
Reflective Teaching: empirical research findings and some implications for teacher education

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ABSTRACT Reflection has been very fashionable in all sectors of teacher education, including vocational and adult education, for a number of years. Despite numerous articles, there is little solid empirical evidence that supports the view that it results in superior teaching practices with teacher trainees. This article examines the results of relevant empirical studies and some of the more recent writings that have undertaken a more critical view of underlying concepts. Case study material from a new Bachelor of Education in Adult Education degree designed around the concept of reflection is cited. Problems inherent in reflective approaches are examined along with reasons why reflection became so widely adopted in teacher education in the absence of any empirical evidence to support its wide scale adoption. Future developments in teacher education practices involving aspects of reflection are considered briefly, as is the need for rigorous empirical studies before the wide implementation of new teacher education strategies.

Introduction

It seems that approximately once a decade a new approach to learning or teaching appears, and captures the imagination of practitioners so much that it comes to dominate thinking and research. Reflection and reflective teaching are related approaches that have been very fashionable in teacher education and adult education circles for the past decade in the United Kingdom, Australia and the USA (Hatton & Smith, 1995; Johnston & Usher, 1996). During this period any course that did not include elements of these approaches was simply not perceived as operating within the educational mainstream. For example, at one famous United Kingdom Institution Schön's (1983) reflective model, derived originally for the 'hard' professions, has been included in every teacher education module

taught in their course (Strunz, 1998, p. 3). Yet defining what actually constitutes reflective teaching or reflective practices is fraught with difficulty, and this major problem of definition has been recognised for some very considerable period of time (see Tom, 1985; Calderhead, 1989; Hatton & Smith, 1995).

For convenience, in this article the terms 'reflective teaching' or 'reflective approaches' are employed as general terms to cover the concepts, although specific terminology is employed to denote particular sets of values or philosophies.

Problems of Definition and Competing Paradigms

The generic nature of reflective teaching approaches has been noted by Cruickshank & Metcalf (1990) and Feiman-Nemser (1990). All of these approaches are 'intended to prepare teachers to become more thoughtful' (Cruickshank & Metcalf, 1990, p. 485). Teaching, however, by definition involves more than just the acquisition of theory about teaching. Implicit or explicit in all the writings that focus upon reflective teaching, other than the extreme position of theorists concerned solely with the personal development of the individual, is that increased reflection will translate into action and result in improvements in teaching and learning.

Despite a common generic base and ideals of action to bring about educational change, the terminology used by different writers reflects different epistemological positions and traditions that result in the expression of often radically different theoretical ideals. Tom (1985, p. 36) has drawn attention to the range of ideal types of teachers incorporating reflective or inquiry orientated qualities. These include proposals for the development of self-monitoring teachers, reflective teachers, teachers as continuous experimenters, adaptive teachers, teachers as action researchers, teachers as applied scientists, teachers as moral craftsmen, teachers as problem solvers, teachers as hypothesis makers, teachers as clinical inquirers, self-analytic teachers, teachers as radical pedagogues, teachers as political craftsmen and scholar teachers.

Clearly, there is competition between these various positions and ideals, which can only be resolved through close comparison and evaluation of practical outcomes from teacher education programmes based on recommended strategies and stated objectives for each philosophical position. In fact, one would have anticipated that there would have been concerted efforts to evaluate the practical effectiveness of these various approaches by empirical methods and through that the ideological positions that they represent, but this has not occurred to any appreciable degree. Failure to do this may in part reflect serious lack of agreement among individuals supposedly implementing the same paradigm. Without adequate definition, and agreement on ideals and

meanings it becomes impossible to operationalise a paradigm and translate it into practice. Furthermore, without adequate definition, there is little chance of agreement upon objectives or desired outcomes as teacher educators strive to select course and subject content, and utilise processes to achieve the ideals.

