g. de-regulation of fees (Pyne, 2014);</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong> Funding</td>
<td></td>
</tr>
<tr>
<td>For e.g. students, research income, government contributions, endowments</td>
<td></td>
</tr>
<tr>
<td><strong>3</strong> External events</td>
<td></td>
</tr>
<tr>
<td>For e.g. changes in immigration laws, demography, labour market, international trends</td>
<td></td>
</tr>
<tr>
<td><strong>4</strong> Competition</td>
<td></td>
</tr>
<tr>
<td>For e.g. emergence of private providers, new medical schools</td>
<td></td>
</tr>
<tr>
<td><strong>5</strong> External governance</td>
<td></td>
</tr>
<tr>
<td>For e.g. the inter-relationship between different organisations</td>
<td></td>
</tr>
<tr>
<td><strong>6</strong> Internal governance</td>
<td></td>
</tr>
<tr>
<td>For e.g. changes in university academic board, structures</td>
<td></td>
</tr>
<tr>
<td><strong>7</strong> Accreditation</td>
<td></td>
</tr>
<tr>
<td>For e.g. Australian Medical Council (AMC)</td>
<td></td>
</tr>
<tr>
<td><strong>Other external factors/ Other comment</strong></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D

Profile of Medical Schools
Established in 2007, medical school M1 is one of the youngest medical schools in Australia. The university within which it is located has five campuses in Australia and one overseas with a current total enrolment of approximately 31,000 on-shore students. The university offers undergraduate and postgraduate programs across five subject areas—Business, Engineering and Information Sciences, Law, Humanities and the Arts, Science, Medicine and Health, and Social Sciences. It has 20,523 undergraduate students, 1,670 research trainees and an international student population of 12,360 students.

At the time of establishment, the medical school set itself up with a mission of being focused on “the three Rs—rural, regional and remote”. This distinctiveness was articulated to the Government at the time and the three-Rs philosophy seems to cascade in every aspect of its teaching and learning activities. Participants from M1 see the distinctiveness of their medial program/curriculum in several different ways, through: its case-based learning (P3), longitudinal integrated rural placement (P2, P3), and the way research is embedded into its program (P4). Along with many others, it is also moving towards offering the Doctor of Medicine (MD) to students.
Additionally, the distinctiveness of their students can be described by its small cohort size—a pull factor to draw students who seek a stronger sense of community and connection—and their capability and interest to work in rural and regional areas. Being located outside the metropolitan city is also seen as a distinguishing feature for this medical school.

As a recently established medical school, participants from this medical school acknowledged the lack of research intensity within their medical school. This was attributed to the significant amount of time and resources focused on the establishment of the medical school, although more efforts are now being refocused to support and build research activities. In particular, this medical school sees medical education research as a focus area that is distinctive about the school.

There is a sense that strategic planning and monitoring of performance within the medical school, as processes imposed upon them—shaped by the government, accrediting agencies, and the university as part of its alignment to a broader university-wide strategy. In addition to the externally imposed measures of monitoring, this medical school measured success by tracking students and their graduate outcomes and destinations, emphasising the linkage to the mission of the medical school.

The visual profiling tool was useful for strategy formulation as it is easy to read and understand, provide a means to display graphically the medical school’s current position, and provide evidence to senior management about its performance. There is a potential for the visual profiling tool to be used for benchmarking between schools of different disciplines within the university.

Distinct forces within the environment which has affected the medical school’s international strategy include changes in the general environment which affects recruitment of international students, availability of clinical internships, the tendency of international students to choose the Doctor of Medicine (MD), and the accreditation of programs by overseas agencies. Being a new school with limited track record in terms of resources, the uncertainty around Federal funding, particularly in rural funding, puts constraints around its strategy formulation. For the most part, participants from M1, perceives limited strategic agency in how it positions itself. There are constraints surrounding the external environment which the medical school may respond indirectly.
A young medical school, it was established on political imperatives and had substantial government involvement at the time. It was established to meet the need of the community in which it was located. The mission and position of the medical school was specific to the context at that time and driven by many external factors, including government, health care and community. Its distinctive feature is its student profile as the majority of students represent the demographic of the area in which the medical school is located. This is a deliberate strategy, imposed at the time of establishment.

