

1-1-2005

Inducting pre-service teachers into reflective inquiry and research methods: Contested curriculum and pedagogical spaces

Ted Booth
University of Wollongong, ted_booth@uow.edu.au

Follow this and additional works at: <https://ro.uow.edu.au/edupapers>



Part of the [Education Commons](#)

Recommended Citation

Booth, Ted: Inducting pre-service teachers into reflective inquiry and research methods: Contested curriculum and pedagogical spaces 2005, 27-39.
<https://ro.uow.edu.au/edupapers/820>

Inducting pre-service teachers into reflective inquiry and research methods: Contested curriculum and pedagogical spaces

Ted Booth¹

Abstract

The location of research methods within the pre-service teacher education curriculum has been a contentious debate within the writer's Faculty of Education for many years. Concurrently the scope and sequence of the major concepts and skills to be taught in inquiry and research methods and the related pedagogy has also been contentious. This paper attempts to chart some of the dimensions and contentions within these spaces. A self-study methodology is utilised in conjunction with the views of collegial staff and case study data from a cohort of students who have recently completed the subject. The purpose of this paper is to support a professional critique of teaching inquiry and research methods and the development of a statement of enhanced best practice.

INTRODUCTION

As a person, a teacher and teacher educator the author has long cherished an epistemology and pedagogy based on experience, reflection and self-directed action. Loughran and Berry (2005) suggest that exposing one's practice and genuinely seeking critique is a challenge to the traditional expert status of the teacher educator. Widden et al (1998) conclude their critical analysis of the research on learning to teach that there is little research on teacher educators' contribution to the learning-to-teach ecosystem. The purpose of this paper is to critically reflect on a major component of the authors work for nearly two decades as a teacher of learning about inquiry and research in pre-service teacher education curriculum and to link this critique to a discussion about changes in the structure and implementation of new four year Bachelor of Primary Education.

The data and analysis presented will be interwoven around two central tensions; what knowledge pre-service teachers need to know and how these dispositions, knowledge and skills are best learnt. The tensions have both a macro dimension within the wider pre-service primary curriculum and a micro perspective in the way an inquiry and research subject can be structured and taught.

The paper briefly reviews the literature on changes in the focus on inquiry within pre-service teacher education and the strategies that have been implemented toward an enhanced role conception of the teacher. The context of the case study faculty program is initially described and the dimensions of the major tensions are developed with reference to the writer's own position, other staff positions and student voices from two sources. There has emerged a clear disjunction between the students' initial perceptions and value of the subject against staff assumptions about how important the content and processes are for the students professional development. In conclusion the paper charts a number of considerations for the enhancement of teaching and learning about inquiry and research in pre-service teacher education.

¹ University of Wollongong

Literature

Wideen, Mayer-Smith and Moon's (1998) critical analysis of the research on learning to teach paints a pessimistic picture of traditional pre-service programs capacity to influence the beliefs of beginning teachers. There remains an ongoing tension between the hopes and expectations of teacher educators and the expectations and lived experiences of their novice teachers. The interest however among teacher educators to develop programs and strategies that facilitate the preparation of teachers who are reflective about their work has a long history. Zeichner (1987) reviews six specific strategies that date from Dewey's (1904) notion of 'students of teaching', through 'teacher innovators' (Joyce, 1972), 'teachers as researchers' (Stenhouse, 1975) and his own work with Liston (1987) on 'reflective teachers'. In this paper he draws on the critique of Tom (1985) whose earlier analysis emphasises the differences among the various conceptualisations of inquiry-orientated teacher education. While all approaches acknowledge the need for some form of 'reflectiveness', Tom argues that the 'arenas of problematic' vary from quite narrow technical skill development to more comprehensive approaches that seek to challenge the ethical and political principles that underpin teaching and learning contexts.

Gitlin et al (1999) continues the dialogue that acknowledges that teacher educators are still championing inquiry oriented approaches that variously induct pre-service teachers to be critical consumers of research, to be able to undertake their own action research or critical inquiry and generally develop a reflective approach to decision making. Their research explores how pre-service teachers' thinking about research might inform best practice in an 'inquiry' based teacher education. Gitlin et al acknowledge the teacher education programs have expanded notions of research "beyond its traditional fact-finding mission, thereby enabling pre-service teachers to become *critical consumers of research* and/or engage in *practitioner initiated inquiry*"(p.754). This view was shared by Tom (1985), Lucas (1988), Friesen (1994) and more recently by Gore and Zeichner (1995) who also emphasise the importance of the 'pedagogical and political orientation' and contexts of the students' program.

