Student Teacher Self-Efficacy: Scaffolded and unscaffolded reflection

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Abstract

This study emerges in the light of heightened debate about what constitutes best "evidence-based teacher education" programs, and benchmarked professional standards of teacher graduate attributes. Within teacher education, the beliefs students create, foster and hold true are foundational motivators determining depth of engagement and learning both intra-personally and professionally. The impact of self-efficacy beliefs in pre-service teacher education is profound. Consequently, this paper explores the processes by which students developed, identified and especially reflected upon their self-efficacy beliefs. The broader study has used both teacher and learner self-efficacy scales and was begun in 2006. However in this paper students' reflective writing on two administrations of teacher self-efficacy scales are focussed upon. An analytical framework based upon self-efficacy, reflective practice, the Quality Teaching Framework (NSW DET 2003) and the NSW Institute of Teachers' Professional Teaching Standards (NSW IT 2005) informed this study. Two forms of students' reflective writing, scaffolded and unscaffolded, were analysed to ascertain student beliefs, and knowledge about their reflective practices as student teachers, and the differences between scaffolded and un-scaffolded reflections. Preliminary findings revealed a relative conceptual shallowness in the intellectual quality of students' reflective practice in un-scaffolded as compared to scaffolded reflections. Implications are drawn for teacher education practice.

Introduction

Teacher education courses are increasingly challenged by the demands of how best to equip graduates for the profession. Currently, within New South Wales, there are moves to accredit courses and graduates in terms of Professional Teaching Standards, prescribed by the NSW Institute of Teachers (NSW IT 2005) with the intentions of ensuring graduates are 'best equipped' for the profession. However, the NSW IT specification of professional competencies plus tighter levels of accountability (in NSW, the Quality teaching in NSW public schools documentation) begs the question: Are we missing something if teacher educators stick to narrow specifications?

NSW IT (2005) accreditation focuses on the professional knowledge, practice and commitment of teachers, from under-graduate to graduate, through to professional leadership expertise. There is much being said about the professional competencies of our teachers, at national (Commonwealth Government 2007 and Ingvarson & Elliot 2006), state (NSW IT 2005), institutional (Chapman 2003) and pedagogical (NSW DET 2003) levels, but little if anything is being said or done to incorporate the intra-personal competencies of our teacher education students and graduates. Here the 'intra-personal' is considered to be related to, but separate from, the professional. As far back as 1984, Ashton (1984:28) highlighted:

> A powerful paradigm for teacher education can be developed on the basis of the construct of teacher efficacy… no other teacher characteristic has demonstrated such a consistent relationship to student achievement. A teacher education program that has as its aim the development of teacher efficacy, and which includes the

> essential components of a motivation change program, should develop teachers who possess the motivation essential for effective classroom practice.

Gibbs (2003:7) likewise highlights the need for teacher education programs to focus less on "developing knowledge and skills" and more on developing "expertise in exercising self-efficacy and thought control of action". In effect, this paper explores this possibility.

Currently, the NSW IT focuses solely upon the professional attributes of graduates, constraining teacher education and our graduates to a single dimension, the professional. Such an approach can be likened to attempting to grow a plant in a plot of depleted soil. Water and sunlight (the professional) with no nutrients (the intra-personal) means the plant will not flourish. More water and sunlight can only create a plant of frail stature.

This paper focuses upon one aspect of a much larger thesis; the development of the intra-personal through the building of (student) teacher self-efficacy beliefs and reflective thinking. As such this paper is a companion piece to Jones & Maxwell (2007) learner self-efficacy and reflection. Because it is based on student teacher data, the paper is an important snap-shot; it provides the opportunity to listen to what teacher education students say and how they say it. The methodology used gives the students themselves a voice, to speak of their teacher efficacy and to reflect upon these beliefs. If, as Ashton (1987) maintains, the intra-personal links to "student achievement" and "motivation essential for classroom practice" (the professional), then it is not only justifiable, but fundamental to professional potency that a move is made to encompass a two-dimensional approach to teacher education. Teacher education programs, which tackle efficacy issues, will assist the development of more effective, high efficacy learners and teachers who draw from the rich soil of their own intra-personal as well as their professional learning.

The following sections of this paper will articulate key aspects of the research so far. The literature review concentrates upon: definitions of the intra-personal dimensions of self-efficacy beliefs and reflection and their inter-relationship, and the implications these insights provide for a new model in teacher education. Reflection is included because it is a vital process in the formation of self-efficacy. The following section then outlines the design of the study into students' reflective writing in response to their identified (student) teacher self-efficacy beliefs, in both scaffolded and unscaffolded form. Subsequent to this will be an analysis and discussion of the findings, their implications and concluding directions for further research.

Self-Efficacy beliefs

As outlined above, this paper builds a case for a model of teacher education that deliberately integrates the intra-personal and the professional. Teacher education students' teacher self-efficacy beliefs encompass perceptions of their professional capabilities in relation to specific tasks, contexts and goals. Self-efficacy is not to be confused with self-esteem, which is a broader, affective evaluation of oneself, i.e. self-worth. According to Bandura (1997:11) the single most important determinant of teacher education students' professional behaviour is their perceptions of their ability to succeed in specific tasks and contexts, that is to say, their self-efficacy beliefs. Putting this in a slightly different way, beliefs these students create, develop and hold to be true about themselves as teachers form the very foundation of their professional learning and are vital forces in their success or failure in their teaching endeavours (Pajares 2004:1).

Teachers' self-efficacy beliefs are largely created by, and are the products of, reflective thinking upon the incongruities of "the fit" between teaching theory and practice. Teaching in seminars and on practicum, receiving feedback and reflecting upon these experiences, creates self-efficacy positions. As a perception, self-efficacy is vulnerable to being an overestimation or underestimation of actual abilities and this has consequences for student teachers' choices of action and subsequent efforts (Tschannen-Moran 1998:211). However, students' professional teaching competencies are honed through making insightful self-appraisals, as they interpret and organise incoming efficacy information in the light of their experiences (Bandura 1997:81). Constructive reflection builds self-efficacy. For example, when a student/ teacher credits success to their personal capabilities and failures to insufficient effort, then they will "undertake difficult tasks and persist in the face of failure" (Bandura 1997:123). This process is a cyclical model of "thought-affect-action" whereby personal efficacy determines professional proficiency (Poulou 2002:130).

