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Australian Council of Deans of Education Inc.

Submission to the Victorian Education and Training Committee

Inquiry into the Suitability of Pre-Service Teacher Training Courses

Authorised by:

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Executive Summary

Teacher education is an increasingly complex profession. Historically, a notion of teacher ‘training’ abounded in which the teacher was perceived primarily as a technician. A raft of evidence authoritatively disabuses this notion. Research clearly indicates that the teacher is the single most important factor in student learning within the classroom. Evidence also shows that a sophisticated range of skills and sensibilities are required for effective teaching. Pedagogy, and pedagogical content knowledge, are essential to maximise learning for an increasingly diverse student body. Teachers must stay abreast of rapidly changing discipline knowledge. And in the absence of support staff, the role of teachers in ensuring the wellbeing of students frequently extends well beyond its official remit. The demands on today’s teachers are unprecedented in number and complexity.

Teacher education programs play a crucial role in preparing teachers, and must be tailored to the exigencies of teaching in the twenty first century. Nevertheless, teacher education programs are, and will continue to be, only one aspect of promoting quality teaching. Any analysis of teacher education cannot exist in isolation: the working conditions and salaries of teachers, the nature of learning environments, the provision of professional learning, and the level of support and resources available are all inter-linked. Building an attractive teaching profession requires attention to each of these factors.

In responding to the issues identified under the terms of reference, the submission emphasises the following four key points:

- 1) There is an urgent need to recognise and value the complexity of teaching. Notions of ‘teacher training’ are antediluvian, and do not adequately reflect the science of education. Equally, analysis must move beyond a dichotomous approach to pedagogy and content knowledge, to a more sophisticated understanding of the knowledge required to teach in the twenty first century.
- 2) There is substantial variation among teacher education courses both statewide and beyond, and a variety of innovative teacher education models already exist. This diversity is valuable, and contributes to the vitality of the profession. It is important that schools and faculties maintain the capacity to remain relevant, connected and rigorous in a fast changing world. Nevertheless, there remain systemic impediments to innovation which need to be removed, including an emphasis on inputs rather than outcomes.
- 3) Professional practice needs to be at the heart of teacher education. This is more complex than simply increasing the practicum component of courses, and involves relating professional experience to theoretical insight. The relationship between theory and practice needs to be seen as mutually informing.
- 4) A holistic approach is required. Increased provision of professional learning is necessary to promote a culture of lifelong learning among teachers, and teacher educators; greater educational research is required, particularly into new pedagogies; salaries and conditions need to be competitive; and career paths need to be visible and

attractive. Teacher education needs to be seen as an integral part of the teaching process, but not considered in isolation.

1) *determine the range and nature of pre-service teacher training courses within Victoria and the variation among these courses in areas of contact and practicum time, and in course focus on content and pedagogy;*

Individual universities have made submissions to the inquiry, and it is from these submissions that information about the range and nature of Victorian courses is best gathered. Care must be taken not to dichotomise content and pedagogy. The need to move beyond this view was outlined in the ACDE Response to the Commonwealth Review of Teaching and Teacher Education and again in the ACDE Discussion Paper, *The Role of the ‘Teacher’: Coming of Age?* (Lovat 2003). The relationship between content and pedagogy, and the need for an appreciation of pedagogical content knowledge, is discussed in detail in section 3.

The Council welcomes attempts to map the range of offerings within the state. Within this context, the matter of how practicum is handled is of particular importance. The Council supports attempts to identify courses where the practicum is made more integral to the whole learning experience of pre-service education. Pre-service learning is best seen as education rather than training.

2) examine a range of pre-service teacher training courses across Australia and internationally, focussing on how these courses differ and how they meet the needs of teachers and education systems for the 21st century;

The committee will have received information from individual Victorian universities on this issue. In its submission to the Commonwealth Review of Teaching and Teacher Education the ACDE also highlighted two case studies of innovative practice from outside Victoria, and these case studies are considered in the appendix. Also included in the appendix is an international case study from the US. The Council welcomes this focus of the inquiry, particularly given that the contest between 'education' and 'training' is global and ongoing. Contemporary complexities demand that teacher education remain within the universities, but these complexities are often undermined by political realities such as teacher shortages, from which immediate solutions are sought. Within Australia there is evidence of highly innovative practice, but there are also structural obstacles to this practice, which affect both Victoria and other states.

2.1 Obstacles to Innovation

The submission by the Queensland Deans of Education Forum (QDEF) to the Commonwealth Review of Teaching and Teacher Education highlights a number of key impediments to innovation. The QDEF submission specifically addresses the question of developing professional standards for graduates, which in turn affects the accreditation of programs. The ACDE concurs that regulatory authorities can act as a disincentive to the development of innovative programs where: program inputs are privileged over outputs; an authoritarian approach is applied; decisions are not transparent and preliminary processes are not collegial; overly rigid rules prevent bold initiatives being taken. Both in the development of professional standards for graduates, and in the assessment of academic programs, it is important that the emphasis be placed on outputs. Rather than listing a multitude of required inputs to teacher education programs, the QDEF submission maintains that professional standards should focus on the desired learning outcomes of graduates. This emphasis in turn has 'the potential to free up preservice teacher education institutions to structure their programs in innovative ways, and recognize that just as individual learners have many learning approaches and styles, so too there are many effective pathways that can lead to becoming a teacher' (2003). The submission also highlights the need for prospective courses to be examined throughout different stages of their development, and produced through an inherently collegial process.