Despite the failure to compare experimentally the different paradigms and results from implementation of these, numerous qualitative or case studies on reflective practices have been widely disseminated through publication (see Kagan, 1992). Many of these have reported the enthusiasm of trainee teachers and lecturers using reflective approaches, and/or have explored methods or processes to encourage reflection in student teachers. This, in fact, closely parallels the initial responses to micro-teaching, where there was much premature attention to relatively minor processes and 'nut tightening' before the establishment of the fact that the approach produced superior results to conventional training. Micro-teaching later fell from favour in initial teacher education because of failure to demonstrate advantages when subjected to empirical scrutiny (Cornford, 1991).

In addition, there have been numbers of reflection articles that have attempted to categorise the diversity of views on the essential nature of reflective practices in teaching into some neat taxonomy, either on the basis of underlying philosophy or types of processes employed to achieve objectives (e.g. Tom, 1985; Zeichner, 1993; Copeland et al, 1993; Hatton & Smith, 1995). These articles attempting categorisation do not appear to have resulted in further agreement, or a greater inclination to examine the differential effectiveness of different paradigms or processes when they are implemented.

Need for Empirical Research Evidence

Only a small number of studies have been published that are empirical in nature, and have examined the effectiveness of reflective teaching or practice in achieving the desired objectives of a particular reflective approach. This lack of empirical studies may be attributable in part to those like Gore (1987) who consider that quantitative methods cannot be used to measure reflective teaching outcomes. Gore's stance reflects a period in which empirical research was frowned upon and the very nature of reflective activity was much in accord with qualitative approaches. However, the problems that accumulate on account of over-reliance upon case studies and non-quantitative methods are again being recognised, and the pendulum in teacher education has again swung towards solid empirical research employing both quantitative and qualitative approaches as a basis for progress and the improvement of teacher education. This point is made very strongly by Houston (1996) in the Foreword to the 1996 *Handbook of Research on Teacher Education*

after the first edition carried a preponderance of contributions strongly in favour of qualitative methods (see Houston, 1990).

The extreme proposition of Gore (1987) is educationally undesirable and logically difficult to defend. While it is likely to be supported by those who are unwilling to expose their ideology or commitment to close scrutiny, researchers with a background in measurement and evaluation, and who adopt less extreme positions than Gore, recognise the need for quantitative and qualitative assessment in most teaching-learning situations, including teacher education courses. Unless there is objective, quantitative measurement both before and after the employment of a particular method or intervention then there is no certainty that the goals have been attained (Tom & Valli, 1990), or even what the starting point involved. Furthermore, when all assertions about reflective approaches are accorded equal credibility and worth, it becomes impossible to even attempt to attain Habermas' (1974) goals of emancipatory interest. What is desirable is not simply a testing of paradigms in opposition to reflective approaches, but a testing of conflicting reflective paradigms to determine the most relevant and effective for educational practice. Unless this occurs teacher education programmes, which utilise reflective approaches in the most effective ways, are unlikely to be developed.

More generally, the credibility of reflective teaching and its continued usage with beginning teachers are dependent upon demonstration of significant long-term benefits. The continued useful existence of any paradigm or model is dependent upon that approach being demonstrably superior in some way to existing or competing paradigms, or better able to explain observable phenomena. If a paradigm is unable to demonstrate this, then it will either be ignored by knowledgeable practitioners, or the useful, proven sections incorporated into other theory or paradigms which can better explain observed phenomena and/or are more useful in practice (Kuhn, 1970). The history of teacher education reveals only too clearly that, in the longer term, paradigms or approaches that fail to prove effective or superior fall out of favour, for example micro-teaching (see Cornford, 1991), and are replaced by other approaches.

Effectiveness of Reflective Teaching as Measured by Empirical Research

Results from the few published empirical studies that have attempted to quantify the effects reflective thinking programs have upon beginning teacher thought and classroom performance are disappointing. Chandler et al (1991) found reflection not to be significantly related to teaching performance. Wubbels & Korthagen (1990), comparing teachers who had graduated recently, and some time before from conventional colleges and colleges implementing reflective teaching programmes, found no

differences between the two groups in attitude to reflection and inclination towards innovation. Differences were found in job satisfaction for teachers who had graduated more than 3 years, with the reflective teaching college group superior. The reflective group, regardless of length of teaching, was also rated as having better teacher-student relationships. These last two findings may be attributable to experiences other than exposure to reflective teaching in the teacher education programmes, that is uncontrolled factors in the research, since more recent graduates were not found to be superior on these measures.