The Professional Teaching Standards of the New South Wales Institute of Teachers (2005) provide the framework for teachers' professional practice. In doing so they include teacher self-efficacy beliefs, in particular: Elements 1 and 2 refer to engaging students; Elements 3 and 4, instructional strategies; and Element 5, classroom management. I shall consider each in turn.

Engaging students. Teachers with a higher sense of efficacy in engaging their students: (1) are more willing to use new approaches to better meet the needs of their students (Berman 1997 et al; Tschannen-Moran & Wolfolk Hoy 1998:213); (2) are less likely to criticise a student's incorrect response (Gibson 1984:580) or errors (Ashton & Webb 1986); (3) are more inclined to persist with students having learning or behaviour problems rather than referring them to outside agencies (Tschannen-Moran 1998:214); (4) realise higher levels of student achievement (Gibson 1984); and (5) instil a greater sense of learning efficacy in their students (Anderson 1988).

Instructional strategies. Teachers with high instructional efficacy employ strategies that: (a) use small group and cooperative structures for instruction and learning; (b) are more innovative; (c) utilise a diverse range of materials and approaches; and (d) integrate better pedagogy (Tscahnnen-Moran 1998:214). Efficacy also (e) impacts upon teachers' organisational and planning skills with those of higher instructional efficacy: developing more adept skills and, increasing their students' achievements (Ross 1992 et al; Tschannen-Moran 1998:237).

Classroom management. Teacher efficacy for classroom management determines the choices they make in managing student behaviour and the classroom. Strong relationships exist between low levels of efficacy and the need for under-graduate teachers to be "controlling" of, rather than to foster self-control within, students. Emmer and Hickman (1990) found a strong correlation existed between higher efficacy subscales and teacher education students' preferences for positive classroom management choices: giving more encouragement, praise, attention and rewards. Highly efficacious teachers are less threatened by a sense of failure, choose less interventionist approaches, and are more likely to seek help for themselves in dealing with discipline concerns.

In summing up, teacher self-efficacy beliefs are unquestionably a significant factor in teacher education. Teachers, highly efficacious in engaging students, instructional strategies, and classroom management benefit not only themselves but also the engagement and achievement efficacy of their students (Tschannen-Moran 1988:215). Alternatively, low efficacy teachers have a detrimental impact upon the engagement and achievement efficacy of their students, which in turn leads to further declines in

teacher efficacy (Bandura 1997:210). Teacher accreditation bodies, teacher education courses and educators have a pressing responsibility to integrate the richness of the intra-personal, the self-efficacy beliefs of developing teachers, into teacher preparation. This can be achieved through a deliberate, constructivist approach to teaching education students to reflect on their intra-personal and professional development.

Reflection

Education students construct their own theories of how to instruct, engage and manage students. They do so by reflecting upon the intentions of theory (cognitive) in the light of their teaching experiences (actions). This process of theory building is highly complex, dynamic and demanding. If, as Argyris and Schon (1974:3) note, "integrating thought with action effectively has … eluded professional practitioners for years" then, unquestionably, our teacher under-graduates need explicit support to develop the essential reflective knowledge and skills that inform "theory building".

Reflection is the active, persistent and careful consideration of an action and/ or belief. When reflection is critical it goes beyond the "process of reviewing an experience or practice in order to describe, analyse, evaluate and so inform learning about practice" (Reid 1993:305) and considers the underlying belief systems to the actions. "The outcome of reflection is learning" (Mezirow 1981:24), i.e. factual, conceptual, procedural and/ or meta-cognitive knowledge is produced (Anderson & Krathwohl 2001) leading to theory building. The knowledge gained through reflection assists teachers to:

a) deal with the incongruities that arise in their own professional practice, when their "theories-in-use" (Argyris & Schon 1974:7) (actions) are in contrast to their intended "theories-for-action", (for example, a belief in intrinsically motivating students is quickly quashed by an over-reliance on external motivators);

b) align their self-efficacy beliefs, for specific professional behaviours, realistically and constructively; and

c) deal with any sense of "helplessness and incompetence" (Lennox 1991, Poulou & Norwich 2002:11) or elation that may arise when they are faced with the extreme demands of the profession.

Proficiency in reflective thinking enables teacher education students to integrate their professional knowledge and skills, and their intra-personal self-efficacy beliefs, with their professional practice. By "thinking-in/on-action" (Schon 1987:355) they envisage their professional competencies, problem-solve and improve the quality of subsequent teaching and learning (Dewey 1933:9). In effect, they are "learners-of-teaching" and "teachers-of-learning". Critical reflection is the means by which all teachers self-monitor and self-regulate. Life-long learning, professional autonomy, and commitment to the profession are built upon the constructive dynamic of "theory", efficacy belief and practice.

Teacher educators' "theories of action" and "theories-in-use". Argyris and Schon (1974:33) alert us to the dilemmas that arise when teacher educators' "theory of action", in this case that of developing reflective practitioners, is incongruent with their "theory-in-use". Are educators maintaining a systematic self-deception by "speaking in the language of one theory, acting in the language of another, and maintaining the illusion of congruence" (Argyris & Schon 1974:33) when it comes to preparing "reflective practitioners"?

This was indeed the dilemma that confronted me within the first semester as a teacher educator, in the University of New England's Bachelor of Education (BEd). Although reflection forms part of students' assessment demands in the BEd, it appears to be a source of persistent confusion and frustration on the part of both students and teacher educators alike, in this program! Students predominantly fail to meet teacher educators' expectations, and we, as teacher educators, although secure in identifying exemplars of reflective writing, provide limited or no scaffolding to enhance reflective practice. A goal of this research is to, in some part, address the incongruities of espoused beliefs and practice in my own practice at the least.