The medical school forms part of a university, which was established in the late 1980s as a result of amalgamation of institutions during the Dawkins Reforms. The university now has six campuses in Australia with a current total enrolment of approximately 42,000 students. The university offers undergraduate and postgraduate programs across eight subject areas—Business, Computing, Engineering and Mathematics, Education, Humanities and Communication Arts, Law, Medicine, Nursing and Midwifery, and Social Sciences and Psychology. It has 34,301 undergraduate students, 983 research trainees and an international student population of 4,333 students.
In terms of teaching and learning, it sees the undergraduate (as opposed to graduate and Doctor of Medicine (MD) programs) experiential immersive model as being distinctive about its medical program and curriculum. Research activities are still at its infancy. There is an increasing focus on research as the medical school moves into its next ‘life cycle’. This medical school has a focus on medical education research and views this as being distinctive of its research. Additionally, the promotion of two hospitals to teaching status is seen as a significant knowledge exchange advantage for this medical school. Participants also perceive its location outside of the metropolitan area, its size for promoting a cohesive culture for staff and youthfulness of the medical school as distinctive features of the medical school.

Congruent to the mission of the medical school, M2 measures success by tracking students and their graduate outcomes and destinations in the region. The visual representation of its performance is useful for focusing on specific dimension of activities. It enables staff to view the different dimensions of the medical school to stimulate fresh thinking, for providing evidence to senior management, and focus resources in certain areas. There is a potential for the visual profiling tool to be used for benchmarking between medical schools of similar development, and for identifying the mission and hence the position of the school.

This last point is of significant importance for this medical school, as it sees its mission and position within the system as “morphing”, as one participant called it. A number of factors play a part.

The government of the moment is considered the more conservative of the two major political parties in Australia. This is in contrast to the government at the time of its establishment. The ongoing discussion on the deregulation of fees in the last two years has created some uncertainties around planning for the future. A number of options have been developed depending on which scenario pans out, which may impact on how the medical school will strategize into the future.

Another example of how the government may affect the strategic direction of the school is around addressing the workforce shortage in rural and regional areas. There was a pressure from the government for the medical school to engage in the national grid for rural training, which was not part of its initial strategic mission. In the recent past, the medical school has been asked on how the establishment of the rural clinical school fits into the current mission of the school. Consequently, it was time to re-think the medical school’s mission and position within the sector, in terms of its rural and regional focus.
The community within which the medical school was set up to support the workforce shortage is also shifting. The economy and the vibrancy of the regional area are growing and it no longer wanted to be characterised by disadvantage. Instead, it wants to be distinguished by speed, growth and dynamism. As a result, some strategies which were deemed to be appropriate at that time were no longer suited to the changing contexts.

A new leadership within the university meant also that the medical school, along with other departments within the university, had to rethink its strategic directions. There has been a push by the recently appointed Vice-Chancellor for more globalisation and internationalisation. In the process of developing its new strategic plan, it seemed also that the social justice ethos for the university as a whole has been diluted. This has meant that the strategic directions of the medical school needed to be re-visited and re-aligned with the wider strategic directions of the university.

Synonymously, a new dean within the school has transformed the internal culture of the medical school. The new leadership culture was characterised by “softer skills” such as empathy, effective communication, and a generally more democratic or team-styled work environment. Additionally, there was agreement that the culture encouraged innovation and a sense of collegiality within the school.

In setting up the medical school, due to time constraints, it purchased its medical education curriculum from another already well-established medical school. As its ten year accreditation with Australian Medical Council (AMC) looms, the medical school is taking the opportunity to reposition its curriculum in ways that can set it apart from others. Additionally, there has been considerable discussion on the merits and disadvantage of moving into a Doctor of Medicine (MD), a trend which has seen many medical schools pursue. However, according to most participants, it is unlikely that the medical program will move into the MD in the near future.

This second wave of changes within the medical school also accompanies pressures for increased focused in research activities and funding such as through the National Health and Medical Research Council (NHMRC). In formulating strategies for the school’s research activities, it not only has to consider the medical and health care aspects of research but it also has to align itself with the overall research objectives of the greater university. While this is still developing, there is acknowledgement within the medical school that this may affect the way the medical school positions itself in the wider context.
Established in the mid-19th century, this medical school is one of the oldest medical schools in Australia. It is based in a university with nine campuses and a total enrolment of approximately 54,000 students. The university offers undergraduate and postgraduate programs across 16 subject areas—Agriculture and Environment, Architecture, Design and Planning, Arts and Social Sciences, Business, Dentistry, Education and Social Work, Engineering and Information Technologies, Health Sciences, Law, Medicine, Nursing and Midwifery, Pharmacy, Science, Creative and Visual Art, Music, and Veterinary Science. It has 33,077 undergraduate students, 4,830 research trainees and an international student population of 12,278 students.