Other studies have also found that programmes specifically directed at increasing reflective thinking did not necessarily achieve this goal. Gore & Zeichner (1991) found evidence of attention to reflection in action research reports by student teachers well below levels hoped for. Chandler et al (1990) also reported that reflection was not found to be enhanced by training. Research by Winitzky & Arends (1991) indicated that it is possible to develop schemas approximating those of expert teachers using reflective methods, but they did not find statistically significant differences between experimental and control groups on knowledge or performance. Stoiber (1991) reported significant findings for using reflective practices in developing classroom management skills. However, this study relied upon verbal reasoning concerning proposed actions in classroom management and did not attempt to ascertain whether the superior verbal reasoning skills were translated into superior practical performance in real life classrooms. There is a well-recognised difference between theory and practice, and Stoiber's claims for superiority need to be treated with caution as no follow-up study has been reported by her demonstrating actual performance superiority for reflective teaching.

Even the relatively closely structured, laboratory based, reflective teaching programs for pre-service teachers developed by Cruickshank et al (1981), have not produced results generally favouring the reflective approach. Cruickshank et al's approach, which involved the use of modelled performances, micro-teaching and videotaped feedback of these performances, would appear to have reasonable chances of success, although such an approach has been attacked by Gore (1987) as too limited and 'technicist' in nature. From a skill learning perspective, Cruickshank et al's model more legitimately can be criticised as suffering from the weaknesses that pervade most micro-teaching programmes (and, indeed, teacher education programmes generally), namely insufficient attention to initial learning from models, and insufficient practice and feedback to ensure long-term skill retention and effective performance (see Cornford, 1991, 1996).

Peters (1985), in a review of a number of studies assessing the impact of Cruickshank et al's programmes, reported numerous non-significant differences, that is equivalence, between control and reflective

groups. The few significant differences found indicated that those entering reflective programmes with higher level reflective skills were able to reflect better, that subjects experiencing reflective teaching were better able to think and talk about teaching, and reported feeling less anxiety about practice teaching. Counter-balancing these findings are non-significant results from comparison of experimental and control groups for student teaching grades, and identifying more variables present in the act of teaching. Furthermore, reflective treatment groups did not reveal a more realistic view of the role and demands of teaching.

To impartial researchers without a commitment to reflective teaching, these findings by Cruickshank et al (1981) at best are contradictory; at worst they indicate that the reflective approach employed failed to provide greater insight into the realities of actual teaching and that no differences in actual teaching performance emerged. Although producing an apparently positive finding in terms of lower levels of stress, this may be more appropriately interpreted as complacency since those experiencing reflective methods were not found to be better teachers and were not able to reveal a more realistic view of the role and demands of teaching. The researcher's contact with experienced teachers in the New South Wales secondary system has revealed anecdotal evidence of a major concern by many at the overly high levels of confidence displayed by many student teachers exposed to reflective practices. These student teachers are very frequently judged by experienced teachers as being over-confident with this apparently impeding their ability to benefit from advice or even obvious classroom failures.

Overall, there is a strong tendency for studies assessing the efficacy of reflective teaching to reveal equivalence between reflective treatment and control groups on a range of measures. While there is some evidence that the reflective approach in some studies can produce greater ability to verbalise (Stoiber, 1991; Winitzky & Arends, 1991), there is no clear evidence that this can be carried through into superior practical teaching performance. In terms of adult learning theory, Johnston & Usher (1996) have challenged the relevance of reflective practice as advocated by Boud et al (1993), and others on the grounds that such reflection separates theory and practice.