Written Reflection. Writing takes time to construct and so is inherently more reflective than speaking. Also, because thoughts are captured on a page they can be considered, even reflected upon, later. Written reflection provides considered, potentially at least in two senses, insights into the ways in which undergraduates make sense of the dilemmas they encounter between the dynamics of "theory", efficacy belief and practice. The solitary approach of writing reduces the impact of the influence of significant others in a socially constructed dialogue. What it does achieve, however, is a dialogue with the self in the two senses mentioned earlier: (1) when the 'right' construction is sought for the page and (2) when the audience of the writing is the writer. It is thus a potentially important tool for the development of self-efficacy belief. Reflection containing the two levels of reflection can be thought of as authentic, all the more so, if the writing is of the critical variety.

Authentic reflection genre has its own structural and meta-language demands. Understanding the structure is crucial to both (1) the teacher educator teaching and assessing the process, and (2) the education student developing the essential knowledge and skills. The revised taxonomy of Bloom (Anderson & Krathwohl 2001: 67-68) provides a scaffold. For example, reflection involves the cognitive processes of: (1) recalling and (2) understanding students' experiences in (3) applying their pedagogical knowledge and skills, for the purposes of (4) analysing and (5) evaluating the experience to (6) create new theories, knowledge and skills. Scaffolding students in how to structure reflective thinking is essential because they need assistance to move from lower to higher levels in order to achieve critical reflection. A constructivist approach in which modelled, guided, shared and independent approaches are used would ensure a greater degree of mastery and represent an important development in teacher education.

From reflection to critical reflection. In terms of subject content and perspectives, students' reflections evolve from the egocentric to broader ethical considerations. Hatton & Smith (2006:5) identified "descriptive writing" (not reflective) and four types of reflection, by drawing on the work of Schon 1983, 1987; Shulman 1988; Van Manen 1977; Smith & Lovatt 1991; Smith & Hatton 1992, 1993. The perceived developmental sequence includes: (i) Technical reflection evident early in the preparation course when students have a preoccupation with their own performance of essential teaching skills (self and task); (ii) Descriptive reflection involving students' personal judgements, with limited reference to literature when evaluating their teaching in terms of "best practice"; (iii) Dialogic reflection involving an internal discourse, in which the student analyses and evaluates a range of reasons for experiences or behaviours, and (iv) Critical reflection which is only surpassed by "thinking-in-action" (Schon 1993, 1997) in terms of this perceived developmental hierarchy. Social reconstructionist in nature, critical reflection involves the student in seeing as problematic the goals and practices of [the] profession according to ethical criteria (Hatton & Smith 2006:8) in the light of the broader historical, social and/ or political context of the profession.

Reflection that modifies "theory-in-use" may involve "single-loop" or "double-loop" learning (Ashby 1952 et al; Argyris & Schon 1974:19). Technical, descriptive and dialogic reflection, all "single-loop" in nature, involve problem-solving to maintain an existing variable. However, critical reflection involving a change in governing variables such as beliefs, is considered "double-loop" learning. Both forms of reflection are integral to teachers: the former assists teachers to cope with routine choices; the latter is concerned with resolving the predominant variables of ethical, cultural, social and/ or historical issues. When much of novice teachers' pedagogy is learnt through an "apprenticeship", the ability to critically reflect enables novice teachers to continue to develop their own "theories" of "best practices" in teaching and learning rather than simply replicating all that they see modelled.

Conceptual framework

The "Learner-Teacher-Learner" (LTL) Model (Jones 2007) proposes a way of conceptualising the inter-relationship between personal and professional dimensions in teacher education using critical reflection as an essential process to the development of both. The Model (see Figure 1) integrates the intra-personal self-efficacy beliefs and reflective practice already discussed, with the expectations of professional teacher competencies and "best pedagogical practices".

Professional teacher competencies. In NSW, students and teacher educators are accountable to expectations detailed in the New South Wales Institute of Teachers Professional Teaching Standards (NSW IT 2005). The mandated Standards have, in effect, provided the direction and structure for teacher education in NSW. They focus on the nature of teachers' work and the attributes of teacher graduates, in terms of: Professional Knowledge (Elements 1 & 2); Professional Practice (Elements 3, 4 and 5); and Professional Commitment (Elements 6 and 7). Reflection is acknowledged as a professional competency, limited to that of enhancing student learning i.e. "Demonstrate a capacity to reflect critically on and improve teaching practice" (Aspect 6.1.11).

"Best pedagogical practices". The Quality Teaching in New South Wales Public Schools (NSW DET 2003) document provides a model for defining "How teachers will teach" i.e. "best practices". This document proposes the QT model which provides a self-reflection tool for teachers to "understand, analyse and focus their teaching practices for improved student learning" (NSW DET 2003:3) in schools. The Dimensions of the QT model include:

a) Intellectual Quality embedded through deep knowledge and understanding, problematic knowledge, higher order thinking, metalanguage and substantive communications;

b) Quality Learning Environments ensured by explicit quality criteria, high engagement and expectations, strong social support, self-regulation and self-direction, and by valuing the

c) Significance of background and cultural knowledge, knowledge integration, inclusivity, connectedness and narrative (NSW DET 2003).

Teacher education student's growth, as learners and as teachers, is enhanced by appreciating the inter-relationship between professional and intra-personal competencies as evidenced in the LTL model.

The "Learner-Teacher-Learner" (LTL) Model

The "LTL" Model (Jones 2007) was heavily influenced by Bandura (1976, 1993 & 1997) who claims that self-efficacy beliefs influence thought patterns and emotions, which in turn impact upon effort, actions, persistence, resilience and control over life events, in this case, teaching practices. The LTL Model articulates that what is observable on the "outside" is in fact determined by what goes on in the "inside". The LTL Model will be the means of testing the general issue of self-efficacy and its relationship with self-reflection in particular.