Gitlin's study had a particular focus on the impact of two inquiry-orientated teacher education pre-service education programs on teachers' thinking about research. After completing their pre-service programs the novice teachers still valued the experience of teachers who held similar views of teaching rather than research findings. Other sources such as trade books, practical journals and teacher educators were only mentioned when they provided "specific teaching strategies rather than research findings" (p.763). The students' "rejected the supposed superiority or objectivity of research, instead prized first-hand experience and their intuitive feelings" (p.764). It was clear from their study that teachers have a sense that "research is not superior to other forms of knowing, at least in terms of its ability to provide objective accounts" (p.764) to improving student involvement, happiness and their engagement in learning. Those students who had placements in schools or classrooms where there was a reported culture of inquiry or had less pressure for day to day survival indicated there was a place for teacher action inquiry in making decisions about teaching and learning. Gitlin's team make a range of suggestions toward pre-service students knowledge production to mitigate the 'wash-out' of what is being developed in the university class in the 'survival culture' of the novice teacher's classroom.

Schultz and Mandzuk (2005) from a Canadian context have identified the expanded conception of the teacher as "knower, thinker, leader and change agent" and the need for teacher preparation programs to implement inquiry based approaches as a way of preparing teachers for these roles. Such an approach they argue draws on the

recent work of Cochran-Smith and Lytle (1999); Loughran (1996), and Zeichner (1996) and others. Their study tracks 30 novice teachers from three program cohorts into their initial years of teaching. While inquiry had been adopted as one of the guiding principles of their programs and practicum, it was not a uniform conception with tensions and contradictions in practice and what inquiry meant. Students valued inquiry when it informed their practical concerns about teaching strategies and student behaviour, a more limited range of knowing than the teacher educators had theorised.

All three conceptual frameworks of inquiry developed by Cochran-Smith and Lytle (1999) were identified in the different pedagogical approaches used by the various faculty members. The frameworks were identified as:

- social inquiry where knowledge is collaboratively constructed by all stakeholders;
- ways of knowing in communities where inquiry is both a political and social stance,
- practical inquiry which generates or enhances practical knowledge. (Cochran-Smith and Lytle in Schultz & Mandzuk p.320)

Schultz and Mandzuk report that all three groups of teacher candidates were concerned that what they were learning in their university classes would not be well received in schools. It was unanimous during their program that they would be challenging the status quo and some were already meeting resistance from parents, other teachers and administrators on practicum placements about their newly developing conception of the teachers' role. These concerns were not as fully realised by the group as new teachers than was initially anticipated. The challenge was more the overwhelming and complex demands on them in their first year of teaching.

Strategies to enhance reflection and inquiry

Strategies to enhance the development of professional knowledge and reflection through action research were more effective when facilitators paid attention to the range of knowledge domains Ponte et al (2004). Wideen et al (1998) and Gitlin et al (1999) found success when programs built upon and extended pre-service teachers' thinking about research and inquiry rather than imposing a view of knowledge production and decision making. Johnson (2004) argues the place of visual-verbal narrative inquiry to explore students' 'insider' views and an initiation into critical inquiry. Craig (1999) has developed the ideas of Clandinin and Connelly in a process of writing personal and institutional narratives to explore beginning teachers practices and professional knowledge. Braun & Crumpler (2004) explore the effectiveness of autobiographical writing in the form of a *social memoir* to explore significant experiences that have shaped their identities and ways of knowing. All the strategies briefly mentioned reflected the integrity of a constructivist pedagogy to learning reflective and inquiry skills and knowledge.

Models of shared support and mentoring are reported by Cochran-Smith & Lytle (1999), Zeichner (1999), Rice (2002), Long (2004) and Cambourne et al(2003) which suggest introducing pre-service teachers to the bicultural world of theory and practice through close links with local schools, administrative support for shared school/university commitment to teacher preparation and induction. Wideen et al (1998) and Schultz and Mandzuk's challenge is for teacher educators to turn the lens of critical reflection on their own view of research and pedagogy to ensure the disjunction felt by beginning teachers as they move from the university classroom to the practical realities of their demanding work does not dissuade their aspirations to be risk takers and reflective practitioners in their schools.

