

A sound research base for teacher education

How effective is teacher education?

- 2.1 Schools are increasingly complex institutions expected to meet multiple goals and to respond to shifting social and political agendas. To make schools effective, to create the kind of enabling and flexible environments in which students can flourish, teachers themselves should be the product of a first rate teacher education experience.
- 2.2 The committee has been impressed by the dedication and professionalism of the teacher educators, recent graduates, teachers, principals and students that it has met in the course of this inquiry. There is clearly much of high quality in teacher education courses in Australia and many excellent individual initiatives. However, recent research from the Australian Council for Educational Research (ACER) indicates that there is significant variation in the quality of teacher education courses across providers.¹
- 2.3 From the committee's perspective there is simply not a sufficiently rich body of research evidence to enable it to come to any firm conclusions about the overall quality of teacher education in Australia. There is not even agreement on what quality in teacher education means. Much of the data that is available is based on the perceptions of recent graduates, teachers and principals as reported in answers to questionnaires. While

1 L. Ingvarson, A. Elliott, E. Kleinhenz & P. McKenzie, *Teacher education accreditation: A review of national and international trends and practices*, Teaching Australia, Canberra, 2006, p. 2.

this data is useful and should form part of the evidence about the effectiveness of teacher education, in the committee's view it is not on its own sufficiently robust to inform either course reviews or policy development. The submission that resulted from the Hobart Forum on Teacher Education expressed a similar view:

Despite the work of individual researchers, universities, the ACER, professional bodies, and occasional reviews and inquiries, our knowledge of the effectiveness and impact of different forms and elements of teacher education is not as strong as it needs to be for sound policy making. Major efforts are being made in the USA to revitalise teacher education through a series of national studies, reports and organisational structures, together with a renewed research drive. These reflect deep concern about the need to justify practices in teacher education through better knowledge of how they result in higher quality teaching and better learning by students in schools. ²

2.4 The lack of evidence on the effectiveness of different approaches to teacher education was described by another organisation as follows:

While research has demonstrated that the quality of student learning in schools directly and significantly reflects the quality of the classroom teacher, we have limited research evidence to draw on to determine how best to prepare teachers. The numerous recommendations for improved partnerships between schools and universities, more practicum, alternative pathways for career change graduates etc, that have been presented in recent reviews of teacher education have not been grounded in research with supporting evidence. ...There is a dearth of contemporary reliable evidence about the impact of teacher education on, for example: teacher performance in schools; student learning outcomes; and, various aspects of school and community functions. The extent to which the organisation and content of teacher education courses is informed by research has not been seriously tested in Australia. Much of the effort is sporadic, local, largely about perceptions, and with very little reference to the outcomes for either the graduates as they enter the profession, or for the students they teach. By international standards the funding for research in this critical area is seriously lacking. The research needed to elucidate critical factors in teacher education can only be generated if academic staff

2 Hobart Forum on Teacher Education, *Submission No. 171*, p. 7.

have the time and resources to support them as active researchers.³

- 2.5 Assessing the effectiveness of teacher education courses should be high on the agenda of course providers, and teacher registration and course accreditation authorities. Thorough assessment of teacher education courses will demand the development of tools and processes for evaluating the quality of graduates' teaching in real school settings. The committee is encouraged by recent research by ACER which goes some way towards providing instruments that will allow for a more systematic and thorough evaluation of the quality of teacher education courses.⁴ It also notes ACER's current involvement in a cross-national study of how different countries educate people to become teachers and the outcomes of teacher education programs with a focus on teachers of mathematics and science.⁵ The committee strongly encourages continued work in these areas.

Does the data on the quality of teacher education suggest a cause for concern?

