INITIAL TEACHER EDUCATION AND THE NEW ZEALAND CURRICULUM

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ABSTRACT *New Zealand teacher educators are faced with the challenge of how to prepare their student teachers to become beginning teachers who are able to base their teaching upon the national curriculum. To meet this challenge, designers of initial teacher education (ITE) programmes need to consider the interface between ITE curriculum and the legislated curriculum for schools. This paper looks at some of the historical influences upon the curriculum in both initial teacher education and schools by examining wider contextual influences. We point out that in ITE there has been an ongoing search for the most appropriate knowledge base for teaching, a search that is made problematic due to differing views of knowledge, teaching and learning We argue that in spite of these differences, there is benefit in an ITE curriculum that has a close relationship with the school curriculum in terms of what is learned and the teaching and learning approaches. New Zealand has a revised national curriculum for schools (Ministry of Education, 2007) that schools are expected to implement from 2010. In preparing student teachers to become beginning teachers, ITE providers are in a phase of designing learning experiences that link ITE curriculum and school curriculum. This process is problematic, for there are various internal and external pressures that lead to a crowded ITE curriculum and challenge ITE autonomy and innovation in curriculum decision-making.*

KEYWORDS

Initial teacher education, curriculum, school curriculum, curriculum design and development.

INTRODUCTION

One of the aims of initial teacher education (ITE) in New Zealand is to prepare student teachers to become beginning teachers who can implement the national school curriculum. Recently the New Zealand school curriculum was revised and *The New Zealand Curriculum* (Ministry of Education, 2007) replaced the previous *New Zealand Curriculum Framework* (Ministry of Education, 1993) and associated curriculum area statements developed from the early 1990s. The revised curriculum was issued to schools in late 2007 and is scheduled for implementation from 2010. As a result, ITE and schools are in a transition phase between the new and the previous national school curriculum. ITE providers face design and epistemological decisions about what is taught regarding the new school curriculum and the associated teaching and learning approaches. A major challenge is to align the

initial teacher education curriculum with the school curriculum in a way that supports the autonomy of both sectors.

This paper examines the connections and interface between ITE and the school curriculum. It begins by surveying the broad context related to the curriculum of ITE, internationally and nationally. It covers the emergence of demands for teachers in schools to assume responsibility for a wider number of functions and the resultant pressures upon ITE curriculum. It outlines the recent revision of the New Zealand school curriculum and discusses some issues that impact upon ITE. The paper acknowledges that when ITE is discussed, it is often assumed that ITE covers just the time spent doing the qualification prior to becoming a beginning teacher. In the case of New Zealand we prefer to use ITE as a term that also covers the two years of beginning teacher induction (provisional registration period) leading to registration.

THE CONTEXT

The task of ITE providers is to provide student teachers with essential knowledge needed to practice in classrooms as beginning teachers. Unsurprisingly, there has long been debate about the essential knowledge required and critics of ITE have argued various shortcomings in what student teachers have learnt and can apply (Cameron, 2007). On the other hand, there is evidence to support a long held assumption that ITE teachers do, indeed, have a positive impact upon student teachers and beginning teachers (Grudnoff, 2007) and once in schools beginning teachers have positive impacts upon a range of learning outcomes for their students. Meta analyses of research on the links between teaching and learning (Hattie & Marsh, 1996; Hattie, 2009) show that teachers are the most influential *in-school* factor in students' academic achievement. There is a clear implication for ITE providers. ITE students need to be given appropriate learning experiences to start them on the journey to acquiring the expertise that will eventually enable them to provide such an influence upon their students. Regarding the school curriculum, ITE provides effective experiences through two major directions, teaching subject content and teaching an understanding of how children learn and can be effectively engaged in learning (Berliner, 2001). A best evidence synthesis of quality teaching (Alton-Lee, 2003) reviewed international literature on teaching and found ten characteristics that are related to effective teaching. Preparing teachers to learn and exhibit these characteristics is a major challenge for ITE.

Although the main focus of this paper is on the links between ITE and school curriculum, it needs to be recognised that both contexts are complex. ITE curriculum as a whole covers a wide range of content that is seen as relevant and necessary for neophyte teachers to learn. School curriculum includes the official national curriculum documents, a school's designed programmes that grow from them, and the implemented curriculum of classrooms (McGee, 1997). Both require teachers to possess a combination of pedagogical knowledge (Shulman, 1987) and skills, and subject content that are known to be linked to positive impacts upon students (Rice, 2003). Thus it is increasingly recognised that the ITE curriculum deals with many interacting components (Cameron, 2007).