The reality of teaching a core inquiry and research methods subject is that many pre-service students continue to complain that the subject is “too demanding” and “not relevant” to their preparation to teach “Four Yellow” or “Year 10 PDHPE”! The student data presented below reflects these sentiments. In a similar fashion Bryan (1997) reflected how under-graduate journalism and communication students react to their research methods course in the terms of “Research is Math” or “There is no career connection to learning about research”. Writing a year later to the same professional audience Poindexter (1998) rejects the knowledge-based approach alone as sufficient to capture the interests of today’s students. She proposes a collaborative inquiry based pedagogy for teaching research methods that includes a cooperative learning task, a realistic goal-orientated experience that simulates the full research process, is self-managed, has expert consultation and includes components of confidential peer evaluation.

A methodological position

Loughran and Berry (2005) argue the obligation of teacher educators be explicit and sensitive to the “ongoing tensions associated with balancing student teachers’ perceived needs and concerns and their teacher educators’ beliefs about what they need to know and be able to do” (p194). The self-study methodology employed in this paper will attempt to recognise the ambiguity of institution teaching and the tensions between cost effective strategies of delivering propositional knowledge that are usually seen as valuable by academe and creating opportunities for pre-service students to reflect and be self-directed in meaningful ways. This professional critique of my own curriculum perspectives and pedagogy will highlight the problematic nature of teaching about teaching and focus on the spaces between my curriculum intent and unintended student outcomes.

Design

My personal and collegial voices are reported from reflection and limited formal documentation. The student voices reported in this paper were gathered in two ways:

(i) At the end of the semester the students were asked to write a 300 to 400 word individual reflection that responded to three questions: “What have you learnt from the inquiry process? “What was unexpected?” and “In what ways could you use the inquiry process as a beginning teacher to improve personal practice?” The responses were an assessed task [10 per cent] and were submitted individually with their jointly written final research report. Copies of 94 of the 240 student reflection statements across the nine tutorial groups were anonymously and randomly gathered and thematically coded.

(ii) The second data source was a one page, 23 question subject evaluation survey [22 Likert items and an open-ended ‘suggestions’ question] which was completed by 146 students at the end of a scheduled class in the third week of the following semester. Questions were constructed to address issues for subject improvement in 2006 and to explore a number of themes that were identified in the student reflections on their learning.

The Faculty context

The Faculty² has three pre-service programs in primary, early childhood and secondary PDHPE, a Dip. Ed. Program [primary and secondary] with over 200 students as well as extensive post-graduate course work and research program. The role and location of an inquiry/research methods subject within the primary pre-service teacher education program of the Faculty has been contentious for well over a decade. The fourth year upgrading Bachelor of Education program from the mid 1980's included a school based inquiry based project that spanned the two-semester program and carried a 25 per cent course loading. The innovation emerged from ideas I had proposed and developed to involve ten Faculty staff each working with six student collaboratively with a teacher or small group of teachers on a grade. Some of characteristics of the inquiry based KBC program³ that subsequently developed in the Faculty emerged from this program. The inquiry option was dropped from the 4th year program by the then Dean in the early nineties in favour of more Science and Mathematics 'content'. The rationale was based on the need to address the poor knowledge base of many pre-service primary teachers. The need had been identified in several national teacher education reviews.

A needs assessment of the inquiry skills and knowledge by Booth, Hall and Vialle (2004) was undertaken in the Faculty in 1993. A Faculty working party recommended a range of strategies including a compulsory second year subject in the initial three year Bachelor of Teaching curriculum and that research and inquiry skills be systematically consolidated in other subjects in the program. The rationale was based on the need for a more professional and empowered teacher who could be a reflective inquirer of their own practice as well as undertake a professional dialogue that was based on their capacity to be a critical reader and a producer of research (Neubert and Binko, 1986).

As a consequence of these activities, a core research methods subject was developed and is now jointly taught in the fifth semester of the three-year Bachelor of Teaching and the four-year Bachelor Personal Development, Health and Physical Education programs.

Inquiry and research methods subject

While aspects of the subject have changed over the years, the teaching approach follows the standard large class 'transmission' model in the Faculty of two mass lectures and a small group [22-24] each week. The larger lecture class has remained unchanged as it is considered very cost effective of staff load. The scope and sequence and the content covered in lectures more or less parallels the major sections and themes of the text book.⁴

An online quiz toward the end of the semester was used to assess individual student knowledge of the major concepts from the text and the lecture program. The remainder of the weighting of assessment [80 per cent] and tutorial time was devoted to scaffolding the development, implementation and reporting of the student's collaborative research project. A draft topic was due in week three, a literature review, draft design and an ethics application were required in week six. The projects are undertaken by teams of two or three students on student choice topics that have been based around the broad theme of 'learning places'.

