# **Research based teaching: a managerial perspective**

Submission to the Australian Universities Accord Panel

# George Rosier August 2023

What is the aim of university education? Is it:

- To teach theories, formulas and methods of analysis,
- To develop students' ways of thinking, or
- To prepare leaders to meet unforeseeable challenges in an unknown future?

(Adapted from Bowden and Marton, 1998)

#### **Executive summary**

Several decades of research on learning and teaching in higher education has provided ways of measuring the quality of the learning experience, such as the Student Experience Survey (SES), noted in the Panel's Interim Report (see p.88). The SES measures quality over entire courses at institutional level. However, this research has also provided guidelines for course design and delivery, surveys specifically designed to measure educational quality at subject and class level, and ways of evaluating alternative pedagogies. Taken together, the methods and findings of this research provide guidelines and tools for a research based program of improvement in teaching and learning at universities.

The full potential of this research, often called the "student learning research", is yet to be realised. To work towards this goal, and thus improve the student learning experience, university teachers will need an understanding of the research and its implications for their subjects and courses. Academic managers would have to provide the support and coordination necessary for individual academics to undertake an improvement program. Thus, the management implications of applying the student learning research to improve university education, should be appreciated at all levels, from schools and departments to the vice-chancellor and the governing board.

This submission makes one overarching recommendation, to coordinate all university activities that affect teaching and learning, to achieve improved learning outcomes. This might seem like a statement of the obvious, but research has found that university policies and practices, and even physical facilities, can be serious barriers to learning. The submission then provides four specific, practical recommendations, that are designed to provide achievable improvements in the learning experience.

#### Introduction

This submission is intended to provide practical suggestions to assist in achieving significant improvements in university education. It is based on:

- The research that underpins the Student Experience Survey (SES) in Australia, and the National Student Survey (NSS) in Britain. This research, based squarely on the students' experience of learning, has been carried out over several decades, by leading researchers in Sweden, Britain, Hong Kong and Australia.
- The author's personal experience, over thirty years, as an award-winning university teacher, including service as head of department, head of school and associate dean in the faculty of management. During this time, the author also served as an elected staff representative on two university governing boards and other committees. A brief CV is attached.

Teaching at university level is the only teaching role that does not generally require a formal teaching qualification. The implicit assumption has been that students learn best from leading researchers in the relevant discipline. However, almost all the content in courses taught at universities, could be characterised as "established knowledge". Teaching such courses requires proficiency in design, delivery and on-going improvement of courses, as well as institutional proficiency in managing these processes.

The current practice, of recruiting researchers and expecting them to be able to teach, has resulted in the continuation of traditional forms of instruction (lectures, tutorials and in some courses, laboratory classes) and in assessments that are often mere tests of short-term memory. Decades of research in higher education has found these educational practices to often produce ineffective learning and a superficial understanding of the subject content (see, for example, Ramsden, 2005).

#### **Overarching recommendation:**

If we want to really make university education effective and accessible, we need to ensure that all aspects of universities that affect teaching, are aligned to produce the desired learning outcomes in each course. This should be the responsibility of all staff from school level to the vice-chancellor and governing board.

This might seem like a statement of the obvious, but it is important to understand that there are aspects of universities' policies and practices that actually inhibit or even undermine learning (Hockings, 2005; Trigwell & Prosser, 2020, pp. 85-98). In explaining his concept of constructive alignment, Biggs, (1996) argues that all aspects of a course should be aligned to produce the desired learning outcomes. It is no use trying to teach critical thinking, using pedagogies and assessments that foster rote learning. Biggs focussed on alignment of the educational elements of a course. However, to make progress towards this ideal, policies, practices and management actions should also be aligned towards achieving this goal. In short, it is necessary to appreciate the managerial implications of making a commitment to improving university education.

Universities are complex organisations. They face a multitude of competing demands, of which the most obvious are the often competing requirements to achieve excellence in both teaching and research. Management practices can vary from autocratic to collegiate, even within the one institution. Universities operate within a complex set of constraints, especially financial and industrial constraints. However, even within such environments, it is possible to make changes that should support significant improvement in teaching and learning. These changes and their implications, are outlined below.

# **Research basis for course improvement**

The Panel's Interim Report notes the use of the Student Experience Survey (SES) as a measure of course quality. This survey, like its predecessor, the original version of the Course Experience Questionnaire (CEQ), was based on many years of research on the process of learning in higher education (Ramsden, 1991). This research, sometimes called the "student learning research" (Biggs, 1999 p. 59), is ongoing, with recent books summarising the current situation (see, for example, Biggs, Tang & Kennedy, 2022; Trigwell & Prosser, 2020). This research offers several valuable contributions to the current project:

- 1. It provides ways to measure course quality on a macro scale, such as the SES.
- 2. It provides guidelines for the design and delivery of quality courses,
- 3. It provides surveys and methods to evaluate course improvements at class and subject level,
- 4. It offers ways to evaluate alternative or innovative pedagogies, and
- 5. Taken together, the student-learning research provides guidelines and tools for a carefully managed program of improvement in teaching and learning at universities.