Failure to Publish Non-significant Empirical Findings

It is probable that the evidence against the assumed superiority of reflective teaching approaches is stronger than what has emerged from published studies. Unfortunately, quality journals seldom report empirical studies producing non-significant results, hence, it is highly likely that there exists a body of other studies that have failed to demonstrate significant benefits for reflective practices with pre-service

teachers. A visit by this researcher in late 1994 to the US Federal Government funded National Centre for Research on Teacher Education at Michigan State University revealed that they had not produced any evidence of the superiority of these approaches. A number of key academics specialising in teacher education at this centre had been strongly advocating the adoption of reflective approaches for a number of years. To the best of this researcher's knowledge, the failure of these concerted efforts at establishing the superiority of reflective teaching has never been widely disseminated. This is unfortunate, since failures can be exceptionally valuable in curtailing excessive enthusiasms and developing more effective approaches. In scientific method it is, in fact, not possible to prove anything, and it is by disproof that knowledge tends to advance through further adaptation to overcome the factors identified as ineffective (e.g. see Cornford, 1991, pp. 25-26).

A Case Study: vocational teacher education based on reflective practice

Lack of empirical evidence seldom stifles ideology or ideological enthusiasm, and so reflective practices became the basis for the new Bachelor of Education in Adult Education developed at the School of Adult Education at the University of Technology, Sydney in 1995 because reflective teaching was fashionable. A core subject in this was 'The Reflective Practitioner' and elements of reflection were incorporated into most, if not all subjects, particularly Field of Practice Specialisation subjects. Fields of Practice included 'Vocational Teacher Education', 'Human Resource Development', 'Language and Literacy', 'Adult Community Education' and the 'Aboriginal Specialisation'. After its first year of implementation this course was changed radically on the basis of feedback from students. The subject 'The Reflective Practitioner' was dropped and, while adherence to the reflective approach has continued in various forms because of the ideological adherence of some lecturing staff, student reactions to reflective practice approaches are frequently negative. Many mature students in vocational education have perceived it as an insult that they are not considered already to be critical thinkers in their area of specialisation. While it is possible that the overly enthusiastic, uncritical approach displayed by some lecturers in presenting 'The Reflective Practitioner' led to student dissatisfaction, many of the underpinning practices, such as keeping reflective diaries, were seen as time-consuming and not resulting in substantial insights.

Basic Flaws in the Reflective Glass

There appear to be two sets of issues that are deserving of analysis in the light of the failure to demonstrate empirically any superiority of reflective

teaching approaches. The first set revolves around the evident weaknesses in the approach that were clearly identified in early criticisms published in major journals or books. The second set involves analysis of why, with such criticism available that would indicate a need for scepticism and caution, did the reflective paradigms attract so many passionate adherents before there was any empirical evidence of their efficacy.

Reflection appears to be part of normal human capability and Newman (1994), somewhat tongue-in-cheek, has lamented the loss of pondering from the vocabulary. There are many who would challenge the notion that those previously engaged in teacher education before the advent of reflection were not attempting to encourage beginning teachers to think critically about teaching and learning. Strunz (1998), with an engineering background, has argued that if there was no attempt to promote serious analysis and thinking prior to the fashionableness of reflection that the teaching profession is in deep trouble. However, while the human species is classified as *Homo sapiens* on the basis of the characteristic capacity to learn from past experience and engage in cognition, there is ample evidence that engagement in natural thinking does not automatically result in improvements to human life or knowledge. It is inescapable that many of the atrocities committed in the former Yugoslavia and Rwanda in ethnic cleansing resulted from much reflection and critical planning by those involved. It is easy to provide evidence that humans do not always engage in cognition that is particularly logical (e.g. see Flavell, 1985) or morally just.

Thinking and reasoning are essential for adaptation and survival of the human species, and thus the concept of reflection may be just far too embracing and inclusive of all human activity to be suitable as a basis for practice and research into teaching. Kagan (1990) has invoked the Goldilocks principle to question the usefulness of reflection and thinking as central constructs in the reflective paradigm. She interprets this Goldilocks principle, which originates from other, earlier writers, as indicating that there are some concepts that are just too big, that is, too general and vague, for effective, real world application. Reflection certainly has spawned a wide variety of ideals for teachers (see above). There is an almost infinitesimal number of possible variations of reflective ideals possible when differences in individuals' ability to acquire and process information, specialisation or occupation, and cultural, religious, political, social class and gender variables are taken into account. Interestingly, Zeichner, one of those responsible initially for promoting reflective teaching very enthusiastically, now sees 'reflective teaching' and a number of other associated terms as 'almost meaningless' (Zeichner, 1993, p. 2).