The ACDE endorses this view, and believes that a culture of innovation requires greater collaboration with, and flexibility of, the relevant state and territory regulatory authorities. Further obstacles to innovation highlighted by QDEF are also worth restating here, namely: the speed of institutional change processes; the dominance of taken-for-granted institutional practice; an overemphasis on curriculum content coverage; and a lack of attention to global perspectives. To these may be added the problem of limited educational research, which the Council has raised in previous submissions to the Commonwealth government. In *The Impact of Educational*

Research (2000), Tom Phelan gathered results from five distinct though related studies on education research. His report found ‘compelling evidence that Australian educational research is respected internationally and makes a difference in the worlds of schools, and policy development’ (Phelan 2000: 4). Phelan also found, however, that research ‘accounts for less than one per cent of the total personnel resources devoted to education and training in Australia. Of these resources, university-based research accounts for about 90 per cent’ (Phelan 2000: 5). Research into innovation and effective pedagogy depends on proactive government policies, and the impact of public investment on this research is both measurable and substantial.

3) determine the skills and knowledge required of teachers, and therefore of pre-service teacher training courses, in response to reflect the changing nature of education in the 21st century;

The ACDE believes that education is the key to economic prosperity, social cohesion and the promise of democracy. In the knowledge economy, effective learners will be imbued not only with a specific skills set, but with a range of attitudes and values which reflect an emphasis on teamwork, flexibility and diversity. In this context, teacher education programs will need to promote both autonomous and collaborative learning, and to prepare future teachers for learning experiences throughout and across their lives. In its comprehensive vision for Australian education, the Council argued that teaching ‘should be designed for what it is – a highly flexible and in-demand set of human attributes transferable right across the knowledge economy’ (ACDE 2001; 112).

3.1 Teaching

It is important at this point to emphasise recent advances in knowledge about the profession of teaching. The following section outlines the role of pedagogical content knowledge, and its importance to effective teaching practice. Teacher education courses are informed by these advances in knowledge, which underline the need for a holistic approach to preparing teachers.

Pedagogical content knowledge was expounded by Lee Shulman in ‘Knowledge and Teaching: Foundations of the New Reform’, where the concept was defined as ‘that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding’ (1987: 8). The term attempts to conjoin the strands of effective teaching, namely, mastery of a body of content and mastery of effective pedagogy. Effective teaching can emanate neither from sheer knowledge of a subject nor from sheer teaching craft. It dispels two of the unhelpful myths that have plagued the teaching profession’s development: first, that good teaching follows naturally from subject mastery; and, second, that a good teacher can teach anything at all. *Pedagogical content knowledge* asserts that knowing what and knowing how are inseparable in the business of effective teaching. The notion is echoed in the USA National Board of Professional Teaching Standards (1999) report. One of the five propositions of Accomplished Teaching is that “Teachers know their subjects and how to teach those subjects to students”. In the words that elaborate this proposition, it is said:

Accomplished teachers have a rich understanding of the subjects they teach and appreciate how knowledge in their subject is created, organized, linked to other disciplines and applied to real-world settings. While faithfully representing the collective wisdom of our culture and upholding the value of disciplinary knowledge, they also develop the critical and analytical capacities of their students.

Accomplished teachers command specialized knowledge of how to convey and reveal subject matter to students. They have a ‘pedagogical content

knowledge' command of a wide repertoire of teaching strategies that enable them to organize, adapt, and present the curriculum in ways that take due account of the specific contexts within which they teach and their students learn. They are aware of the preconceptions and background knowledge that students typically bring to each subject and of strategies and instructional materials that can be of assistance. They understand where difficulties are likely to arise and modify their practice accordingly. Their instructional repertoire allows them to create multiple paths to the subjects they teach, and they are adept at teaching students how to pose and solve their own problems.

The earlier social science research, especially of educational psychology and sociology of education, provided important insights about the contexts of teaching. With the notion of *pedagogical content knowledge*, as defined by ACDE and the NBPTS, however, we come to see that the scope of educational research has broadened to deal with the very nature of teaching itself. This is not just educational research but more properly termed 'teaching research', and it is to be found most sharply in what is broadly referred to as the 'new pedagogies research' of the past decade or so. With this research, the theory base of teaching has undergone arguably its most elaborate period of development with extensive longitudinal work on the effects of teachers and teaching on student achievement and success. In many ways, this research represents the synthesis of earlier psychosocial and sociocultural work, with a particularly penetrating focus on the notion of pedagogy, both in terms of principle and practice. Each has attempted to identify just what it is about the art and science of teaching that makes a difference in the intellectual and social development of students.