Until this year the team has generally precluded students undertaking school-based inquiry projects because of the protracted ethics application process related to any inquiry based on children's data within the university and the heavy demands during this semester on our local schools for practicum placements by other student cohorts. In the last semester school based projects were available where an inquiry

was linked with a school-based activity related to one of nine concurrent KLA elective subjects in student programs. In these settings the elective lecturer had negotiated access and inquiry areas for their much smaller student group with a particular school. The final jointly assessed reporting expectations were three fold; a poster as part of a display to the university community, a tutorial seminar presentation and a formal written report.

Students undertaking and staff supervising the fourth year honours option in both degrees were appreciative of the curriculum change and the research orientation the inquiry subject provided. Anecdotally these students, who usually comprise less than 15 per cent of their respective degree cohorts, report that they do not feel well prepared for their independent research 'journeys' as the staff had presumed [Table 3, Q21].

Student Voices

Although the end of semester student reflections were insightful, the data must be interpreted through the lens that it was an 'individual assessment task'. The Tutor mostly gets what the students expect they want! Over 30 categories were identified in the data to the question 'What have you learnt about the inquiry process?' The ranked categories for all programs are summarised in Table 1.

Table 1 What has been learnt about the inquiry process?

Rank	Responses
1	The inquiry process is; demanding, long, exhaustive, complex and requires attention to detail to be credible and reliable.
2	The process requires good time management & planning as time constraints can have a significant impact on successful completion.
3	Ethical, legal and having consideration for the participants were critical.
4	The literature review establishes a good platform for the research and provides information on how to conduct an inquiry.
5	Knowing the problem you want to unravel and the importance and difficulty in narrowing the research question or formulating a good research hypothesis.
6	Deciding on the research method or technique and the practical issues of 'how to collect' the data needed.
7	How to improve your design with feedback and discussion - there's no 'perfect' design!
8	Being passionate and committed about the topic to maintain motivation.
9	Managing the leadership and group processes with competing pressures of lifestyle, other assessments, travel, work, differences of opinion and communication styles.

"Research Methods, what a shocker!" The subject has a 'student tradition' of being 'tough' and this was clearly identified in the first two reflections which were identified by over half of the students sampled. Given all who completed the assessment tasks passed the subject, with over 60 per cent scoring a credit or better,

effective time management skills were clearly drawn upon by the group. However in the subject evaluation [Table 3 – Q.20] this outcome must have come at a ‘cost’ as a majority felt the ‘amount of work required in the subject was too high’ [Likert score of 3.91 – 4 being ‘agree’] but a minority had a strong counter view [SD. 1.23].

The unexpected outcomes were in part parallel to the overall reflections. Handling the ethical considerations of their inquiry was somewhat of a shock to some. Interesting results identified in their inquiries was the second ranked ‘unexpected’. The unrealistic workload demands ranked third and linked to the time constraints that some felt because their project was school based and school holidays occurred in the middle of the university semester. A number were not convinced that there was a problem in this area as some said their peers “set unrealistic goals” for themselves! While some teams were surprised at the willingness of participants to respond to interviews and focus groups, others who opted for a on-campus sample – mostly their peers, were frustrated at getting enough participants to complete “another survey”.

In what ways could the inquiry process improve the personal practice of the beginning teachers? Or what did the students think they should have learnt? On ‘face value’ the outcomes are encouraging in Table 2.

Table 2 Impact of inquiry process on beginning teacher personal practice

Rank	<i>Responses</i>
1	Reflecting and evaluating my instructional methods, materials and/or teaching style
2	Constructing assessment instruments and making judgements about student learning to better cater for individual differences and the diversity of learning styles
3	Evaluating student enjoyment, motivation and attitudes toward lessons and units of work
4	Making improvements [often through action research] to the teaching and learning environment, increasing the quality of education and contributing to best practice
5	Capacity to inquire and reflect about student behaviour, classroom management and student motivation
6	Capacity to undertake program and curriculum evaluations
7	Library research skills

More than half indicated they could apply the skills to reflect and evaluate their instructional methods, materials and/or teaching style and a third reported the learning would assist in constructing assessment instruments and making judgements about student learning to better cater for individual differences and the diversity of learning styles in their classes. The other open-end reflections identified in Table 2 clearly resonated with the intentions of the subject for beginning teachers as the team had planned.