M3 is the only case study medical school in this study which perceives its position across all five dimensions of activities. In terms of teaching and learning, the distinctiveness of the medical program at M3 has been described by the range of clinical experience offered by the vast selection of teaching hospitals. In 2014, it had just under 300 students commenced its medical program, a significant proportion of which were international students. These students came from at least 15 different countries, with the majority from
Canada and Singapore. Its student profile is also characterised by the different disciplinary backgrounds of students, ranging from Arts and Social science to Engineering to Music studies.

The medical school takes pride in its large research base, with its disciplines and affiliated medical research institutes actively engaged in research in both the basic sciences and all major areas of clinical medicine. It focuses on five major areas of: obesity, diabetes and cardiovascular disease, cancer, neurosciences and mental health, infectious diseases, and life span.

One participant from this medical school (and the only one in this study) did not find the visual profiling tool useful for strategy formulation. The biggest issue for this participant is obtaining financial resources. Because of the internal structure of the medical school, this participant perceives limited ability to ‘compete’ for resources within the school and the university. Additionally from the interview, there was a sense that this participant would seem to be more operational rather than strategic, and hence limited capability to exploit opportunities and to formulate and execute strategies.

Consequently, environmental factors seem to impact strategy formulation more so for this participant than others. For this participant, “80 percent of my time is responding to external pressures and only 20 percent is spent in actually being able to be strategic”. This perspective is shared with another participant although the latter perceive that strategies are increasingly planned and deliberate, rather than imposed by the external environment.
Medical School M4

The university in which the medical school is located celebrated its 50th year in 2015. The university has five campuses in Australia and one overseas with a current total enrolment of approximately 36,000 on-shore students. The university offers undergraduate and postgraduate programs across five subject areas—Business and Law, Education and Arts, Engineering and Built Environment, Health and Medicine, and Science and Information Technology. It has 23,842 undergraduate students, 1,463 research trainees and an international student population of 5,904.

A medium-term medical school, it has been characterised by a number of teaching and learning innovations. It was the first medical school to introduce problem based learning, student selection by means other than high school scores, early clinical experience, and a joint medical program in partnership with two Local Health Districts (LHDs) and two universities. It is also the first medical school to admit Indigenous medical students, and be based in a metropolitan non-capital city that has a rural clinical school. In particular, the medical school takes pride in having contributed to more than half of all Indigenous doctors in Australia, in having a distinctive research presence which
is comparable to the Group of Eight universities, and in having significant experience to be considered as one of the more established medical schools in Australia.

The medical school is the highest earner of research income within its University attracting more than $20 million in external research funding. It is a major contributor to eight of the university’s fifteen Priority Research Centres, which is a strategic initiative of the university to focus its resources in areas of existing and potential research strengths. As a result of their coordinated approach to research activities, the university is ranked nationally in Australia’s top 10 research universities, with the medical school as one of the major contributors.

The visual representation of its performance is useful for strategy formulation in that it pinpoints areas of weaknesses. It is interesting to note that participants from this medical school were divided in how they view strategy formulation. One participant perceives the ability for strategy formulation as intrinsic within individuals, not necessarily one which could be attributed to the environment. Another participant viewed strategy formulation as planned and deliberate as the medical school has the freedom and autonomy to determine its position within the system.

On the other hand, another participant at the medical school perceived little strategic agency for medical schools and the formulation of strategies as mostly externally driven, and hence imposed upon medical schools. There is a constant struggle between intention and responding to external factors. A lot of effort and time is focussed on environmental forces such as reacting to new leadership, government and health service sectors. Additionally, the participant noted that within this limited capacity to develop planned strategies, there are constraints around the breadth of possibilities for medical schools to go down different paths. Medical schools can only choose from a limited range of paths and solutions to reach the same or similar positions within the system.
One of the first medical schools to educate doctors in Australia, its first students commenced in 1862. It is located within a university which has seven campuses in Australia and a current total enrolment of approximately 52,000 students. The university offers undergraduate and postgraduate programs across ten subject areas—Architecture, Building and Planning, Arts, Business and Economics, Education, Engineering, Law, Medicine, Dentistry and Health Sciences, Science, Veterinary and Agricultural Science, and Creative Arts and Music. It has 24,493 undergraduate students, 4,865 research trainees and an international student population of 14,166 students. The faculty is the university’s largest and most diverse faculty, consisting of 52 schools, departments and centres, of which the medical school is a part of.

As part of the university’s strategic plan for new undergraduate degrees leading to professional entry courses, in 2011, the medical school introduced a new medical course. The Doctor of Medicine or MD qualification has replaced the previous Bachelor of Medicine, Bachelor of Surgery (MBBS) course with graduation of the last cohort of
MBBS students in 2013. The medical school characterised the distinctiveness of its medical program by the way research is embedded into its program and its student-centred approach to learning.