Newmann's (1996) work developed the concept of 'authentic pedagogy', Darling Hammond's (1997) work the notion of 'quality pedagogy' and Education Queensland's School Reform Longitudinal Study (QSRLS, 1999) the notion of 'productive pedagogies', all in their own way identifying the essential blend of knowledge and skills required for effective teaching. In each case, the focus has been on the distinctive knowledge base of teaching and, in each case, the acid test has been about demonstrated student achievement as a result of this knowledge base being implemented effectively. In the Productive Pedagogies schema, for instance, the essential conjunction of content and pedagogical mastery clearly underpins the four dimensions which guide the process, namely 'Intellectual Quality', 'Relevance', 'Supportive Classroom Environment', and 'Recognition of Difference'. Just as clearly, and as importantly, the dimensions can be seen to be built largely on the research understandings, old and new, which have been gained over 100 years of educational research. The important and distinctive contribution of this new pedagogical research, however, is in the demonstrated truth that student achievement can only be enhanced when the nature of the pedagogy required is targetted with precision and implemented with rigour, and with assessment for outcomes that is in tune with the entire process. Structural reform of learning contexts (including presumably in teacher education) achieves little or nothing if not accompanied by this 'pedagogical reform'.

In NSW, the Quality Teacher Program (2000) submission, titled *Pedagogy for the Future*, outlined contextual challenges which face schools and teachers today, identifies 'new' and 'effective' pedagogies designed to meet these challenges, and

specifies implications for teacher education. Reflecting reliance on the 50 years of educational research referred to above, including the more recent spate of work on pedagogy and its effects, the two key implications for teacher education are spelled out as: (1) the quality of student learning outcomes is directly dependent on the quality of the teacher; and (2) the essential components of effective teaching are command of subject, and knowledge of and capacity to implement effective pedagogical practices. The submission identifies as part of its new and effective pedagogies those which could only result from universities and schools working together on pedagogic issues in schools. The theme of the research and applied dimensions of the profession working more closely together, including in the business of teacher education, is implied in all of the projects which focus on the new pedagogy. The report asserts:

.. the quality of student learning outcomes is directly dependent on the quality of the teacher; and, the essential components of effective teaching are command of subject, and knowledge of and capacity to implement effective pedagogical practices.

The effect of this research is to underline the complexity of the craft of teaching. Education is itself a science, and this reality must be borne in mind when considering changes to teacher education courses, and also the entry requirements of mature age and other applicants. The ACDE is willing to provide more information on this research should the Committee desire it.

3.2 Teacher Education

Within this broader context, teacher education will in future focus more on the overall aim of reflective practice. Clearly, this does not simply mean spending more time in schools. The *Crossroads* Ministerial discussion paper emphasises that ‘we need a system that produces graduates who can think critically and have adaptable skill sets as well as technical expertise (Nelson, 2002: 14).’ However, as Alan Reid explains, the mere allocation of more time for initial teachers to be trained in schools “simply reproduces the status quo and reinforces the idea that teachers are technicians” (2001). Instead, Reid advocates a model based on inquiry into educational practice, which would involve project work and greater collaborative learning between students, teachers and academics (2001).

Carpenter et al (2003) have argued that recent research suggests that ‘the enhancement of school student’s learning is the most powerful stimulus for committed practice’. They maintain the centrality of the social practices of classrooms and the outcomes of these practices to teacher learning, and claim that ‘this knowledge demands that teacher education reforms to respond to the learning needs of schools students as its primary concern (2003). None of these findings refute the value of initial teachers taking classes in designated schools, but they do suggest a need to reconceptualise the practicum and teacher education more broadly. Professional practice must be at the heart of teacher education, and theory and practice must be seen as mutually informing. Enriching professional practice must be further facilitated by the expansion of mentoring and team teaching and the allocation of time for collegial discussion and feedback. All are vital to the goals of collaborative and flexible learning. Project orientated tasks, which both reflect and promote the importance of teamwork and collaborative scholarship, also need greater

recognition in teacher education programs. Collaborative projects also need to be seen in the context of changing school and university environments. In the knowledge economy, schools and universities themselves will be much better integrated as the exigencies of lifelong and lifewide learning are better understood (Dusseldorp Skills Forum, 1999). Not only will greater links be sought between schools and communities, universities, businesses and government, but the education institutions themselves will be reconceptualised as parts of a broader learning environment (Kirby, 2000:98). Rather than being added on to an existing scaffold, local and regional collaboration will in fact come to redefine the very nature of schools and their orientation to society.

4) examine issues related to attracting people from other professions to become qualified teachers in Victoria;

Clearly, the attractiveness of Victoria within Australia will depend primarily on salaries and conditions relative to other states and territories. However, building a state where teaching is regarded as an attractive career path requires systemic change.

4.1 Salaries and Conditions

Teachers perform a role as important as lawyers, doctors, or IT professionals, yet do not receive anywhere near the remuneration. The pivotal role of our nation's educators must be recognised, and their vocation accorded the salary levels it deserves. Quite simply, the salary gap between teachers and professionals requiring similar levels of qualification, should be reduced.

Even with the substantial improvements which are required in teacher salaries to improve the standing of the profession and to reward teachers for their level of skill and training, teaching is likely to remain less well paid than other professions. Compensation needs to be in the form of lifestyle benefits.

A number of reforms which could be implemented by the Victorian government, or in conjunction with the Commonwealth, are needed. These include rewarding the further formal study of educators through revised salary structures, and providing sabbaticals, which may include study tours, structured community-based learning, or intensive time to complete a postgraduate course. Additionally, teacher exchange programs could be developed, where teachers undertake at least two or three international exchanges (six months, twelve months each) in a career, by setting up exchange structures and supporting ancillary expenses such as travel costs. More work could also be done to second teachers into community organisations, businesses and government in order to broaden their experience base and to expand the school's networks.