When members of the same class were asked if the group project supported their learning about inquiry there was fair agreement [mean 3.45, Table 3]. In the last structured question of the evaluation survey the students were asked [Q22] whether they felt the subject ‘prepared me to be a more reflective teacher’ the average

response was 'unsure' [2.93] however there was a wide variation [SD 1.23] in responses.

Table 3 Selected questions from research methods subject evaluation

Q	Question	Mean	SD
8	The lecture program supported my learning	2.56	1.06
9	Tutorials supported my learning & completion of the assessment activities	3.42	1.22
12	I felt satisfied with the support and timely feedback of assessment tasks by my tutor	3.66	1.22
14	The group project supported my learning	3.45	1.16
17	I could have learnt about the inquiry process by just doing a literature review and a draft design for a project	3.19	1.24
18	By planning, undertaking and reporting on our project I developed a good understanding of the inquiry process	3.16	1.05
19	I found this subject stimulated my thinking	2.86	1.3
20	The amount of work required in this subject was too high	3.91	1.23
21	If interested, I now feel prepared to do honours	2.83	1.26
22	I feel the subject prepared me to be a more reflective teacher	2.93	1.23

Macro spaces: Faculty perspective

In the context of the current curriculum broader 'space' in the case study of a mainstream pre-service primary teacher education [3 + 1 year] Bachelor of Education program, Research Methods remains a core subject in the 5th semester, a core Reflective Practice subject is now located in the fourth year program and a broad 'constructivist focus' underpins some of the foundation and KLA curriculum subjects.

A new four year B.Ed. model is currently being developed and internal pressure to clear space in the current program schedule has been flagged for an extended 'internship' as the in 8th semester and new subject proposals from individual faculty members. Externally there is a requirement for new core subjects [ie Aboriginal Education] from DET registration requirements. There is also the need for new graduate teachers to meet the registration demands of the NSW Professional Teaching Standards (2004) and model of pedagogy described in the DET's (2003) quality teaching framework for "teachers' professional self reflection and for school improvement practices in NSW public schools" (p.4). While all the emergent pressures on the limited curriculum space within the new four year B.Ed. are not contradictory, "Why do we need 'research methods?'" was raised very early in the curriculum debate.

Suggestions that inquiry and research 'skills' could be integrated across the pre-service curriculum has strong support from some staff. A previous curriculum review used an across-the-curriculum strategy to cover the 'curriculum perspectives' in the foundation subjects. Within two years it was difficult to identify where the Multi-cultural Education, Aboriginal Education and Gender Equity policy documents were mentioned, let alone systematically covered! Sectional and discipline agendas took precedence in the limited subject time allocations.

While a strong constructivist epistemology guides the curriculum design and teaching of some subjects and the KBC program, the teaching models necessary for the effective implementation of this approach to teacher education is demanding of staff time. The staffing allocations for teaching are based on the mass lecture model wherever possible. New staff are now mostly hired on their researcher credentials (being a specialist educational researcher rather than teaching researchers). The work-load model awards significant status to research outputs and administrative roles compared to teaching. Unless a teaching initiative has an IT component, pedagogy has a low status on the agenda. Teaching is taken for granted.

Micro spaces: Subject curriculum and pedagogy

At the micro level the tensions in the 'subject space' have been both in the scope of content material covered and the pedagogy. The question of what to include in the subject's curriculum has been debated annually. There is a full range of ideological and research positions represented by members of the teaching team. In part this has emerged from the subject servicing two teaching programs as well as the diverse research interests of the key faculty involved. The content balance has recently shifted toward the 'interpretive' paradigm at the expense of the statistical analysis content desired by some of the Physical Education and Health staff and students. The PE students in the class in their subject reflections specifically asked for more quantitative data analysis and statistics to be covered.

The positivistic/quantitative orientation of the major US texts has been a source of considerable debate. While these mass distributed texts represent the best value per page [and in hardback], overall coverage of the field and in the last few years sophisticated web support links, their often explicit positivist orientation has been at odds ideologically with some staff. The current text, Mertler and Charles (2005) has a balanced approach, good dollar value for students, diverse examples of research texts and self pacing student activities. In addition the web-based support has power point chapter summaries for lecturers and an online multiple choice quiz for every chapter. The students were ambivalent [unsure – 3.15] in its assistance to their learning.