Research is international and global, and on the whole still quite investigator-driven. In partnerships with leading teaching hospitals and medical research institutes, the medical school focuses on global leadership in teaching and training, health research, policy and practice across all major fields of medicine and rural health. The medical school is ranked first in Australia in two of the global subject rankings (Academic ranking of World Universities (ARWU) and the Times Higher Education (THE) World University Ranking) and second in the QS World University Rankings.

Although the standardisation of the new degree structure was ‘imposed’ by the broader university, the medical school was able to develop planned strategies to locate itself distinctively within the system. As well, because the horizon and perception of influence for the medical school is global, it is focused on building relationships internationally, with institutions and organizations overseas, as well as nationally, with partner research institutes. There is little, if at all, competition with other Australian medical schools.

Additionally, strategic agency can be attributed to leadership. A strategic leader, who can formulate and execute strategies to produce desired results, is seen as critical in leading change within the medical school. Such a leader is necessarily visionary and influential, with the ability to negotiate and exploit opportunities within the system. Strategies can be deliberate and emergent, as the medical school manoeuvres in and between various kinds of networks and alliances.

The visual profiling tool provides an overview of performance in a visually engaging way, which is useful for strategy formulation. The profiling tool can be used to provide evidence that the medical schools has attained what it intended to do, identify areas of weakness and areas that need improvement, identify areas to focus resources and investment and consequently outline priorities. An additional benefit would be to develop targets to be used as signals for the medical school to monitor performance against set objectives.
Going into its 50th year of operation, the university, in which this medical school is located, has one campus in Australia with a current total enrolment of approximately 22,807 students. The university offers undergraduate and postgraduate programs across four subject areas—Education, Humanities and Law, Medicine, Nursing and Health Sciences, Science and Engineering, and Social and Behavioural Sciences. It has 13,678 undergraduate students, 1,078 research trainees and an international student population of 3,812 students.

Established within the first decade of the university’s founding, the medical school has a focus on social accountability. The medical school prides itself for being innovative and has a reputation for being a “first mover”. It was the first medical school which was intentionally built within an academic health centre—co-location of the hospital and the medical school on one site. This predominantly United States model provides synergies between teaching, research and clinical practice, and is one that is being rolled out across Australia by the National Health and Medical Research Council (NHMRC). It was the first medical school to develop a four-year graduate-entry medical program as an alternative to the traditional five-to-six-year courses for school leavers. Along with one
other medical school, it was one of the first to graduate students with a Doctor of Medicine. Although it was not the first to implement Problem-Based Learning, the medical school felt that it was the first to make it far more “mainstream”. The medical school was first to implement the year-long rural clinical practice, which formed the basis for a national funding framework for Australia. Another first, and considered an innovation at the time of its establishment and has continued to this day, is the integrated curriculum based on system—respiratory system, cardiovascular system, neurology system—while other medical schools were teaching “biochemistry as a topic, anatomy as a topic”. The innovative nature of their medical teaching and the curriculum of the medical program have seen the curriculum being adopted by medical schools in Australia and overseas.

When the university and the medical school were first established, everyone thought that it was going to be “second class education” but it has proven itself to be a “classic disruptive innovation”. As a consequence, there has been a move from the more established medical schools to copy from the younger medical school.

As a medium-term medical school, its research activities are somewhat established particularly with a focus in medical education research. As its research activities intensify, the tension between its mission of social accountability and research intensity is an issue it is grappling with.

The visual profiling tool provides a great overview of the performance of the medical school, directs discussion and people to target areas, enable more-focussed planning, and confirms the position of the school. Interestingly, participants from this medical school, unanimously, see the healthcare of patients and the society in which the medical schools serve as their ultimate goal. They do not perceive other medical schools as competitors, and consequently view strategy as planned and measures of success as fit for purpose.

Interestingly, the medical school’s performance did not seem to fit the strategic position it has articulated for itself, as described by participants. While participants perceived its position to be focused in teaching and learning, research and knowledge exchange, their performance in these dimensions did not seem to measure up. This could just mean that the medical school is not performing as well as it could be in those areas. Additionally, its performance in student profile seems to indicate a distinctive feature for the medical school, one that was not perceived by participants.
Minerva Access is the Institutional Repository of The University of Melbourne

Author/s: 
MAHAT, MARIAN

Title: 
Strategic positioning in Australian higher education: reshaping perspectives

Date: 
2016

Persistent Link: 
http://hdl.handle.net/11343/91984

File Description: 
STRATEGIC POSITIONING IN AUSTRALIAN HIGHER EDUCATION: RESHAPING PERSPECTIVES