4.2 Professional Learning

Teachers are lifelong learners. They, and most others concerned, want more opportunities for professional development (Ramsey 2000: 85). This desire is not surprising – professional development clearly works. Evidence of the effectiveness of professional learning in improving teaching and learning outcomes is now widespread. Enhancing the professionalism of teachers typically contributes to heightened teacher confidence and knowledge, and translates to heightened enthusiasm among students. The joint report released by the Australian Council of Deans of Education and the Australian Council of Deans of Science, *Professional Learning for Enhancing Teaching and Learning within Science, Mathematics and Technology in Australia* (forthcoming) found considerable improvement in outcomes where professional learning was instituted and sustained. Where programs have been continuous and subject to rigorous evaluation, the Report found that student outcomes, and teacher knowledge and confidence, have demonstrably improved. Qualitative evidence also suggested that most extant programs are highly valued by teachers.

Despite this evidence, scarce opportunities are provided. The Senate Report, *A Class Act*, found that despite the rhetoric of the importance of professional development, 'the reality is quite different' (1998, ch. 7). Professional development is under-resourced, underestimated and desultory in its provision (ACDE & ACDS; forthcoming). The Senate Committee discovered that the type, quality and availability of professional development in Australia varied enormously between jurisdictions, systems and schools and that many programs were ad hoc, piecemeal in nature and lacking in intellectual rigour.

Teachers need support to enhance their professionalism at different stages of their working lives. Requirements differ for early career teachers, transitional career teachers, and mature age teachers, but professional learning opportunities must be accessible to all. Beyond accessibility, professional learning needs to be linked to career paths, and clearer relationships are required between school-based activities and tertiary programs and awards. Changes in discipline and pedagogical knowledge 'require the continual renewal by teachers of their own knowledge and understanding' (Department of Education, Science and Training 2003: 38).

Building learning opportunities into career and salary structures remains a key challenge for all Australian governments. International evidence is clear on this point. It is not enough simply to provide opportunities. Those opportunities must be attractive, and incentives must be given for participation and completion.

This same argument applies to postgraduate study. Postgraduate enrolments in education have fallen, at a time when they need to be rising. Despite the need for teachers with graduate-level competencies, the evidence is that education systems as employers neither provide an adequate system of incentives (such as paid time off to do courses – part time or full time) nor encourage teachers to undertake graduate studies (see ACDE 2001; Ramsey 2000: 82).

5) Recommendations

- 5.1) Ensure that vital new knowledge and understanding about pedagogy, and the related skills of teachers, be placed at the centre of Australian school and teacher education curricula.**
- 5.2) Promote further educational research into teaching and student learning.**
- 5.3) Measure teacher education primarily by outputs rather than inputs. Ensure that preservice teacher education institutions are able to structure their programs in innovative ways.**
- 5.4) Address teacher education programs within a broader context which examines salaries, conditions, resources, and professional learning provision. Invest in ongoing professional learning to meet the long term needs of the state.**
- 5.5) Facilitate conversation among universities, schools, employment authorities and unions. This discussion would focus specifically on how best to integrate practicum into pre-service learning programs, and how schools and universities might best share responsibilities for turning out excellent teachers and maintaining their professional standards throughout their careers.**
- 5.6) Promote the vital place of teacher education programs in universities. Given what we now know about the knowledge economy and society, Education faculties have potentially a much larger role to play in preparing a cadre of knowledge workers (i.e. teachers) for many sectors from preschool to industry.**
- 5.7) Promote professional standards, particularly as a means of enabling greater flexibility and mobility within the profession.**
- 5.8) Support a national approach to recruiting overseas teachers and fast tracking professionals who want to change careers.**
- 5.9) Support a national teacher exchange program, particularly to nations of our region.**

Bibliography

- Australian Council of Deans of Education (2001), *New Learning: A Charter for Australian Education*, Canberra: ACDE
- Australian Council of Deans of Education and the Australian Council of Deans of Science, (forthcoming), *Professional Learning for Enhancing Teaching and Learning within Science, Mathematics and Technology in Australia*
- Barker, R.G. (1967), *Ecological Psychology*. CA: Stanford University Press
- Carpenter et al (2003), *Liaising Dangerously? A decade of Practice-Based Teacher Education*
- Darling-Hammond, L. (1997), *The right to learn: A blueprint for creating schools that work*. San Francisco: Jossey Bass
- Department of Education, Science and Training (2003), *Australia's Teachers: Australia's Future, Agenda for Action*, Canberra: Committee for the Review of Teaching and Teacher Education
- Duch, J. B. (1995), 'What is Problem-Based Learning?' from The Newsletter for the *Centre for Teaching Effectiveness*, University of Delaware. Available URL: <http://www.udel.edu/pbl/cte/jan95-what.html>
- Dusseldorp Skills Forum (1999), *Australia's Youth: From Risk to Opportunity*, at <http://www.dsf.org.au/> (accessed 3 Aug. 2001)
- Hewitt, J., Brett, C., Scardamalia, M., Frecker, K. & Webb, J. (1995), *Schools for thought: Transforming classrooms into learning communities*. Paper Presented at the American Educational Research Association, Annual Conference. San Francisco. Available URL: http://csile.osie.utoronto.ca/abstracts/kn_build/ (cited in Kiggins, J, 2001)
- Kirby, P. 2000, *Ministerial review of Post-Compulsory Education and Training Pathways in Victoria*, Dept of Education, Employment and Training, Victoria, August
- Kiggins, J. (2001), *From Project to Program: The Evolution of an Alternative Teacher Education Model*. Paper Presented at the AARE Conference Fremantle 2-6 December
- Kiggins, J., (1998), *Problem- Based Learning & Mentoring In Pre-Service Teacher Education: A Review of the Literature*. Unpublished monograph, Faculty of Education, University of Wollongong, NSW
- Lovat, T. 2003, The role of the 'teacher': coming of age?, ACDE occasional paper, ACDE, Canberra
- Marks, W. (2001), 'My thoughts on KBC an alternate mode of teacher training.' Paper presented at "Challenging Futures Conference", University of New England, Armidale, NSW
- National Board of Professional Teaching Standards (1999), *The five propositions of accomplished teaching*. www.nbpts.org
- Nelson, B. (2002), *Higher Education at the Crossroads*, DEST, Canberra, April