During my absence⁵ in 2004 the subject was co-ordinated by a colleague. The final assessment expectation was scaled back to be a literature review and a draft design for a proposed inquiry. A tutor who has worked in the subject over the past three years reported that the students complained just as loudly about the work-load in the semester when there was no requirement to undertake nor report on their project outcomes.

No implementation, analysis or reporting of the results was required. This was 'pedagogical heresy' from my perspective. "How can you learn about inquiry without doing it!" 2005 opened with a major debate on the scope of the subject. Colleagues argued that the important outcome is for the students to be able to critically read the research. A literature review and a design are all that's needed. Undertaking and reporting a project is too much to expect of the students in 13 weeks. My response was "That's only part of the vision, how can these guys learn the tools to be reflective teachers and contribute to professional and school improvement without experiencing

the gathering, analysing and reporting of data?" The micro politics of staffing and coordinating of a subject with over 250 students became my curriculum and pedagogical lever! Researching and reporting on an inquiry in collaboration with another KLA subject was part of the subject for 2005.

The level of demand of the subject was canvassed in the student evaluation [Table 3] and emerged in the students' end of project reflections. "It was long, exhausting and complex" [Table 1 - rank1]. Most agreed [Table 3, Q20 – Av. 3.91] that the amount of work was 'too much' for a six credit point subject, "We had three other subjects to do, it would be OK as 12 cps!" While there was higher agreement that learning about inquiry was more effective when you had to plan, implement and report [Table 3, Q 18 – 3.61] compared to just doing the literature and draft design [Q 17 – 3.19] the data from the student voices wasn't overwhelming. My cherished ideology about the value of process was somewhat fractured. At least the learning about inquiry by doing a collaborative inquiry was fairly well supported [Q14 – 3.45]. Anecdotally there was good camaraderie and co-operation in most groups and only one or two groups became dysfunctional.

Being a 'reader of research' or library skills was only mentioned by 7 of the 94 students in their reflections. This resonates with the literature that most students value knowledge about professional practice which is grounded in their own experience and from like-minded professionals in the field. The reflection data [Table 2] suggests the students developed skills that would enable them to more effectively address their knowledge needs about instructional methods, assessment and improving the teaching and learning environment. The subject has contributed, though painfully for some, to their capacity to be reflective and skilled to undertake a school based inquiry. It was expected that they would also see themselves as being more effective teachers of inquiry skills to their own students at an appropriate level, this data did not emerge from the reflections.

Reflections toward enhanced best practice

In the macro space of the wider curriculum agenda the recommendations of the 1994 working party are as relevant as ever. It is critical to have the curriculum space for an inquiry and research subject to ensure a systematic induction into the areas of knowledge and practice to meet the 'Graduate Teacher' ⁶professional teaching standards of the NSW Institute of Teachers. The case for an inquiry and reflection subject in the new four year curriculum is to be argued on both pedagogical and strategic considerations. The infusion model suggested by some staff will effectively mean dilution and marginalisation of this critical perspective in the pre-service program

As a secondary strategy it will be important to encourage the development or reinforcement the importance of an inquiry/constructivist perspective across the curriculum and the inclusion of strategic inquiry skills in new subjects as they are proposed and existing subjects reviewed and restructured.

The Faculty needs to develop a full inquiry orientation into the new suite of curriculum and pedagogy subjects and the associated school attachments and placements and to work with schools using the KBC model to enhance collaborative relationships for learning about learning and teaching that explore the full range of views about the development of professional knowledge.

The challenges for me in the micro space of an inquiry and research subject could be:

- Renegotiate the teaching time resources to facilitate a more robust constructivist model. This could mean fewer mass lectures and a reassignment of time to a range of smaller group workshop experiences.
- Begin with the students' lived experiences and conceptions of inquiry and research.
- Use narrative and autobiography to explore personal conceptions of inquiry.
- Maintain the project component but reduce work demands by structuring and facilitating inquiry tasks that have personal and group choice but without the complex ethics approval process.
- Restructure the collaborative component of the inquiry task to include more members and have scheduled workshop time for group meetings.
- Review the text and incorporate regular online activities to cover major concepts and knowledge areas.
- Debate the role of the quiz to meet the required percentage of individual assessment within the subject.
- Enhance the learning of EXCEL
- Encourage and facilitate regular reflections of our own professional and the teams practice as teachers of teaching.