- 2.6 Recent surveys of beginning teachers and/or supervisors and principals present a mixed picture of the effectiveness of teacher education programs. For instance, in a recent survey of beginning teachers by the Australian Education Union (AEU), 38% of respondents were satisfied with their pre-service education, 40% of respondents rated it as preparing them 'well' or 'very well' for the reality of teaching and 22% rated it as 'poor' or 'very poor'.⁶
- 2.7 Similarly, in a study on the transition of beginning teachers into professional life, beginning teachers and their supervisors were asked for a general assessment of how well teacher education courses prepare beginning teachers for their first year of teaching. The results indicated that 29.6% of supervisors and 44.6% of teachers felt that teachers were prepared 'well' or 'very well'; 45.2% of supervisors and 36.1% of teachers felt teachers were prepared 'adequately'; and 25.3% of supervisors and

3 The Faculty of Education, University of Melbourne, *Submission No. 62*, pp. 2-3.

4 L. Ingvarson, A. Beavis & E. Kleinhenz, *Factors affecting the impact of teacher education courses on teacher preparedness*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, April 2005; L. Ingvarson, A. Beavis, C. Danielson, L. Ellis & A. Elliott, *An Evaluation of the Bachelor of Learning Management at Central Queensland University*, DEST, Canberra, 2005. (*Exhibit No. 69*)

5 <http://www.acer.edu.au/research/projects/TEDS.html>

6 <http://www.aeufederal.org.au/Publications/Btsurvey06.html>

19.3% of teachers felt teachers were 'not very well' or were 'poorly' prepared.⁷

- 2.8 Figures from a recent survey of new teachers in Queensland, undertaken as part of an evaluation of the Bachelor of Learning Management at Central Queensland University, indicated that 20-40% of beginning teachers felt ill-prepared across a range of dimensions. While the principals surveyed as part of the study generally believed that the teachers had been prepared satisfactorily for their first year of teaching, "there was concern that preparation was less than adequate for some teachers in specific areas of professional knowledge and professional practice. In only eight of the 58 items did over 40% of principals believe teachers had been well prepared. On no measure did more than half the principals feel that teacher education courses had prepared graduates well."⁸ Even a very circumspect reading of the figures suggests that while there may not be a crisis in teacher education, there is room for improvement.
- 2.9 In other survey data⁹, a number of issues in teacher education are consistently identified as areas of concern, including:
- aspects of the school-based professional experience components of courses;
 - the weakness of the link between 'theory' and 'practice';
 - the perceived lack of relevance of some of the theoretical components of courses; and
 - the capacity of beginning teachers to deal adequately with classroom management issues, to perform assessment and reporting tasks and to communicate with parents.
- 2.10 The attrition rate in the early years of teaching also raises questions about the effectiveness of teacher education programs.

7 Department of Education, Science and Training, *An Ethic of Care: Effective Programmes for Beginning Teachers*, 2002, p. 17.

8 L. Ingvarson, A. Beavis, C. Danielson, L. Ellis & A. Elliott, *An Evaluation of the Bachelor of Learning Management at Central Queensland University*, DEST, Canberra, 2005, pp. 53 & 74. (Exhibit No. 69)

9 See, for example: *Submission No. 50; Submission No. 50.1; Exhibit No. 57; Exhibit No. 69;* L. Ingvarson, A. Beavis, & E. Kleinhenz, *Teacher education courses in Victoria: Perceptions of their effectiveness and factors affecting their impact*, August 2004; Department of Education, Science and Training, *An Ethic of Care: Effective Programmes for Beginning Teachers*, 2002; Australian Education Union, *National Beginning Teacher Survey Results 2006*.

It is well established in the Western world that between 25% and 40% of all newly-recruited teachers resign or burnout in their first three to five years of teaching.¹⁰

- 2.11 The review, *Australia's Teachers: Australia's Future – Advancing Innovation, Science, Technology and Mathematics* estimated that up to 25% of teachers may leave the profession within five years.¹¹ In the recent survey of beginning teachers by the Australian Education Union, 45.6% of respondents did not see themselves teaching in 10 years time.¹² Although the high attrition rate of beginning teachers is of concern, there is insufficient data to determine the extent to which it arises from inadequacies in the quality of preparation provided by pre-service teacher education courses, the lack of support provided to beginning teachers during the induction phase, or other factors. The lack of data in this area reinforces the need for teacher education to be placed on a more solid research evidence-based footing.
- 2.12 It is imperative that steps are taken to establish what is meant by quality teacher education outcomes and to identify the approaches that best deliver them. Research is needed to assess the impact on the quality of teacher education of a range of factors including:
- the backgrounds and characteristics of students and teacher educators;
 - selection processes;
 - course length, course location and course structures;
 - course content and delivery modes;
 - course assessment procedures;
 - the nature and length of professional experience;
 - the nature and strength of partnerships between stakeholders; and
 - the nature of induction processes.
- 2.13 The initial step should be a longitudinal study to assess the effectiveness of different models of teacher education across Australia. The longitudinal study should follow cohorts of students from selection into courses, through pre-service preparation and into the first five years of teaching. While the immediate goal of a longitudinal study would be to enable the