Newmann, F. & associates (1996), *Authentic achievement: Restructuring schools for intellectual quality*, San Francisco: Jossey Bass

NSW (2000), *Pedagogy for the future: Three year strategic submission NSW*. Sydney: NSWDET Quality Teacher Project

Phelan, T. (2000), *The Impact of Educational Research*, DETYA, Canberra

Queensland Deans of Education Forum (QDEF) (2003), submission to the Commonwealth Review of Teaching and Teacher Education, available at www.dest.gov.au

Queensland School Reform Longitudinal Study (QSRLS) (1999), *Report of the Queensland school reform longitudinal study*. Brisbane: Education Queensland

Ramsey, G. (2000), *Quality matters: Revitalizing teaching: Critical times, critical choices*. Sydney: Ministry of Education and Training

Reid, A. (2001), 'Initial Teacher Training', paper presented to DETYA Conference, Improvement or Transformation?, July

Senate Report (1998), *A class act: Inquiry into the status of the teaching profession*. Canberra: Senate Employment, Education and Training References Committee

Shulman, L. (1987), 'Knowledge and Teaching: Foundations of the New Reform', *Harvard Educational Review*, vol. 57, No. 1, February

Appendix: Three Case Studies of Innovative Practice

1) Re-training (University of Newcastle)

The program to re-train displaced industry workers as schoolteachers was established in 1997 by the then Faculty of Education at The University of Newcastle in consultation with BHP and the Department of Education and Training. The program fitted the category of employer funded undergraduate, and saw BHP contributing a fee to cover student tuition for the duration of the re-training program. The program made strong use of the provision for recognition of previous learning (RPL), wherein previously obtained trade qualifications, extensive in-house training (provided in most cases by BHP), work history and experience were valued and recognized as a basis for entry. This portfolio of education, skills and training also provided the basis on which to build the re-training program. In areas such as the understanding of metals and workshop practices, RPL enabled the University to reduce the number of discipline subjects to be studied and thereby reduce substantially the normal period of study required for a teaching award. For degree qualified employees, the program was offered as a two-year part time study program while still employed at BHP. The award on graduation was a regular Diploma in Education (normally one year full-time). For trade and Associate Diploma qualified staff, the program was offered as 2 years of part time study while still employed at BHP followed by 1 year of full time study after closure. The award on graduation was a Bachelor of Education (normally four years full-time).

Another innovation not normally associated with retraining programs of this kind was achieved through the acceptance of prior learning by the future employer prior to the commencement of training or employment. This innovation allowed the future employer to offer guaranteed positions upon successful completion of the university study. Guaranteed positions were offered to those BHP employees who were willing to commit to teach in at least one of four hard- to- staff teaching areas in NSW. BHP staff who committed to teaching at the cessation of their employment also received some financial support from the DET as their future employer in the final full-time year of study.

From the outset, it was clear that some BHP staff were going to take longer than others to consider their options at closure. For this reason, it was decided that any program offered would need to provide *flexible entry points*. The University has also been able to extend the main BHP re-training program, with the agreement of the DET, to include unemployed trade persons more generally in the Newcastle Region. The Faculty offered a mid-1998 entry program for 22 unemployed or soon-to-be-retrenched individuals. These students undertook a full-time program similar to the main BHP program but were liable for their own HECS fees.

A further innovation was demonstrated in the *site-based* nature of the course. Teaching occurred in two sites in addition to teaching at the University itself. Teaching at the first site, the BHP plant, had the effect of reducing the time away from the plant and thereby the amount of time to be made up by each employee. The second location for teaching was the school (or TAFE) context wherever possible.

This allowed for closer connection between the content being taught and the context where it was to be applied. It also had the effect of increasing the rate of professionalization into a new career as BHP staff were working with practising teachers in the future professional context. In addition, BHP staff were placed in working groups for more formal study subjects. This had the effect of providing a psychological and consultative support network across the plant. This appeared to have been very successful with many employees, meeting and making contact with others in their group outside of formal contact hours. Many employees entering this re-training program had not been involved in extended periods of formal study for many years, let alone tertiary study. A program which focused on academic study skills was offered at BHP in the weeks prior to the commencement of the semester in order to assist the transition back into study.