Need for Content and Process Skills

Reflection needs to be predicated upon both something to think about and the ability to engage in critical thinking. That is, there must be content or a coherent body of knowledge and logical processing skills. Wildman & Niles (1987, p. 26), in addressing the tensions between abstractions and realities early in the reflective teaching debate, stated that: 'Systematic reflective thinking about teaching is predicated upon a broad and in-depth understanding of what is happening in the classroom'. This implies that there is a need for quite sophisticated understanding of teaching and related activities before it is possible to engage in effective reflective teaching practices. Selection of content, and provision of teaching experiences likely to foster understanding of the links between teaching and learning, thus remain as important issues in teacher education courses.

The types of processes that have often been selected and implemented in reflective teacher education may also have been selected on the basis of incorrect assumptions. While there are numerous accounts of strategies and techniques which can be employed to assist trainee teachers develop reflective capacity (e.g. see Hatton & Smith, 1995), there do not appear to be any accounts of helping to develop logical thinking skills. Many accounts of reflection in adult learning theory (e.g. Boud et al, 1993) or reflective teaching (e.g. Hatton & Smith, 1995) assume that students already possess the skills and knowledge necessary for effective, critical thinking. In very few cases does there appear to be any recognition that these skills need to be taught and developed quite explicitly. Even Candy et al's (1994) influential Australian report, *Developing Lifelong Learners Through Undergraduate Education*, failed to recognise the need for explicit instruction in cognitive learning skills in order to form the basis for the reflective practices advocated (Cornford & Peak, 1997). More recent research suggests that even at university level many relatively successful students do not possess awareness of the best skills to use to achieve logical outcomes or an actual repertoire of such skills (Bielaczyc et al, 1995).

Developmental Aspects of Teacher Learning

There is ample evidence in all learning that those with a richer knowledge base get richer and this, in itself, suggests a developmental continuum. Despite this, the developmental aspects of teaching skill acquisition, which have been identified by a number of researchers (e.g. Fuller, 1969; Berliner, 1988), appear to have been almost totally ignored in the reflective literature. This is something of an inconsistency, since beginning teachers are those most focused upon and considered most likely to benefit from reflective teacher education experiences.

Conclusions drawn from reflective teaching studies by researchers at the National Center for Research on Teacher Education at Michigan State University, USA, accessed in late 1994, while the writer was on a Study Leave visit at that Center, were that teachers attained different levels of skill and awareness at their own rates, with considerable individual differences apparent. In earlier reflective studies, where trainee teachers revealed themselves as having particular needs and concerns that can be situated in a developmental continuum, this was ignored by researchers or misinterpreted (e.g. see Bolin, 1988).

In many reflective teaching publications it would appear that the expectations held for beginning teachers were unrealistic, particularly where political awareness and moral reasoning were desired objectives. In some of the writings that achieved an almost cult status, a major object, clearly and unambiguously stated, was changing the nature of teaching and learning, and of the social fabric and the world through such activities (see Carr & Kemmis, 1986; Gore, 1987). McIntyre (1993), in reviewing a number of studies based on action learning, concluded that objectives for achieving reflection at critical or emancipatory levels were not attained. Students in the programmes reviewed appear to have followed Fuller's (1969) stages of developmental concern, with these trainee teachers being predictably concerned with technical teaching skills essential for classroom survival (see McIntyre, 1993). Results reported in other descriptive studies (e.g. Pultorak, 1993), also indicate the importance of Fuller's stages in teacher development.

Reflection – and Forgetting

Another serious weakness inherent in many reflective paradigms is the failure to take account of a long recognised problem in human learning – forgetting. Simply being critical is not enough either to guarantee that those critical thoughts will be remembered or that those thoughts can be translated into effective procedural action. For example, can the reader clearly recall all the issues that were reflected upon on Monday last week? While keeping of diaries and other records is one avenue to addressing this problem (Hatton & Smith, 1995), and those advocating action learning (e.g. Carr & Kemmis, 1986) and reflection via micro-teaching (e.g. Cruickshank et al, 1981) address some issues of connecting learning to doing to facilitate retention, none of the approaches takes heed of the need for substantial practice and feedback over extended periods of time to develop skills (Cornford, 1996). The time frames of most programmes attempting to develop sophisticated performance and thinking skills for complex natural classrooms, and change deeply ingrained values and attitudes of novice teachers, are frankly totally unrealistic. Furthermore, most experienced teacher educators would

consider that values and attitudes are more difficult to change than to develop specific performance skills.