Of these five potential contributions, only the first is used extensively. The second has been used for minor changes to teaching policies, and for some staff development programs. There are no known instances of universities actually applying this research to systematically improve their courses or to evaluate course improvements or alternative pedagogies.

In short, we have over four decades of research that provides the tools to improve teaching and learning at universities. We must use all these tools to achieve the improvements we are seeking. This has implications for the staffing, management and even the physical facilities of universities.

### **Recommendation 1.**

# Universities should design, deliver, improve and evaluate their courses, using principles, guidelines, and surveys from the student learning research.

Teaching staff and academic managers should review existing courses and design new courses, using the guidelines from the student learning research, as outlined in recent books such as those by Biggs, Tang and Kennedy (2022) and by Trigwell and Prosser (2020). Research-based surveys such as the Revised Study Process Questionnaire (R-SPQ-2F) (Biggs, Kember & Leung, 2001) should be used to evaluate student approaches to learning (an accepted indicator of course quality) and the course revised, in accordance with the research, to improve student learning in the next offering of the course. These revisions

should then be evaluated using the same survey and simple statistical comparisons. These research-based surveys should be used judiciously, to avoid "survey fatigue" in students.

Alternative pedagogies could also be evaluated in the same way (see recommendation 3 below).

University policies and practices should be reviewed in terms of the student learning research, to ensure they do not actually inhibit learning (see Hockings, 2005).

### **Recommendation 2.**

Ideally, all academic staff involved in teaching and all academic managers up to and including the vice-chancellor should have a working knowledge of the student learning research and appreciate is implications for education at universities. This should be regarded as a long term but high priority goal.

In order to implement recommendation 1, teaching staff and their managers need an appreciation of the student learning research. Without such an understanding, policies can be developed, based on a superficial reading of research summaries. The result is likely to be that staff engage in a box ticking exercise when developing course documentation, without knowing why these policies are being imposed. This generally results in little or no change in actual teaching and assessment practices. Academic staff must understand what they are doing and why. Academic managers, at all levels, must also understand the student learning research and be able to support teaching staff appropriately.

However, the difficulty of achieving this goal, even in the long term, should not be underestimated. It requires institutions to place a higher priority on teaching, and, by implication, a lower priority on research, and this shift in priorities should be reflected in funding allocations and staff time. This will be a major challenge, since institutions have been ranked and assessed primarily on the basis of research output for generations. Individual academics have been recruited and promoted primarily on the basis of research publications. In some schools, teaching has even been regarded as punishment for poor research output. Changing these attitudes will be challenging. Tactics that could be used, judiciously, to effect such a change over time include:

- Universities could conduct staff development programs, aimed at providing all academic staff with an appreciation of the student learning research. These programs could be informal or (preferably) formal courses leading to a qualification at Graduate Certificate level or above. Some universities already run such courses for new academic staff and such programs should be expanded until all academic staff have such a qualification.
- Staffing policies could be changed, making knowledge of the student learning
  research a criterion for recruitment and promotion of academic staff at all levels, up
  to and including the vice-chancellor. Initially, this should be a desirable attribute, but
  eventually it should become an essential criterion, with rare exceptions being made
  for "research-only" staff.
- Universities could encourage academic staff to become "fellows" at various levels, of AdvanceHE (formerly the Higher Education Academy). Some Australian universities are already active in this area.

- Universities could run pilot projects, getting schools or faculties to evaluate subjects using surveys from the student learning research, and then redesign and re-evaluate the subjects. Successes should be publicised and rewarded. Participants should publish research papers on the projects irony intended).
- Universities could place a high weighting on demonstrated success in applying the findings of higher education research in practice, when considering staff for recruitment or promotion.

All such initiatives should have the aim of building a shared conception of university teaching. Trigwell, Prosser and Waterhouse (1999) identified a range of conceptions of teaching held by university teachers. They found that academics who held more of an "Information Transmission/Teacher-Focussed" (ITTF) conception of teaching at one end of the range tended to produce more of a rote learning (or a surface approach to learning) in their students, whereas teachers who held more of a "Conceptual Change/Student-Focussed" (CCSF) conception of teaching at the other end tended to produce more of an approach to learning that led to understanding and a critical appreciation of course content. However, having frontline teachers using a CCSF conception of teaching is not enough. They must be supported by colleagues and managers at all levels, who hold a similar conception of teaching and who realise the implications of the student learning research and its application in the university.