The *relationship* between the three institutions involved in the re-training project grew as the program developed. On all occasions, when discussions were held with BHP employees, representatives of all three institutions were present to provide information. The relationship between the three parties was formalized with a Memorandum of Understanding between The University of Newcastle and BHP Rod Bar and Wire, and between The University and the NSW Department of Education and Training. The University, as the provider, became the hub of the activity with the current employer, on the one hand, and the future employer, on the other hand. Another form of assistance and collaboration between BHP and the University occurred when the University arranged an on-site careers/course advisor from the University's Careers and Student Employment section to work one or two days a week at BHP to assist the many staff who, despite the strong strategic support, consultation and assessment provided by BHP, were still unsure about potential career-change scenarios.

The program underwent *evaluation* employing both qualitative and quantitative measures. Quantitative indicators included: comparison of retention rates; proportion of higher level results compared with other students; and, success rates in field experience. Qualitative indicators centred mainly on the students' reflective journals and consultation/support meetings. Comparison of retention rates indicated a 98% retention against a general figure across programs of 72%. In Semester 1 of the first year, the distribution of results showed that, while they constituted only 7% of the total cohort in the first core Education subject, the re-trainees achieved 18% of the High Distinctions and 10% of the Distinctions. In Semester 2, with a similar constitution of the total cohort in the second core Education subject, they achieved 24% of the High Distinctions and 7.5% of the Distinctions. All students who attended a field experience placement during 1998 received a grade of 'Ungraded Pass'. In the Practicum report's three major competencies (*Planning & Managing the Teaching & Learning Process; Communicating Interacting and Working with students and Others; Reflecting Evaluating & Planning for Continuous Improvement*) and their 34 subcompetencies, only 3 students out of 43 were reported as having competencies rated as 'beginning', with all others achieving much higher ratings than similar students on their first field experience. Comments made by cooperating teachers included: 'willingness to become involved in a new career of teaching'; 'with his industry experience and management skills will make a great contribution'; 'would be an excellent teacher if employed immediately'; 'with his breadth of experience in industry he has the ability to think and act with independence'.

Throughout their first year, re-trainees were required to maintain a learning journal, in order to facilitate reflection on their own learning experiences and the relationship between university studies and their observations and experiences in the school. These journals formed powerful learning tools, especially in relation to the re-trainees' views about the teaching context and their observations and experiences in the schools. Comments in the journals included: 'being involved in lessons and working alongside teachers made me more aware of the need for effective communication'; 'visiting the school and being involved in the classroom has helped increase my university learning of what it is to be an effective teacher'; 'I felt confident I could communicate with students because I had a well planned lesson and I understood the process of learning from my studies in EDTE111'; 'by reflecting back at University on what I had seen at the school I was better able to understand the observation and the learning at the university'.

The project went on to win *two national* awards, including a 1998 inaugural award of the Business Higher Education Round Table (BHERT). This was for an outstanding achievement in collaboration between universities and industry in the area of education and training. The script which accompanied the award read in part: *This is an exemplary project which deals creatively with some of the major problems caused by industrial re-structuring*. The same program won a 1999 National Teaching Award in the institutional category.

The so-called 'BHP Re-training Program' illustrates well the potential for traditional structures of professional development, re-training and new career employment to be adjusted to serve a new and identified need in society. The most pleasing aspect of the project was in the demonstration that innovation could be had within the context of the most quality assured teacher training available in the country, namely a regular University-based teacher education set of awards. The project is more fully described in Lovat (2003).

2) Knowledge Building Communities (University of Wollongong)

In 1997, after a searching series of discussions on the topic “*Alternate Modes of Program Delivery for The Pre-Service Primary Course*”, the Faculty of Education supported a proposal to design a research project which would “*investigate, as a pilot, an alternative approach to initial teacher education through:*

- implementation and evaluation of an inquiry and problem-solving approach such as that used in medicine and the health sciences;
- greater integration of the practical field-based component of the teacher education program with the theoretical.

This project was informed by a wide ranging review of relevant literature (Kiggins, 1997). As a consequence of this review the Faculty concluded that it needed to begin a process of challenging, and subsequently changing, the traditional paradigm of pre-service teacher education to which it had been wedded since the inception of pre-service teacher education at Wollongong University. The Faculty designed a project which would produce at least the following changes:

- A shift in the mode of program delivery from the traditional ‘campus-based-lecture-tutorial’ mode to a ‘*problem based-learning-within-a-school-site*’ mode;
- A shift from the traditional *clinical supervision* model of practice teaching to a *problem-based- action-research-mentoring* model that brought the relationship between the specialised knowledge in Education courses and the nature and culture of schools and how they ‘do business’, closer together;
- A shift in the traditional roles and responsibilities of the major stake holding groups in teacher development, namely, the professional employing authorities, (e.g. NSW DET, local non-government school systems), the university, local schools, and the Teacher’s Unions (NSWTF), so that a new form of ‘School-based Learning’ might be developed.

The Faculty argued that if these three processes were set in motion, an important by-product would be the opportunity to identify and explore the logistical, cultural, and political barriers to effecting change in both the teaching/learning culture of undergraduate teacher education (in the Wollongong context), and the traditional mindset and culture associated with practice-teaching/ the practicum (in the Wollongong context.) By the beginning of the 1999 academic year a pilot program had been designed, and a pilot cohort group invited to test the KBC-Mentoring model.

What Is A Knowledge-Building Community?