Reasons for the Wide Acceptance of Reflection

Given the general failure of empirical studies to demonstrate any benefit for reflective approaches and the enthusiasm displayed for this unproven paradigm, it is important to analyse why there was such immense enthusiasm for it. Such an analysis may lead to lessons concerning premature adoption of innovations that consume resources and staff energy and time without any tangible benefit. What does seem relevant is that there was pertinent, carefully reasoned criticism of reflective teaching from a number of published sources (e.g. Gilliss, 1988; Shulman, 1988), but this did not seem to dent the enthusiasm in any way.

The general socio-political milieu probably goes a long way in helping to explain the wide enthusiasm for reflective teaching. In the 1980s and early 1990s the initial effects of the technological and economic revolutions were starting to be felt. Demands for more effective schooling and post-compulsory education emerged as the competition from developing Asian nations came to be felt, with these demands being reflected in all kinds of government reports. The need to think more creatively and effectively to become more competitive and improve work productivity seems an obvious solution.

It is probable that the adoption of reflective practices also had much to do with the reduction of funding to teacher education during this period of economic rationalism. Getting students to think more deeply to compensate for cuts to teacher education programmes may have seemed a way of maintaining professional credibility. Making do with less has been of feature of teacher education for many years. However, there is little explicitly indicating the pressures of economic forces operating in the reflective literature unless one looks very hard, and then it is usually an oblique reference (e.g. see Winitzky & Arends, 1991). It seems almost as if teacher educators really believed that they could achieve more with less through establishing a teacher education objective of better thinking for novice teachers.

It is doubtful whether reflective paradigms would have resulted in the almost religious fervour that occurred in many Anglo and some European countries, and still continue (Strunz, 1998), without the paradigms touching more closely upon other aspects of belief and social identity. It is possible to speculate that religious beliefs play a role. Reflective teaching is very much in accordance with Protestant religious values where truth is seen as emerging from within, from personal revelation. Indeed, it was on this issue that one of the most famous splits in history occurred with Martin Luther parting company from the Catholic church. In adult education, particularly in Australia and the

United Kingdom, there appears to be a high number of ministers or former ministers associated with the Protestant churches who are writers about or supporters of reflective practices.

Reflection and generalisation of self-analyses to others are also important components in much European philosophy, and reflection is likely to be perceived sympathetically for that reason. The writings of Aristotle, Plato and Socrates, founders of educational thinking, abound with accounts of self-analytical thinking. Descartes' major premise was 'I think therefore I am', while Kant made his important distinction between empirical and a priori reasoning (see Frawley, 1997). However, separation of the theoretical and practical as is encouraged by many reflective approaches is not at all productive (Johnston & Usher, 1996).

Critical Thinking and Effective Learning

Critical thinking is or should be an important element in all aspects of learning and performance. Without it there is little likelihood of meaningful storage of knowledge, and the result is superficial or 'rote' learning. Application of knowledge and skills without critical thinking is likely to be 'hit and miss', and largely 'miss' where skilled performance and problem solving are concerned (Cornford, 1996). Furthermore, any number of important decisions need to be made on any one day in the life of any individual, and it is to be hoped that these are supported by rational analysis and critical thinking. Yet critical thinking is necessary, but not sufficient. There needs to be both knowledge and bodies of intellectual and performance skills that form the basis for critical analysis. Without these, and the ability to translate the critical analysis into action to improve performance, there is little overt social benefit to be gained from engagement in critical analysis. As Shulman (1988) pointed out, there are real dangers in dichotomising thinking in education.