10 R. Ewing & D. Smith, 'Retaining quality beginning teachers in the profession', *English Teaching: Practice and Critique*, (Vol. 2, No.1), May 2003, p. 15.

11 Committee for the Review of Teaching and Teacher Education, *Australia's Teachers: Australia's Future: Advancing Innovation, Science, Technology and Mathematics - Main Report*, DEST, Canberra, 2003, p. 87.

12 www.aeufederal.org.au/Publications/Btsurvey06.html

informed consideration of the effectiveness of pre-service teacher education, continuing the collection of data through the careers of teachers would allow for the investigation, in the future, of a whole range of other questions including the effectiveness of on-going professional learning.

- 2.14 Longitudinal studies, while challenging and expensive, are absolutely critical to the future improvement of teacher education in Australia. Given the existing level of investment by the Australian Government in teacher education in universities¹³, an investment in a longitudinal study is imperative

Recommendation 1

The committee recommends that the Australian Government commission a comprehensive longitudinal study into the effectiveness of different models of teacher education across Australia. The longitudinal study should follow cohorts of students from selection into courses, through pre-service preparation, the first five years of service and through their careers.

How adequate is the level of funding for educational research?

- 2.15 A number of submissions raised concerns about the adequacy of the level of funding for educational research and the difficulty of gaining funding for some areas of applied research.
- 2.16 Funding in Australia for higher education research and research training operates as a dual support system comprising peer reviewed competitive schemes and performance-based block operating funding schemes.¹⁴

Block operating funding schemes

- 2.17 Funding to higher education for research block funding schemes administered by the Department of Education, Science and Training (DEST) in 2005 amounted to almost \$1.2 billion dollars. The schemes can be divided into two broad groupings: the first group comprises grants to support research capability – the Institutional Grant Scheme (IGS) and the Research Infrastructure Block Grants (RIBG) Scheme; the second includes

13 In 2005, the Australian Government provided around \$329 million in funding for units of study in the field of education. (Not all students taking these units would be preparing to be teachers).

14 Department of Education, Science and Training, p. 1. (*Exhibit No. 118*).

grants to support research training – the Research Training Scheme (RTS) and the Australian Postgraduate Awards Scheme. A fifth scheme, the Regional Protection Scheme (RPS), operates to offset losses from the RTS and IGS suffered by designated regional providers.

- 2.18 The Committee is unable to establish the proportion of these funds that support research into teaching and education. Universities determine the internal distribution of the block funding that they receive from the Australian Government across their disciplines but report to the Australian Government at the block level.
- 2.19 In May 2004, the Prime Minister announced that the Australian Government would establish Quality and Accessibility Frameworks for publicly funded research. In December 2005, the Expert Advisory Group (EAG) released its final advice on the preferred Research Quality Framework (RQF) model.
- 2.20 The overall objective of the RQF is to develop a mechanism for broadly assessing research quality and its impact in a way that will be relevant across the full breadth of research organisations in receipt of public funding. Initially the model will apply to research block funding distribution for universities. In the longer term it may also apply to other key publicly-funded research agencies.
- 2.21 Fundamental to the model is the importance of review by peers and qualified end-users. There will be twelve Expert Assessment Panels based on research fields, courses and discipline codes. The configuration of codes has been designed to provide an appropriate balance between discipline coverage and a fair distribution of workload for assessors.
- 2.22 While the RQF was broadly welcomed by universities that appeared before the committee during this inquiry, there were some concerns that education would be disadvantaged because there would not be a specific expert panel to assess applications in the field of education.