While this recommendation, and the suggestions above, might seem daunting, it should be possible to make considerable progress in the short term, harnessing the significant number of academic staff who are committed and enthusiastic teachers. Such members of staff would welcome and support Initiatives that would improve their own courses, increase support for teaching and learning, and provide better recognition and status for teaching and related activities.

### **Recommendation 3.**

Universities should consider the introduction of innovative pedagogies and course design, where supported by rigorous evaluation. An interchange of ideas between disciplines and between institutions could act as a catalyst for the introduction of alternative pedagogies.

The dominant paradigm for university teaching is lectures, augmented by tutorials and sometimes laboratory classes. In some courses, a research project is also included. There has been limited innovation in pedagogy. The only exception is the migration of courses to online delivery or to a mixed mode of online and conventional lectures.

The use of alternative pedagogies has been reported in the literature, but few seem to have gained wide acceptance. Problem-based learning (PBL) is one such pedagogy (see, for example, Boud & Feletti, 1997).

One surprising example of an alternative pedagogy is the Harvard case method, which has become the hallmark of the top business schools around the world. It has been in use for over a century, and is believed to be especially effective (see, for example, the classic paper by Gragg, 1940). Tracy and Waldfogel (1997) found that graduates from courses that used case method teaching commanded higher salaries than graduates from lecture-based

programs, regardless of the perceived prestige of the school. A recent study, based on the student learning research, found that the case method is significantly more effective than lectures in fostering student engagement and a critical appreciation of the subject content (Rosier, 2022). Note that case method teaching is often misunderstood, and is frequently confused with the use of case studies as simple examples of theories, or of good or bad practice. Case method teaching involves rigorous Socratic questioning of students, requiring them to debate possible management actions in response to a real (or realistic) management situation. The case method is best appreciated by attending a case method class or watching one on video (see, for example, Harvard Business School, 2012, 2021). However, the case method has had limited uptake in business courses and has generally not been accepted in other disciplines, in spite of its apparent value in disciplines as varied as ancient history and nursing (Foran, 2001; Kaddoura, 2011; Li et al., 2019).

#### **Recommendation 4.**

Responsibility for evaluation and improvement of courses, based on the student learning research, should lie with the staff teaching those programs. Responsibility for coordinating and supporting these processes of evaluation and improvement, should lie with academic managers at all levels, from school or department to the vice-chancellor.

Teaching staff are often constrained in their ability to effect course improvement, by university policies and practices (Hockings, 2005). An important component of the role of academic managers is to remove these constraints and facilitate the improvement process. In addition to policies and practices, constraints can include limited staff time, limited funding for teaching and even inappropriate teaching facilities (Erskine, Leenders & Maufette-Leenders, 2003, pp. 18-28). Many of these constraints come down to funding, and thus there are limits to the support available, but the author's experience has shown that significant improvements can be made, even within these constraints.

### Summary

Teaching staff need an appreciation of the student learning research, as well as management support to undertake systematic improvement in course design and delivery. This work should be recognised and be a criterion for recruitment and promotion. Coordinating and supporting research-based course improvement should be an integral component of the role of academic managers up to and including the vice-chancellor and the governing board.

Achieving excellence in learning, teaching and student experience is possible. The knowledge is available, the tools are available. We just need the determination and coordination, and perhaps some modest funding allocations. It will be a long-term project, but, to borrow a slogan from Nike, we should just do it.

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# George Rosier – a brief introduction

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George is an award-winning university teacher, with over 30 years' teaching experience. Before starting his academic career, George served in the Australian Army (National Service) completing officer training and serving as a junior officer in the Royal Australian Engineers. After completing his military service, he worked as a civil engineer in Australia, Britain and Canada.

Since moving into higher education, George has become known for his use of proven teaching techniques, including the Harvard case method, simulations, work-based projects, and reflective exercises to stimulate critical thinking applied to management situations.

During his time at the University of Western Sydney (now Western Sydney University) he served as Head of Department, Head of School and Associate Dean. He was elected as a staff representative on the Board of Governors (now the Board of Trustees), the UWS Hawkesbury Council and the College of Business Workload Committee., in addition to appointed roles on various other committees, notably two advisory committees for the design of teaching spaces.

He has taught seminars on case method teaching and on research-based teaching. He has taught at the University of Technology Sydney, the Australian Graduate School of Management (UNSW), the SP Jain School of Global Management and the Macquarie Graduate School of Management. He holds degrees in civil engineering, business administration and adult education.

George retired from teaching in 2019, but maintains an interest in research-based teaching, applying the research findings from the field of higher education to the design and delivery of business courses. With the support of The Case Centre in Britain, he has published research in this field.

#### Location: Sydney, Australia