It is beyond the scope of this article to outline in detail the many desirable knowledge and skill elements, that is content, which needs to be included in any effective teacher education course. However, a brief, but inadequate reference must be made to indicate a realistic basis for the development of critical thinking and thus a habit of reflection by teachers. Technical teaching skills should form part of the basis for effective teacher education courses and for effective critical thinking skills, although these are much neglected by many in the reflective teaching movement, with those advocating the teaching of these even being abused as 'technicist' (Carr & Kemmis, 1986; Gore, 1987).

Technical teaching skills and techniques are essential for effective classroom management and learning by students. Furthermore, they are of great concern to beginning teachers (Berliner, 1988; Fuller, 1969). It is worth noting that those recruiting teachers still place possession of

technical teaching skills high on the list of necessary abilities and qualifications (Ralph et al, 1998). Other, also essential, foundational knowledge for effective teaching are the three areas identified by Shulman (1986). These are subject content knowledge, pedagogical knowledge, that is knowledge about teaching and learning, and pedagogical content knowledge, that is knowledge derived from teaching experience of the more difficult area for students and how to teach these areas more effectively. No less essential are knowledge of social issues, history of educational movements and professional attitudes and practices.

In tackling the important issues of what is involved in effective learning, how a teacher should select, structure and present material, and consideration of the forces shaping society and education, there is ample opportunity for teacher educators to establish a firm foundation for the development of critical thinking which is essential to drive effective teaching performance. However, the developmental needs of teachers to develop teaching survival skills needs to be the priority in early stages and not be swamped by social idealism. Firm focus upon the realities of learning and about truly effective teaching may have the additional benefit of providing a firmer focus and structure for teacher education courses generally. Criticisms that teacher education courses in the USA lack unifying theoretical frameworks or greater sense of focus and purpose have persisted, if not increased, through the era of intense enthusiasm for reflective teaching approaches (McIntyre et al, 1996). Uncritical adoption of reflective teaching approaches in teacher education courses in other countries in the absence of tight structuring has almost certainly produced the same result, as the teacher education case study cited in this article indicated.

Conclusions

There is no empirical evidence that clearly establishes that reflective teaching approaches have resulted in superior teaching or learning about teaching for beginning teachers. There is still great confusion concerning the concept, with there being good reason to believe that it is too all-embracing and wide-ranging to assist in researching and developing effective teacher education practices. That is not to deny in any way that thinking and critical analysis are important. The problem is how to encourage these skills, while still building a solid foundation of technical teaching skills, which have been neglected in many reflective paradigms or even spurned as being technicist (e.g. Gore, 1987).

Retention of learning, practice and feedback, and developmental stages in teacher learning are important issues regardless of the teacher education paradigms employed. The work of Berliner (1988) on the stages in the development of expertise in teaching would appear to be linked

conceptually with some reflective teaching paradigms, especially in relation to the development of problem-solving skills more effectively at proficient and expert levels. However, to date, Berliner's recommendations concerning the need to respond to beginning teachers' developmental needs appears to have been passed over in the enthusiasm for reflective teaching. There is also reason to believe that the explicit teaching of thinking and analytical skills may assist beginning teachers to become more critical and thoughtful practitioners. It is time that we stopped assuming that all students, even adults, are in possession of effective cognitive skills that develop naturally and without the need for specific teaching. As with all skill learning, regardless of whether it involves performance skills or cognitive skills, there is a need for programmes that train for the desired skills. This must involve modelling of the skills, and involve considerable practice and feedback (Cornford, 1996).

Above all, there is one consistent message that emerges from consideration of the enthusiasm for reflective teaching paradigms. This is that all new paradigms should be assessed in an empirical way before there is wide scale adoption (see Houston, 1996). As has been shown with results from empirical studies involving reflection, what may appear to be promising avenues for teacher training may not be effective in even the medium term. It is perhaps time that educational decision makers realised that wide-scale implementation of new approaches, which satisfy short-term social or political imperatives before empirical assessment via thorough, smaller scale trials, may be counter-productive in the longer term. Simply rushing to join in a fashion in an uncritical way seems the height of social irresponsibility and a denial of possession of truly critical skills of analysis, which it would be expected that teacher educators and policy makers should possess.

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