Prof Riordan UTS – There is pressure on us from the universities to employ research-active staff who can compete in the RQF and get ARC grants, not necessarily only people from diverse social backgrounds or even expert practitioners... I do think looking at that RQF and setting up different guidelines or quality criteria for education research would have the impact of allowing us to really broaden out our staff recruitment and the types of resources we could access to do the things that we want to do.

Prof Reid – I second that. That ACDE mentioned a similar thing in their submission. If we were to have a panel for education as one of the RQF panels or a recommendation from your review that

such a panel were to be set up, I think that would make a big difference in both the research capability and the leadership in education... The research that school systems want is research into addressing immediate problems in practice... RQF requires you to make arguments around impact, but you would then structure those arguments on impact around how this has led to a direct intervention in practice in one school in one state. Without a separate education panel, people on those panels then compare that to engineering, science or medicine, where you have global impact and it does not rate.¹⁵

- 2.23 The committee notes that in the EAG's final advice on the preferred RQF model, education shares an expert panel with social sciences and politics. Specifically the discipline and sub-discipline areas under the purview of this expert panel are: Education studies; Curriculum studies; Professional development of teachers; Other education; Political science; Policy and administration; Other policy and political science; Sociology; Social work; Anthropology, Human geography and Demography.¹⁶ The committee is satisfied that the discipline mix in which education is grouped should not give rise to the concerns expressed to the committee in this inquiry.

Peer reviewed competitive schemes

- 2.24 The major peer reviewed competitive schemes are administered by the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC).
- 2.25 There was a perception expressed in some submissions that it is difficult to get competitive grant funding for educational research, particularly for research which is applied rather than experimental in nature.¹⁷

I applied to one ARC several years ago and they criticised a literature review. They said, "It is only a one-page literature review." I said, "But that is because there is no literature here. I want to produce some literature." But the reviewers just saw it and said, "This is inadequate," because they are coming from a different framework. It is very easy to say, "There's all this psychological information we have got about motivation and I

15 *Transcript of Evidence*, 8 March 2006, pp. 42-43.

16 Department of Education, Science and Training, *Research Quality Framework: Assessing the quality and impact of research in Australia, Final Advice on the Preferred RQF Model*, December 2005, p. 10.

17 See, for example: University of Wollongong, *Transcript of Evidence*, 4 April 2006, p. 34; University of Queensland, *Transcript of Evidence*, 7 July 2005, p. 44; Australian Association for Research in Education, *Submission No. 104*, p. 4.

want to fill in another bit of a picture,” and you get educational research funding. You get educational research funding for doing work on improving statistical methods. That will not help people in the classroom. What helps people in the classroom are the kinds of stories which we can produce about teaching and which we can then put out there in a public workplace amongst the profession. The ARC – the one which did not give me any funding at all – said, “How do we communicate teachers’ stories amongst themselves?” Most principles of practice involve one-liners that we then illustrate with stories...¹⁸

2.26 According to the Australian Association for Research in Education (AARE):

In contrast with other fields, there is a dearth of national competitive research schemes in education. The only education-specific schemes, among the hundreds on the Australian Competitive Grants Register (http://www.jcu.edu.au/office/research_office/assist/ncg.html) are the NCVER (research in vocational education and training) and relatively small literacy and numeracy schemes managed within the DEST Schools Group. This limits the overall production of educational research, and especially limits larger scale, mission-oriented research that is not tightly controlled by funding bodies (such as school authorities). It is this kind of research that may make a significant contribution to the research base of teacher education. A significant gap remains for high quality, larger scale research into teacher education... This includes longitudinal research. It also includes high quality quantitative *and* qualitative research, contributing breadth and depth respectively to understandings in the field and which together will provide the necessary evidence to inform action and policy.¹⁹

2.27 Most ARC funding to the various discipline areas is provided under the Discovery Projects Scheme and the Linkages Projects Scheme with distribution of funding in 2005 as shown in the following tables.