NOTES

² The University was awarded University of the Year in Teaching [2005].

³ The KBC [Knowledge Building Community] program operates as a school focused inquiry orientated experience within the Faculty as an option for approximately 30 students in each 180 student cohort. See Cambourne, B., B. Ferry, and J. Kiggins (2003)

⁴ Currently a US based text Mertler and Charles (2005) 5th edition has an extensive web site support which includes an on-line multiple choice quiz for each chapter.

⁵ I was on unexpected sick leave.

⁶ Knowledge of pedagogy (1.1.2), capacity to analyse and reflect on practice (6.1.1) and Explore educational ideas through research (6.1.7).

References

- Booth, T., N. Hall and W. Vialle (1994) The role of research and inquiry in undergraduate teachers education. A paper presented at annual meeting of Australian Association for Research in Education, Newcastle, November 1994.
- Braun, J. & T. Crumpler (2004) The social memoir: An analysis of developing reflective ability in a pre-service methods course. *Teaching and Teacher Education*, 20, 59-75.
- Bryan, D. (1997) Teaching research methods to undergraduates. *Journalism and Mass Communication Educator*, 51(4), 54-62.
- Cambourne, B., B. Ferry, and J. Kiggins (2003) The knowledge building community odyssey: Reflections on the journey. *Change: Transformations in Education*, 6(2) 57-66.
- Cochran-Smith, M. and S. Lytle (1999) The teacher research movement: a decade later. *Educational Researcher*, 28(7) 15-25.

- Craig, C. (1999) Parellel stories: A way of conceptualising teacher knowledge. *Teaching and Teacher Education*, 15, 397-411.
- Department Education Training (2003) *Quality Teaching in NSW Public Schools: Discussion paper*
- Friesen, D.W. (1994) *Intership possibilities in teacher education: An interpretive exploration of the action research pathway*. SSTA Research Centre Report #93-03, 55 pages.
- Gitlin, A., L. Barlow, M. Burbank, D. Kauchak and T. Stevens (1999) Pre-service teachers' thinking on research: Implication for inquiry oriented teacher education. *Teaching and Teacher Education*, 15(7), 753-770.
- Gore, J. and K. Zeichner (1995) Critical discourses in teacher development. In: Smyth, J. Editor, *Teachers-Social conditions. Teaching – Social aspects*, Cassell, New York.
- Johnson, G. (2004) Reconceptualising the visual in narrative inquiry into teaching. *Teaching and Teacher Education*, 20, 423-434.
- Long, S. (2004) Separating rhetoric from reality: Supporting teachers in negotiating beyond the status quo. *Journal of Teacher Education*, 55(2), 141-153.
- Loughran, J and A. Berry (2005) Modelling by teacher educators. *Teaching and Teacher Education*, 21(2), 193-203.
- Loughran, J. (1996) Practicing what I preach modelling reflection to student-teachers, *Research in Science Education*, 25(4) 431-451.
- Mertler, C. and C. Charles (2005) *Introduction to Educational Research*. Pearson, Boston; 5th edition.
- Neubert, G. and J. Binko (1986) Teach-probe-revise: A model for initiating classroom research. *Teacher Educator*, 22(1), 9-17.
- NSW Institute of Teachers (2004) *Professional Teaching Standards*.
- Poindexter, P. (1998) A model for effective teaching and learning in research methods. *Journalism and Mass Communication Educator*, 52(4), 24-36.
- Ponte, P., J. Ax, D. Berjaard and T. Wubbels (2004) teachers' development of professional knowledge through action research and the facilitation of this by teacher educators. *Teaching and Teacher Education*, 20, 571-588.
- Rice, E.H. (2002) The collaborative process in professional development schools. *Journal of Teacher Education*, 53(1), 55-67.
- Tom, A. (1985) Inquiring into inquiry-orientated teacher education. *Journal of Teacher Education*, 36(5), 35-45.
- Wideen, M., J. Mayer-Smith and B. Moon (1998) A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research*, 68(2), 130-178.

Zeichner, K. (1987) Preparing reflective teachers: An overview of instructional strategies which have been employed in pre-service teacher education. *International Journal of Educational Research*, 11(5), 612-525.

Zeichner, K. (1999), The new scholarship in teacher education. *Educational Researcher*, 28(9), 4-15.