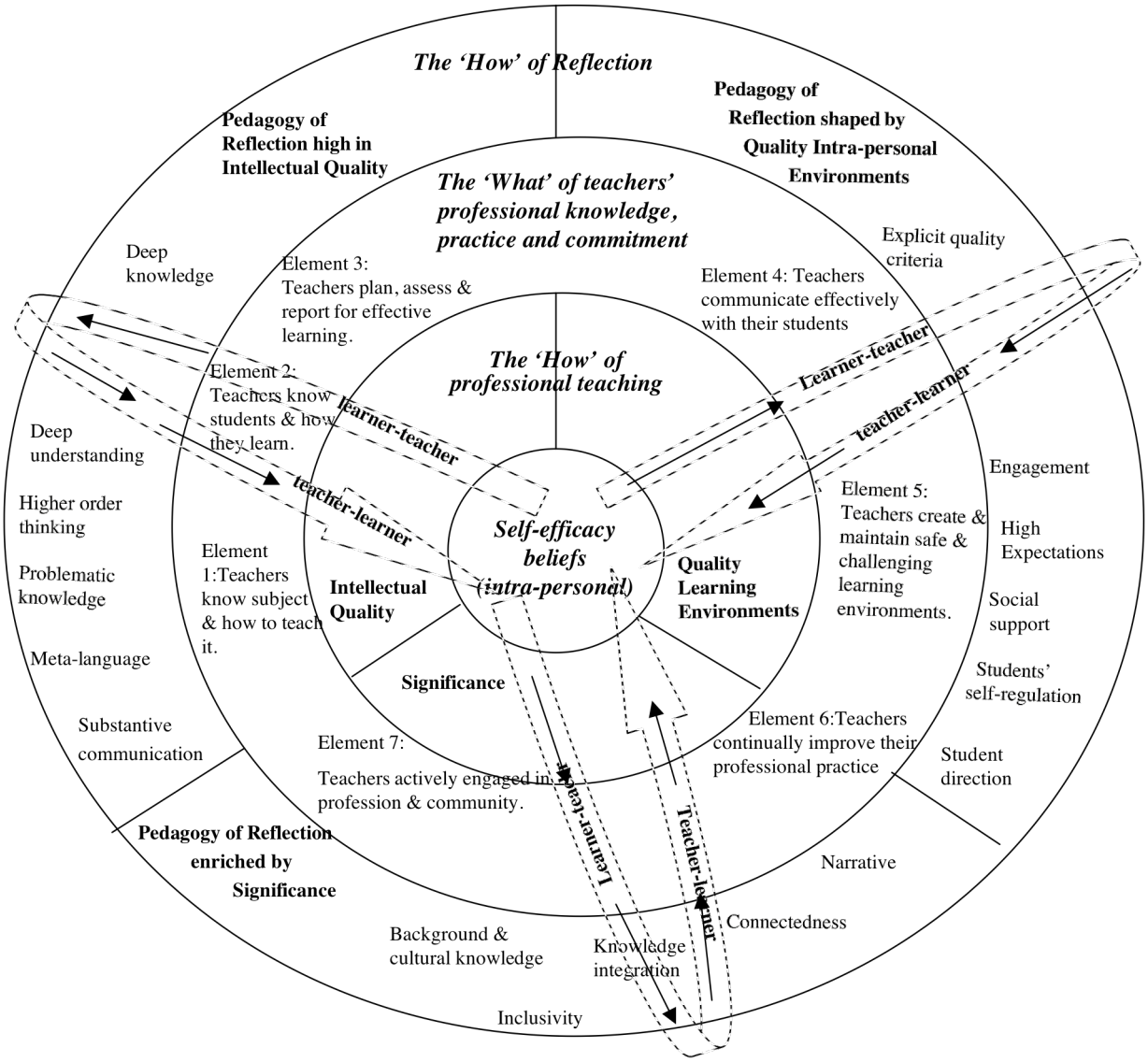

Figure 1 Learner-Teacher-Learner Model, Jones (2007)

There are four layers that interact within the LTL model: the inner and outer layers refer to the intra-personal, and the middle two layers, the professional. This conceptualisation is further developed through these ideas:

Self-efficacy beliefs form the core motivating force, of learner-teacher-learner development. “Theory building” incorporates developing professional teachers’ knowledge, skills and beliefs;

1. the **Quality Teaching** (NSW DET 2003) dimensions provide explicit approaches and benchmarks by which teachers ensure: Quality Learning Environments, Intellectual Quality and Significance in their professional practice;
2. the **NSW IT Professional Teaching Standards** (NSW IT 2005) refer to the developing professional teacher competencies; and
3. the **Reflective thinking** informs the development of teachers’ “theory building”, competencies and efficacy.

The arrows of “learner as teacher” and “teacher as learner” circulate as students’ self-efficacy beliefs, shaped by reflective practices, determine the proficiency of individuals’ professional and personal development. A dynamic interaction is interwoven between each layer of the LTL Model as a reciprocality of cognition and affect, behaviour and environment, interact. Professional proficiency is dependent on the quality of teacher education pedagogy, and the quality of students’ reflective thinking and self-efficacy beliefs, within their self-schema.

Research Question

The research question provides the direction for both qualitative and quantitative data collection, analysis and the generation of new “theories” of teacher professional development:

How effectively do students reflect in writing, with and without scaffolding, upon changes in their Teacher Self-efficacy beliefs?

Methodology

The Teacher Sense of Efficacy (TSE) Scale (Tschannen-Moran & Woolfolk Hoy 2001) was identified as a suitable instrument for efficiently collecting a great deal of data on the teacher self-efficacy beliefs of a cohort of second year volunteer BEd students. The goal was to allow the students themselves to articulate their teacher efficacy beliefs, in semester 3 and semester 4, in a manner that allowed for comparison and reflection. The TSE Scale incorporates 24 items in three subscales (Efficacy in Student Engagement; Efficacy in Instructional Strategies, and Efficacy in Classroom Management) and each subscale has eight items. Students responded to the questions “How much can you do?” on a nine point Likert scale ranging from 1, “Nothing”, to 9, “A great deal”. Although the TSE scale was constructed for American undergraduate and graduate teachers, the three subscales reflected key tenets of the NSW IT Professional competencies, and were hence deemed culturally appropriate for implementation to UNE, BEd undergraduates. UNE Higher Research Ethics Committee approval was given for this research into BEd students Teacher (and Learner) self-efficacy beliefs and reflective practices.