Kiggins (2001) defines a Knowledge Building Community as ‘a “community” of individuals who are dedicated to sharing and advancing the knowledge of the collective.’ According to Hewitt et al (1995), what is defining about a Knowledge Building Community is ‘a commitment among its members to invest its resources in the collective pursuit of understanding’. While the concept of ‘learning communities’ has been around since Dewey’s time, generally it has been restricted predominantly to

school settings. The Faculty of Education at Wollongong decided to see whether these principles could be applied at the pre-service teacher ed. level.

The Knowledge Building Community is a teaching model specifically designed to deal with the issue of contextualising the delivery of instruction. One of its important tenets is that instruction should be linked as closely as possible to the contexts and settings to which it applies in the real world. Wollongong's KBC-Mentoring program is based on the creation of learning environments that *support* the continuous social construction of knowledge *through* the constant construction, de-construction, and reconstruction and sharing of meanings, *so that* the community's knowledge needs are advanced and maintained.

In the University of Wollongong's KBC these principles were applied through the creation of a setting that provided opportunities to engage in three modes of learning: Community learning; School-based learning; and Problem-based learning.

Community Learning constitutes a major shift from traditional teacher education models. It necessitates the development of a "*community of learners*". In Wollongong's case this community was made up of three distinct groups: pre-service teacher-education students; school-based teachers; and faculty lecturers who acted as facilitators on campus.

It was the expectation that this community would establish a sense of trust and caring for other community members as they studied and learned collaboratively.

School-based learning (SBL) is connected to the strong conviction that schools are more than buildings and people. Rather they are ecological settings in which individual cultures have evolved in response to the needs and purposes of the individuals who regularly enter them (Barker, 1967). This component of the KBC structure aimed to develop a more than rudimentary understanding of school-based culture. It also aimed to heighten awareness and familiarity of how schools "do business", to reduce the "*reality shock*" that beginning teachers' experience when they begin their careers, and finally, to increase preservice teachers' understandings of teachers' "real" roles in both classrooms and schools.

Problem-based learning (PBL) is designed to encourage and motivate students to '*learn to learn*' (Duch, 1995). Furthermore this theory argues that PBL challenges students to "*take charge of their education*" (Duch, 1995).

The motivation to become efficient Problem-Based Learners was created by:

- abolishing the traditional lecture, tutorial, exam and the power relationships which typically accompany them;
- changing the lecturer's role from "*expert-who-transmits-facts-to-novices*" to that of "*co-learner*", i.e. one who actively facilitates AND participates in, the learning and knowledge-building of the community.

The Evolution of Wollongong's KBC Project. 1999-2002

UOW's program has been evolving for almost 4 years now. Although some of the original organizational and procedural ideals which were put in place 1999 have had

to be changed, the underlying constructivist rationale and philosophy has remained firmly in place.

The current, 2002 KBC model is best described as "*negotiated-evaluation- of-a-non-negotiable-curriculum-based-on-a-constructivist-model of-learning-and-knowledge-building*".

This over-nominalised phrase captures the essence of UOW's KBC program in 2002. While the program is still delivered along the original guidelines of the KBC ideals (i.e. CL, SBL, and PBL), a significant addition has been the addition of what we call, "*the four pillars of professional wisdom*" which now frame and guide the KBC learning process.

Since 2001 KBC model the students have been given the responsibility of negotiating their assessment tasks. These assessment tasks must be based on collaborative analysis of the non-negotiable curriculum i.e. the subject outcomes which mainstream students are expected to acquire. The students then undertake negotiations with the teaching staffs of the school where they are Teacher-Associates to ensure that the tasks they have devised are appropriate and achievable in their particular SBL setting.

These four 'pillars' of UOW's KBC are: taking responsibility for own learning; learning through professional collaboration; identifying and resolving professional problems; becoming a reflective practitioner.

When the expectation that all members of the KBC had to acquire skill in using, and demonstrate conceptual understanding of these four 'pillars' is made explicit, it sets in train a range of complex interactions within any particular knowledge-building community. These interactions in turn serve to drive and guide the community. One important thing these pillars provides is a *set of structures, processes, and a form of discourse*, for constructing and completing the assessment tasks.

Some Results Emerging From The Program's On-going Evaluation

UOW's KBC program has been operating for four years now. The general consensus from all of the stakeholders who have been involved from the very beginning, (students, lecturing staff and schools) is that the program has both tangible and intangible benefits that make it preferable to the traditional mainstream mode of delivery. The tangible benefits include:

- Students who develop the skills, knowledge, and understandings of effective teaching to a much higher degree, in a much shorter time;
- Students who are perceived by experienced teachers to be more committed, enthusiastic, confident professionals, than mainstream students in the same cohort;
- Students who are perceived by other mainstream lecturers to be more skilled at identifying and resolving professional problem, who are more effective and productive team members, who are more autonomous learners and more reflective than most mainstream peers;
- A much stronger partnership between the University, the local schools, the major employing authority, and the teachers' union.