18 Dr David Tripp, *Transcript of Evidence*, 25 October 2005, p. 34.

19 Australian Association for Research in Education, *Submission No. 104*, pp. 3-4.

Table 1 Discovery Projects, new by Research Fields, Courses and Disciplines for Classification (RFCD), 2005

RFCD	Applied (no.)	Funded (no.)	Funding (Year 1) (\$)	Funding (Total) (\$)
Agricultural, veterinary and environmental sciences	55	13	1 674 000	5 427 000
Architecture, urban environment and building	29	5	489 455	1 296 797
Behavioural and cognitive sciences	175	60	4 105 086	12 423 448
Biological sciences	519	155	16 378 866	48 790 384
Chemical sciences	233	74	9 798 428	30 391 872
Commerce, management, tourism and services	85	21	1 356 016	3 587 513
Earth sciences	188	60	6 648 764	19 164 007
Economics	77	36	2 460 726	7 077 010
Education	95	21	1 605 000	4 448 000
Engineering and technology	520	161	17 774 665	53 083 191
History and archaeology	129	54	3 826 603	11 674 970
Information, computing and communication sciences	246	64	5 445 255	15 261 312
Journalism, librarianship and curatorial studies	16	6	423 214	1 636 194
Language and culture	138	44	3 029 685	8 871 777
Law, justice and law enforcement	72	23	1 581 869	4 753 176
Mathematical sciences	135	50	4 569 664	14 255 411
Medical and health sciences	137	45	3 902 582	10 699 398
Philosophy and religion	63	19	1 096 708	4 107 793
Physical sciences	211	60	7 023 478	22 100 404
Policy and political science	78	24	1 640 621	4 282 530
Studies in human society	148	46	3 584 402	10 862 214
The arts	65	14	1 113 189	3 347 246
Total	3 414	1 055	99 528 276	297 541 647

Source: Australian Research Council Annual Report 2004-2005

Table 2 Linkage Projects, new by RFCD, 2005

RFCD	Applied (no.)	Funded (no.)	Funding (Year 1 ¹) (\$)	Funding (Total ²) (\$)
Agricultural, veterinary and environmental sciences	108	48	3 805 163	11 676 577
Architecture, urban environment and building	29	9	758 740	2 274 454
Behavioural and cognitive sciences	24	12	1 037 187	3 205 314
Biological sciences	106	52	4 394 822	13 741 014
Chemical sciences	46	25	2 624 229	8 074 017
Commerce, management, tourism and services	59	33	1 968 672	5 693 120
Earth sciences	30	17	1 439 552	4 924 170
Economics	19	10	591 268	1 603 968
Education	56	22	1 538 381	4 726 182
Engineering and technology	191	85	7 536 728	23 318 541
History and archaeology	15	10	621 900	2 203 113
Information, computing and communication sciences	83	36	2 514 315	8 058 397
Journalism, librarianship and curatorial studies	11	3	394 522	1 133 482
Language and culture	17	7	426 079	1 092 912
Law, justice and law enforcement	29	15	1 113 328	3 305 007
Mathematical sciences	10	6	430 672	1 242 003
Medical and health sciences	98	49	3 254 679	9 707 520
Philosophy and religion	5	2	189 804	776 141
Physical sciences	8	6	497 920	1 684 561
Policy and political science	17	5	500 777	1 335 042
Social Sciences, Humanities and arts - general	1	0	0	0
Studies in human society	66	29	1 706 988	4 783 356
The arts	20	7	538 664	1 357 511
Total	1 048	488	37 884 390	115 916 402

¹ Year 1 (2005 for LP grants awarded in Round 1; 2005-06 for LP grants awarded in Round 2)

² Total (2005 to 2010)

Source: Australian Research Council Annual Report 2004-2005

2.28 The Australian Council of Deans of Education (ACDE) pointed out that “of the successful 2005 Australian Research Council (ARC) discovery grants, just 21 of 1,051 were in the field of education.”²⁰ While this is true, the committee notes that the success rate for education applications was not significantly lower than that for most other disciplines. The committee also notes that a number of disciplines received less funding than education for both discovery and linkages project funding. Of more concern is that an area as important as education receives proportionally no more funding than a number of areas that arguably have less social

impact. Yet the quality of education underpins developments in all areas including the two other major areas of national significance — health and science. Both health and science have significant alternative sources of research funding; the NHMRC (the base funding for which was increased in the 2006-07 budget to over \$700 million per annum by 2009-2010), through initiatives such as the CSIRO Collaborative Research Program, and also through partnerships with industry. The committee acknowledges that other discipline areas in receipt of ARC funding also need to have access to funds for research and it is not suggesting that the ARC processes of funding or allocation methods should change. Rather, serious consideration should be given to adequately funding education research in its own right.