The TSES instrument was implemented, in Phase 1 (May 2006), with 86 students. Seventy of the original 86 students completed the same TSE Scale in Phase 2 (November 2006) after students had participated in a three-week block practicum. In Phase 3 (November 2006), 42 students of the original 86 students were placed randomly in two groups and given as much time as they needed to develop a written reflection based upon their aligned Phase 1 and Phase 2 TSE Scales. Twenty-one students were given minimal instructions and the second group of twenty-one students

were given a scaffold, the "Reflection for Action- 3Ws Approach" (Jones 2006) to read before reflecting. The term "reflection" was defined to ensure the purpose of the task was clear, and the scaffold directed students' from lower order (recall) to higher order (analyse, evaluate and synthesis) thinking (Anderson & Krathwohl 2001:31)[1]. For example:

> Step 1. Develop a paragraph that explains: 'What happened?' i.e. a description
>
> Step 2. Develop a paragraph that explains: 'Why did it happen?' i.e. an analysis
>
> Step 3. Develop a paragraph that explains: 'Where will I go from here?' i.e. planning, goal setting

The qualitative data were then used to (i) identify students' current reflective cognitive processing strategies and (ii) clarify the developmental parameters of reflection, whether it was simply descriptive writing, or reflection of a technical, descriptive, dialogic (single-loop) or critical in nature (double-loop). The opportunity was also taken to compare scaffolded and un-scaffolded reflections.

All students had some experience in oral and written reflection, particularly in the Teaching and Learning units, so had a range of knowledge and skills, which they could transfer to the task. The scaffold was provided to ascertain if the provision of explicit criteria did in fact increase the students' abilities to both apply what they already knew, and further develop the critical quality, of their written reflections.

Results and Discussion

Quantitative and qualitative analysis of the two sets of written Reflections, one set "with scaffold" (WS) and a second, "without scaffold" (WOS), was undertaken. Content analysis of revealed:

a) Reference to the items of teacher efficacy: student engagement, instructional strategies and classroom management (see Table 1);

b) A quantitative analysis of the structure of the written reflections; and

c) A qualitative analysis in terms of identifying items, analysing items, and generating new insights and goals (see Table 2).

Furthermore, two case studies of written reflection are discussed subsequent to the discussion of the content analyses: one WS (scaffolded) and one WOS (unscaffolded). These case studies represent (i) a range of reflective skills and competencies in terms of students' higher order thinking, the creation of new knowledge and understanding, and goal setting, (ii) the "perceived developmental stage" of the reflection, and (iii) disparities in the degree of self-monitoring and self-regulation strategies evidenced.

Analysis of written reflections. A quantitative examination of the 42 reflections reveals a significant contrast in (i) the average number of words in each of the groups i.e. WS, 183 words WOS, 132 words (40% more words for WS) and (ii) the number of specific items students identified in their responses, between the two groups: ie. 73 for WS compared to 47 for WOS overall (55% more Items) (see Table 1). The full range of items, whether identified high or low in terms of specific teacher efficacy beliefs, were

[1] The scaffold did not include prompts for critical reflection / "double-loop" learning, a distinction that has since been identified in the literature.

included. WS reflections were consistently more explicit in identifying teacher efficacy: for example, “efficacy in student engagement”, WS 24 Items compared to WOS 18 items (33% more); “efficacy in instructional strategies”, WS-24 Items in contrast to WOS 15 Items (60% more); and “efficacy in classroom management”, WS 25 Items in comparison to WOS 14 Items (80% more. It is interesting to note WS students appeared to engage with the task for longer and made more explicit identification.

Table 1. Summary of Items mentioned in students’ written reflections on their Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001).

Teacher self-efficacy beliefs sub-scales	**WS Reflections**	**WOS Reflections**
Efficacy in Student Engagement - How much can you do to:		
Get through to most difficult students	5	7
Help your student think critically	1	1
Motivate student who show low interest in school work	5	3
Get students to believe they can do well in schoolwork	0	1
Help your students value learning	2	2
Foster student creativity	3	0
Improve the understanding of a student who is failing	3	0
Assist families in helping their children do well in school	5	4
Total Student Engagement Items identified:	**24**	**18**
Efficacy in Instructional Activities - How well can you:		
Respond to difficult questions from your students	5	0
Gauge student comprehension of what you have taught	1	0
Craft good questions for your students	5	3
Adjust your lessons to the proper level for individual students	3	1
Use a variety of assessment strategies	1	1
Provide an alternative explanation or example when students are confused	3	2
Implement alternative strategies in your classroom	3	8
Provide appropriate challenges for very capable students	3	0
Total Instructional Strategy Items identified:	**24**	**15**
Efficacy in Classroom Management - How much can you do to:		
Control disruptive behaviour in the classroom	4	5
Make your expectations clear about student behaviour	3	0
Establish routines to keep activities running smoothly	4	2
Get children to follow classroom rules	3	0
Calm a student who is disruptive or noisy	3	1
Establish a classroom management system with each group of students	2	2
Keep a few problem students from ruining an entire lesson	2	2
Respond to defiant students	4	2
Classroom Management Items identified:	**25**	**14**
Total Items identified:	**73**	**47**
Total number of words	**3 834**	**2 762**
Average number of words	**183**	**132**

It appears that the items which neither group of students were focussed upon with respect to their efficacy were: “Help students to think critically”; “Gauge student comprehension of what [they] had taught”; “Get students to believe they can do well in their school work”; or “Use a variety of assessment strategies”. However, there was a distinct preoccupation in both groups with the beliefs they held in relation to their abilities to: “Get through to the most difficult students”; “Craft good questions”; and “Control disruptive behaviour in the classroom”. This focus, on self rather than students’ learning, may be explained in terms of the developmental stage of education students, in the light of their recent practicum and at the mid-point of the degree (Furlong and Maynard 1995). BEd students appear to lack a “key building block” in developing self-regulated learning: the mastery skill of monitoring their learning and teaching (Isaacson 2006:40). Finally, Table 1 demonstrates that WOS students’ reflections tended to overlook key items within the three teacher efficacy sub-scales: (i) in Student engagement, “fostering creativity” and “improving the understanding of students who are failing; (ii) in Instructional strategies, “responding to difficult questions”, “gauging students’ comprehension” and “providing appropriate challenge”; (iii) in Classroom management, “making explanations clear” and “getting students to follow classroom rules”. The inability of student teachers to focus on the diversity of their students’ learning needs, and to identify and set classroom management goals, has ramifications for their students’ learning. It appears that students were less engaged and took a narrower view when their written reflections were not scaffolded.