The less tangible but equally important benefits include:

A subtle but significant change of the culture of the practicum experience for the schools involved. This shift is essentially from a “Clinical-supervision-one-classroom-teacher-to-one-student” model to a “Mentoring-whole-school-participates” model. One unexpected spin-off of this change is the perception of teachers at the KBC schools of their own professional growth as they responded to the many probing questions about the rationale for the many school and classroom practices which KBC students continually asked as they sought data from their research tasks. In a recent paper, Marks (2001), reporting on this aspect of his school’s involvement in UOW’s KBC program writes:

Research strongly supports the conclusion that reflection does enhance teaching and learning. In our school experience since 1999, reflective practices amongst the staff have developed:

- 1) as a result of taking on mentoring roles for the KBC program; and*
- 2) as a result of collegial management and supervisory styles becoming the philosophical base of our school.*

In essence the KBC program operated as the vehicle for the implementation of reflection through the mentoring role. . . (Marks 2001, p9)

3) Mentoring and Induction, USA

Teaching, and teacher education, is increasingly being viewed as a collaborative task, and one in which professional support and learning is essential. In the United States, this view is partly reflected in the proliferation of mentoring and induction programs. By as early as 1987, research suggested that 47 US states had a mentoring/induction program at least in the planning process (Mentor Center 2003). However, programs and commitment to mentoring have varied markedly across the states, and the efficacy of mentoring programs is only now being fully realized.

The Beginning Educator Support and Training (BEST) program is a Connecticut initiative focused on a comprehensive three-year teacher induction program. BEST recognizes that contemporary educators need to be facilitators, motivators and co-learners, and require a broad range of cognitive and social skills. The curriculum, structure and assessment of the program is focused on these skills and sensibilities. Of particular note is the use of portfolio assessment. Connecticut is a pioneer of portfolio learning, which enables a broader range of skills to be demonstrated than traditional measures of alphabetical literacy. In portfolio assessment, teachers are required to describe their teaching context, provide lesson logs, reflect on their planning, provide videotapes of their classroom practice and submit samples of student work and assessment. This portfolio approach enables a wide range of skills to be assessed, including preparation techniques, classroom practice, effective pedagogy, student assessment techniques, curriculum presentation, quality and nature of student work, and capacity to shape classroom experiences (Berry et al 2002). BEST has also attempted to link successful completion of the portfolio to teacher certification. North Carolina and Kentucky have adopted similar portfolio approaches which enable novice teachers to demonstrate cumulative learning over a period of time eg a year (Southeast center for teaching quality 2003).

Portfolio learning and assessment is assisted by an emphasis on mentoring and induction. Mentoring is now relatively common within teacher education settings, but the 'one teacher one classroom' model remains prevalent. Mentors within the BEST program, who must themselves receive mentoring training, are in regular contact with novice teachers and assist them through observation and analysis of teaching and learning performance in classroom settings. Similar projects exist in Santa Cruz, where a highly successful New Teacher Project (SCNTP) ensures that teachers within their first two years of practice have sustained mentoring support (governors commission 2001). Since 1988, veteran teachers within the Santa Cruz system have been released from full-time work for up to three years to mentor small groups of first and second year students (Gless and Moir 2001). As Gless and Moir highlight, this exchange offers reciprocal benefits, in particular through the reinvigoration of seasoned teachers as they become teachers of teachers (2001). A public commitment of resources to enable time-release, however, is important if mentoring programs are to fulfill their potential.

For many teachers where such resources are provided, mentoring becomes an attractive career path option, and similar professional development experiences may be extended to mentors. In Santa Cruz, prospective mentors attend 'Foundations in mentoring' training days and subsequent coaching. Junior mentors work closely with more experienced mentors, and mentors have strong collegial professional links.

Staff development meetings, sharing of practice and curriculum knowledge, and observation of video tapes of classroom practice are all used to bind and enhance the work of designated mentors. Between mentors and novices, cooperation is assisted by keeping a Collaborative Assessment Log, in which progress is updated and problems identified by both novice and mentor working together. Gless and Moir contend that the profession 'needs leadership roles for teachers that capitalize upon the sophisticated expertise involved in being an outstanding classroom teacher' (2001). Beyond this, SCNTP highlights how hierarchical structures within the teaching profession are being dissolved into complex, collaborative and multiple teaching relationships. Even for teachers, learning is a lifelong process.

More controversially, some interns in states such as Kansas and California are given full-time positions teaching within schools. The interns are usually based in the same living quarters to assist collegiality, are paired with experienced teachers who act as mentors on a day to day basis, and are also overseen each week by visiting teacher educators (Manzo 2002). These programs are defended as providing job-embedded support, and as a means of addressing teacher shortages and attrition rates. Further programs in California, such as the Paraprofessional Teacher Training Program (PTTP), aim to ensure easier transitions for those in careers other than teaching to the teaching profession. Such innovations are important in providing greater flexibility within the profession, and in making it more accessible and attractive as a career.

The cost of teacher attrition rates remains a substantial and underestimated global problem in education. Recent studies examining mentoring funding in California have concluded that mentoring programs, even where \$5,000 is spent per mentor, remain cost-effective. The benefits of successful mentoring programs in improving teacher retention, and thereby reducing recruitment and retraining costs, are considerable, and outweigh the more visible costs of implementation and mentoring support (California Commission on Teacher Credentialing 1992).

Despite numerous different methods and programs, a clear trend is observable. Across the United States, mentoring is increasing in the recognition that teaching must be viewed as a profession with inbuilt career paths and professional learning experiences, that teaching and learning are shared, collegial and lifelong experiences, and that collaborative learning is critical in the knowledge economy.