- 2.29 The AARE suggested that a national competitive grants scheme, such as the Education Research and Development Committee (ERDC) that operated from the mid 1970s to 1981, be established to support large scale, high quality research into teacher education.²¹ The ACDE identified a need for a specific allocation of public research funds for education and suggested that Teaching Australia (formerly NIQTSL) could have a role in promoting educational research.

The ACDE has previously argued that the NIQTSL could be an important national body in promoting educational research. Presently, research productivity is held to be very uneven between institutions, and research activities are seen to be distributed poorly. These problems could be addressed by the Institute allocating research funds on a distributed model, similar to the ARC and the National Health and Medical Research Council (NHMRC).²²

- 2.30 Although in the course of this inquiry, a number of universities described in some detail their engagement in research and their efforts to embed the results of this research into their undergraduate and post-graduate teacher education programs, the committee was surprised and concerned to discover how little research has been undertaken into the effectiveness of different models of teacher education. This gap in the knowledge base in teacher education needs to be addressed. Quality teaching, the ultimate goal of teacher education, demands also that it is evidence-based. The committee is concerned that neither current funding levels nor mechanisms for research and research distribution are sufficient to ensure that teacher education, teaching and policy development are as evidence-based as they should be.

21 Australian Association for Research in Education, *Submission No. 104*, p. 5.

22 Australian Council of Deans of Education, *Submission No. 31*, p. 42.

One of the issues is that there has never been money for systematic evaluation. You can put in applications until you are blue in the face, There is not a specific education bucket of money; you have to go into the same bucket of money. Most areas have their own industry areas as well, and it used to be the case that each education department would have a large research branch. When I joined the curriculum research branch in 1979 there were 400 people in it. Those branches do not exist anymore, so there is no parallel. The department of primary industries will have a group or the rural area will have a group or the NHMRC will deal with medical and health related issues. There is not a parallel body for education.²³

- 2.31 The committee recognises that there is a need to increase the funding available to support high quality research in education and that investing in educational research will result in significant cost savings later on remedial measures.

Recommendation 2

The committee recommends that the Australian Government establishes a specific Educational Research Fund to be distributed on a similar model to the National Health and Medical Research Council.

- 2.32 In its submission to the inquiry, Teaching Australia noted that “by comparison with many other professions, for example the health professions, there is very little investment in Australia in developing our knowledge about the nature of the work involved in successful teaching practices – the pedagogical knowledge and skill that is the basis of highly successful student learning.”²⁴ Teaching Australia intends to explore the option of establishing a National Centre for Pedagogy. Functions of the proposed centre would include research into the nature of teaching and learning and the effectiveness of particular teaching strategies.²⁵ In relation to this proposal, the committee notes that although the ARC has funded 19 Australian Research Centres of Excellence, they are nearly all in areas that might be described as ‘hard’ sciences. The only exception to this is one funded in the last round of applications in Humanities and Creative Arts at the University of Queensland.²⁶ Similarly, no application from the education discipline for funding under the ARC Research Networks

23 Prof. Marie Brennan, Australian Council of Deans of Education, *Transcript of Evidence*, 13 October 2005, p. 11.

24 Teaching Australia, *Submission No. 168*, p. 11.

25 Teaching Australia, *Submission No. 168*, p. 11.

26 Australian Research Council Annual Report 2004-05, pp. 4, 37-38.

program has received funding. The National Centre for Pedagogy proposed by Teaching Australia could fulfil a comparable role to the ARC Centres of Excellence and also perform something of a lighthouse function for the profession.