In addition to the quantitative differences between the two groups, there are significant disparities in the qualitative nature of the reflections. Analysis of students’ reflective writing identified that the quality of students’ thinking varied according to the level of support given. Table 2 unpacks the structure of the written reflections in terms of the 3W conceptualisation, which drew from Anderson & Krathwoh’s (2001) revised Bloom’s taxonomy. Reflections utilising the “Reflection for Action 3Ws Approach” (i.e. WS) integrated 158 items compared to 88 WOS reflections, almost double the number of items. The scaffolded reflections had, on average, 70% more items recalled, and these were qualitatively different, with 30% more analytical comparisons made, four times as many explicit goals and double the number of generalised goals set.

WOS reflections were predominantly “descriptive writing”, a recalling or listing of changes in efficacy, often generalised rather than specific, and with no attempt made to explain or analyse. For example, “my self-efficacy in my teaching abilities has changed”, “in regards to getting through to students I believe I have a stronger efficacy”, and “I now better see the skills I require to develop specialised questions for students…”. Also lacking in the un-scaffolded reflections is the propensity to internalise a locus of control, develop a positive “theory of action” (goal) or empowering self-efficacy beliefs for engaging and instructing difficult students. This student appears to be disempowered by the difficulties faced on the practicum:

> my ability to have an effect on my student’s learning was quite different between the two surveys. The first one shows how I believed that I can have a significant impact on students’ learning, self-efficacy and behaviour in the classroom. My prac was rather difficult with some students and now I feel that sometimes there isn’t a lot you can do for students who don’t want to learn

Alternatively, in scaffolded reflections students were three times more likely to move from descriptive writing into “technical and/ or descriptive” (“single-loop”) reflections, enabling students to problem-solve, take control, and affirm their efficacy for engaging students. For example,

> Between Phase 1 and 2 I have changed in my belief about how I can get through to difficult students…This has changed because I have learnt …that each child is an individual and there is so much help I can give to students…I need to get to know their backgrounds… and [when planning my lessons] each child will be catered for in their own way. I am glad I have changed my opinion about students. This has reflected on how they are treated

Neither the scaffolded or un-scaffolded reflections provided any evidence of "critical" reflection ("double-loop" learning) in their written reflections. Developing the literature review further since devising the scaffold has highlighted the limitations of the scaffold. It failed to explicitly seek critical thinking. Had these education students been made cognisant of the full range and purposes of reflection, some may indeed have developed critical reflections. This highlights a focus for future study.

Table 2. Quantitative measure of qualitative approaches within written reflection

Reflection strategies	**Reflections WS**	**Reflections WOS**
What happened? (Recalling)	78	45
Why did it happen? (Analysing)	36	28
Where to from here?		
Creating- explicit goals	28	7
Creating- general goals	16	8
Total strategies	**158**	**88**

Since the TSE Scales provided students with purely technical items on which to reflect it is unsurprising that the focus was on the technical. The majority of WS reflections (almost 80%) were descriptive and dialogic in their approach to analysing the technical Items more explicitly. For example:

> "Due to being out on prac. My experiences developed my …efficacy as a teacher in the classroom. I have learnt that to engage student's attention you have to make teaching relevant, enriching and practical, also, I had to know the students' personal backgrounds to teach them effectively.

The remaining 20% were either descriptive writing in very generalised terms or a recall of some changes without any analysis. For example: "The unchanged opinions from this survey have provided insight into what I believe is important and what I can do as a teacher. Due to the results…I must believe that as a teacher there is a great deal of things we can do in almost every situation".

In contrast, about 50% of WOS reflections were descriptive in nature, but were on the whole more generalised ("I feel most of my weaknesses were in the area of classroom management but after my 3 week prac. My confidence was much higher due to a great supervising teacher"). 30% focussed on recalling with limited or no higher order thinking, and 20% were of high modality (a venting of frustrations or "missionary zeal"),

without any attention being paid to individual Items on the TSE Scale. For example, "I realised that no matter what you do as a teacher some children do not want to be helped" or "Regardless of my marks, in my own heart, I believe I can make a successful primary teacher!"

Case Studies. In this final section of results and discussion, two case studies have been included to provide an insight into the qualitative similarities and differences of reflections, WS and WOS. A variety of elements from the QT (2003) dimensions, and Bloom's cognitive strategies, can be identified to varying degrees in these reflections. The cases were chosen because they provide an example of the structure and thinking characteristic of the two categories.

In **Case Study 1**, the WOS reflection is a piece of descriptive writing. A heightened level of self-esteem and a certain "missionary zeal" are displayed, but the writing lacks: (i) an understanding of reflection, (ii) any insights into specific self-efficacy beliefs in response to the two TSEs, (iii) any higher order thinking, (iv) evidence of self-monitoring or self-regulation, (v) any links between theory and practicum, and (vi) a realistic appraisal of the realities of teaching and what happens when "the going gets tough". Despite this, the student's espoused "theory for action" identifies the importance of "teacher beliefs" and the impact this has on students' learning. However, for this piece to move from "descriptive writing" to "technical" or "descriptive" reflection, it would need to explicitly analyse a "theory in use" (action), and demonstrate a synthesis of thinking (explicit goal setting) for future action.

Case Study 1: Exemplar of WOS Reflection

> "Wow"! It is really interesting to look back at the Surveys … I can see that the practicum experience made me realise that I still have some things to learn and develop in my teaching profession…Teaching is something I look at with great confidence…this survey reflects that! It goes without saying that what a teacher believes about their own abilities and the abilities of the students will have a great impact on the way students learn and interact with each other [theory of action]! … Teaching is not just about having figures in your head; it's about connecting with students, where they are at in the world [theory of action]!

In **Case Study 2** there is reference to, and evidence of, (i) a growing sense of efficacy in classroom management and instructional practices, especially in terms of collaborating with students to establish rules and routines, and keeping in mind the purpose of assessments, (ii) significant connections between "theory of action" and "theory-in-use" with the practicum experience, (iii) analysis, evaluation and goal setting in terms of problem-solving classroom management and pedagogical practices, (iv) self-monitoring and self-regulation, and (v) drawing on the expertise of role models. The reflection demonstrates professional growth in competencies in terms of the NSW IT Professional Standards and intra-personal skills. The "Reflection for Action-3W's Approach" scaffold appears to have provided a meta-cognitive tool to assist the student to develop a reflection that is both "technical" (focus on self and task) and "descriptive" (incorporating own reference to "best practice") in nature.

Case Study 2: Exemplar of WS Reflection

> I felt confident about how much effort I was willing to put in to show my students what's expected of them in terms of behaviour … This happened because of my goals as a future teacher. I want my

> students to learn, I don't want to spend time managing behaviour in the classroom [theories of action]. So, with my students, I collaborated towards finding common ground…we formed rules and consequences together … [theory-in-use].
>
> I [thought] I was certain of the variety of assessment strategies and how I could use them [theory of action], but that did not go into my long-term memory when I set a pen-and-paper-test [theory-in-use leading to the identification of an incongruity]. In future … with many more opportunities to observe experienced teachers on prac. I would be a lot more confident about assessing my students. I must … keep in mind that assessing my student can tell me something about my teaching strategies and effectiveness [new theory of action].

Conclusion

"Teaching is a highly complex profession. The demands on teachers are diverse and often intense and appear to be continually growing in response to expansions in the knowledge base, technological developments and changes in society" (Commonwealth Government of Australia 2007). Providing high quality teacher education that equips teachers to meet these demands is fundamental and achievable. This research points a potential way forward by presenting a case for deliberately integrating intra-personal and professional competencies.

Although limited in scope, this study demonstrated that the intervention of a simple scaffold assisted students to extend their thinking from predominantly "descriptive writing" into technical and descriptive reflection (single-loop learning). Further longitudinal research into integrating an explicit focus on reflection is recommended, in particular a deliberate move to critical reflection (double-loop learning), in teacher education. Teacher education students, with explicit support, can begin to self-regulate their learning as teachers by systematically building their own "theories-of-use". The ability to make causal attributions (analyse), adapt their teaching in the light of new knowledge (the synthesising of new goals) and modify their self-efficacy beliefs (Isaacson 2006:40) ensures potential graduates have the intra-personal competencies essential to enhancing the individual's professional attributes (NSW IT Professional Standards 2005).

Major findings in this research point to the benefits of scaffolding (second year) BEd (Primary) students' reflective writing: Firstly, because higher quality student outcomes are achieved in terms of deeper knowledge and understanding, and the ability to apply higher order thinking to problem solve and set goals; secondly, as it increases the level of students' engagement with their reflective writing, and enhances self-regulatory knowledge and skills; and finally, because students are more able to integrate their existing knowledge with new experiences, making crucial links between their knowledge, teacher self-efficacy beliefs and developing professional expertise as teachers (QT NSW DET 2003).

References

Anderson, R. M. , Greene, M. & Lowen, P. 1998, 'Relationships between efficacy and the instructional practices of special education teachers and consultants', *Teacher Education and Special Education*, vol.17, pp.86-95.

Anderson, L.W. & Krathwohl, D.R. 2001, *A Taxonomy for Learning, Teaching and Assessing*, Longman, Sydney.

Argyris, C. & Schon, D. A. 1982, *Theory in Practice: Increasing Professional Effectiveness*, Jossey-Bass, London.

Ashby, W.R. 1952, *Design for a Brain*, Wiley, New York.

Ashton, P. 1984, 'Teacher Efficacy: A motivational paradigm for effective teacher education', *Journal of Teacher Education*, vol.35, no.5, pp.28.

Ashton, P. T. & Webb, R. B. 1986, *Making a Difference: Teachers' Sense of Efficacy and Student Achievement*, Longman, New York.

Bandura, A. 1976, 'Self-efficacy: Towards a unifying theory of behavioural change', *Psychological Review*, vol.84, pp.191-215.

Bandura, A. 1993, 'Perceived self-efficacy in cognitive development and functioning', *Educational Psychologist*, vol.28, pp.117-48.

Bandura, A. 1997, *Self-efficacy: The Exercise of Control*, Freeman, New York.

Berman, P., McLaughlin, M., Bass, G., Pauly, E. & Zellman, G. 1997, Federal programs supporting educational change: Vol. VII, Factors affecting implementation and continuation, CA:RaAN, (ERIC Documentation Reproduction Service 140 432), Santa Monica.

Bullock, A. A. & Hall, P. P. 2001, Developing a Teaching Portfolio: A Guide for Pre-service and Practicing Teachers, Merrill Prentice Hall, Upper Saddle River, N.J.

Chapman, L. 2003, UNE Graduate Attributes: Resource guide integrating graduate attributes into undergraduate curricula, University of New England, Armidale.

Chester, M. D. & Beaudin, B. Q. 1996, 'Efficacy beliefs of newly hired teachers in urban schools', *American Educational Research Journal*, vol.33, no.1, pp.233-257.

Commonwealth Government of Australia, 2007, *Top of the Class*, Report on the Inquiry into Teacher Education, AGPS, Canberra.

Dewey, J. 1933, *How we think: A Restatement of the Relation of Reflective Thinking to the Educative Process,* D.C. Heath, Boston.

Emmer, E. & Hickman, J. 1990, 'Teacher decision making as a function of efficacy, attribution and reasoned action', paper presented at the *Annual Meeting of the American Educational Research Association*, Boston, MA.

Evans, E. D. & Tribble, M. 1986. Perceived teaching problems, self-efficacy, and commitment to teaching among student teachers, *Journal of Educational Research*, vol.80, pp.81-85.

Furlong, V. J. & Maynard, T. 1995, 'Mentoring student teachers: the growth of professional knowledge', Routledge, London, New York.

Gibbs, C. 2003, 'Explaining effective teaching: self-efficacy and thought control of action', *Journal of Education Enquiry*, vol.4. no.2.

Gibson, S. & Dembo, M. 1984, 'Teacher efficacy: A construct validation', *Journal of Educational Psychology*, vol.76, pp.569-582.

Harrison, J.K., Lawson, T. & Wortley, A. 2005, 'Mentoring the beginner teacher: Developing professional autonomy through critical reflection on practice', *Reflective Practice*, vol.6, no.3, pp.419-441.

Hatton, N. & Smith, D. 2006, 'Reflection in teacher education: Towards definition and implementation', The University of Sydney. Retrieved June 2007 from http://alex.edfac.usyd.edu.au/LocalResource/originals/hattonart.rtf

Henderson, M.V., Hunt, S.N. & Wester, C. 1999, 'Action research: A survey of AACTE-member institutions', *Education*, vol.119, pp.663-667.

Henson, R.K. 2001, 'Relationship between preservice teachers self-efficacy, task analysis, and classroom management beliefs', *Annual meeting of the South-west Educational Research Association*, New Orleans, LA, February.

Invargson, L., Elliot, A., Kleinhenz, E. & McKenzie, P. 2006, *Teacher Accreditation: A review of national and international trends and practices*, Teaching Australia: Australian Institute for Teaching and School Leadership Ltd, ACER.

Isaacson, R. M. & Fujita, F. 2006, 'Metacognitive knowledge monitoring and self-regulated learning: Academic success and reflections on learning', *Journal of the Scholarship of Teaching and Learning,* vol.6, no.1, pp.39-55.

Jones, M. A. 2007, “Learner-Teacher-Learner” Model, School of Education, University of New England, Armidale, Australia.

Jones, M. A & Maxwell, T.W. 2007, 'Scaffolded and unscaffold reflection on Bachelor of Education students’ learner self efficacy', paper presented at the annual *Australian Association for Research in Education (AARE) Conference*, Fremantle, November.

Lennox, D. 1991, *See me after school*, David Fulton, London.

Mezirow, J. 1981, “A critical theory of adult learning and education”, *Adult Education,* vol.32, no.1, pp.3-24.

NSW DET (New South Wales Department of Education and Training) 2003. Quality Teaching in New South Wales public schools, NSW Department of Education and Training, Professional Support and Curriculum Directorate, Ryde.

NSW IT (New South Wales Institute of Teachers) 2005, Professional Teaching Standards. Retrieved April 2006 from www.nswteachers.nsw.edu.au/

Pajares, M.F. 1992. “Teachers’ beliefs and educational research: Cleaning up a messy construct”, *Review of Educational Research*, vol.62, pp.307-332.

Pajares, M. F. 2004. Self-efficacy Beliefs in Academic Contexts: An Outline. Retrieved 28 October 2005 from http://www.emory.edu/EDUCATION/mfp/efftalk.html

Pajares, M.F. 1992, 'Current directions in self-efficacy research', in *Advances in Motivation and Achievement*, eds M. Maehr & P.R. Pintrich, JAI Press, Greenwich, CT, pp.1-49.

Poulou, M. & Norwich, B. 2002. 'Cognitive, emotional and behavioural responses to students with emotional and behavioural difficulties: A model of decision-making', *British Educational Research Journal*, vol.28, no.1, pp.111-138.

Reid, B. 1993, ' ‘But we’re doing it already’: Exploring a response to the concept of reflective practice in order to improve its facilitation', *Nurse Education Today*, vol.13, pp.305-309.

Ross, J.A. 1992, 'Teacher efficacy and the effect of coaching on student achievement', *Canadian Journal of Education*, vol.17, no.1, pp.51-56.

Schon, D. 1983, *The Reflective Practitioner: How Professionals Think in Action*, Basic Books, New York.

Schon, D. 1987, *Educating the Reflective Practitioner*, Jossey-Bass, San Francisco.

Schulman, L. 1987, 'Knowledge and teaching: Foundations of the new reform', *Harvard Educational Review*, vol.57, pp.1-22.

Smith, D. & Hatton, N. 1992, 'Towards critical reflection in teacher education', paper presented at the *Annual Conference of the Australian Teacher Education Association*, Ballina, July.

Smith, D. & Lovatt, T. 1991, *Curriculum: Action on Reflection*, Social Science Press, Wentworth Falls.

Tschannen-Moran, M., Woolfolk Hoy, A. & Hoy, W. 1998, Teacher Efficacy: It's Meaning and Measure, *Review of Educational Research*, vol.68, no.2, pp.202-248.

Tschannen-Moran, M. & Woolfolk Hoy, A. 2001, 'Teacher efficacy: Capturing an elusive construct', *Teaching and Teacher Education*, vol.17, pp.783-805.

Van Manen, M. 1977, 'Linking ways of knowing with ways of being practical'. *Curriculum Inquiry*, vol.6, pp.205-228.

Vygotsky, L.S. 1978, *Mind in society: The development of higher psychological processes*, Harvard University Press, Cambridge, MA.

Weiner, B. 1972, 'Attribution Theory: achievement motivation, and the educational process', *Review of Educational Research*, vol.42, pp.203-215.

Weiner, B. 1994, 'Integrating social and personal theories of achievement striving', *Review of Educational Research*, vol.64, pp.557-73.