ITE curriculum

Internationally, Darling-Hammond (2006) has discussed this interacting complexity and has theorised that the best ITE curriculum should be concerned with three crucial qualities and components: first, tight *coherence and integration* among papers and between coursework and clinical work (practicum) in schools; second, extensive and intensively *supervised clinical (practicum) work* integrated with coursework using pedagogies that link theory and practice; and third, closer, *proactive relationships with schools* that serve diverse learners effectively and develop and model good teaching. It can be argued that the second and third of these qualities are well attended to in New Zealand. However, the first quality of coherence is problematic and remains a challenge for ITE. Before coherence and integration can happen there needs to be more specific agreement upon both the core content of ITE and the organisational and teaching arrangements for student learning experiences. Teacher educators seem to struggle to reach agreement over these matters. Lawton (1990) has outlined how in the United Kingdom teacher educators have, over many years, failed to agree on the core knowledge that should be the basis of effective ITE programmes. The flow of information between the Ministry of Education and university ITE providers has decreased as the Ministry defers to the autonomy of universities. University providers need to be proactive to receive up to date information regarding ITE.

This lack of consensus has put teacher educators in a vulnerable position when it comes to producing evidence that might be used in defending themselves against criticisms or advocating for ITE in terms of what should constitute essential core components. Lawton noted that in the UK in the 1980s there was a power struggle for the control of schooling and ITE between three major factions: politicians with a neoliberal market-driven agenda of freedom of choice; bureaucrats (civil servants) driven by administration and efficiency; and professionals (the inspectorate, for example) who advocated standards and quality. Applied to ITE, the model suggests that the politicians would like to keep up a supply of teachers at minimal cost, the bureaucrats would prefer clear-cut criteria for ITE entrants and their ITE qualifications, and the professionals would advocate improved ITE programmes and closer links with schools and further in-service teacher education. The relevance for New Zealand is not hard to see. There have been international attempts to considerably shorten ITE programmes and in some cases allow graduates to teach without any ITE.

Teacher educators in New Zealand have, over the years, been in a weak position over the ITE curriculum. For many decades of the twentieth century teacher educators actually had little say in what was taught. The curriculum of teachers' colleges was regulated centrally by the Department of Education. For example, only a few decades ago the Training College Regulations of 1959 set out the requirements for all courses. The two year primary course was to cover first, compulsory studies in spoken and written English, education (including principles and practice of teaching), child development, the context and curriculum of the primary school and "the general theory of education", physical and health education and music: and second, optional content and curriculum studies at two levels in

subjects relevant to primary school curriculum (*Report of the Commission on Education in New Zealand*, (Government Printer, 1962)). The same report commented upon the pressure on teacher educators to cover the curriculum in sufficient depth in the two years of the pre-service course, and recommended extending the duration to three years, which became policy soon after. Policies of resourcing the delivery of an ITE curriculum were largely developed through negotiations between teacher education leaders and the Department of Education. Following the Commission's report each teachers' college was eventually governed by its own council and in university centres student teachers had greater access to university papers, a precursor to the current situation of amalgamations between six universities and the nearest teachers' college.

Not surprisingly, in the last few decades teacher educators have felt the increased pressures of an overcrowded ITE curriculum. The knowledge base relevant to teacher preparation has increased hugely. It is now recognised that teachers need to *know* many more things and *do* many more things in their work than was the case in the past. Pressure groups across society advocate for the inclusion of all manner of things in the school curriculum and each success means more is added to ITE. Schools call for more and more "musts" a beginning teacher needs from the time they begin their first teaching position (Langdon, 2007), even though they are inductees. In the face of these demands from the profession and wider pressure groups there is ongoing concern about how much can be included in any ITE programme without overload and superficial coverage. And there is concern about just how much a student teacher can be realistically expected to know upon graduation.

The escalation of knowledge is not just a matter of quantity. The fundamental issue is the *worth* of knowledge and whether particular knowledge justifies inclusion. For example, there have been many international developments in teaching and learning that inevitably impact upon New Zealand teacher educators and the curriculum they teach. Theories abound as to the best ways to teach and learn. Unless studied thoroughly, at worst there are credible approaches that can be misunderstood and become ill-defined "bandwagons" such as (unfairly) child-centred learning and inquiry learning. ITE needs to do better. It is now widely recognised that it is not enough to be knowledgeable of subject content and have a smattering of teaching techniques; rather, a complex mix of professional learning is required to make effective curriculum-related decisions (Putnam & Borko, 2000). One of the most influential theories of teacher knowledge is Shulman's (1987) model of categories of teacher knowledge:

- content or subject matter knowledge;
- curriculum knowledge that includes knowing about resources and how to use them;
- general pedagogical knowledge such as principles and techniques of how to organise and manage classrooms;
- pedagogical content knowledge, that is a combination of subject content and teaching techniques unique to teachers;
- knowledge of learners' characteristics and how they learn;

- knowledge of educational contexts such as the classroom, school and school community, and policy; and

- knowledge of educational ends and purposes, values, and historical and philosophical influences upon teaching.

These categories are useful in drawing attention to parts of the complex sum of teacher knowledges but they do not stand-alone. They are inextricably linked. As Grossman and Schoenfeld (2005) point out, in reality the boundaries between these knowledges can be hard to distinguish because they overlap; nevertheless, they assist in designing the content and structure of teacher education programmes. We shall refer later to Shulman's subsequent work that has recognised the complexity of how teachers learn teacher knowledge.

A major challenge for both ITE programmes and teachers in schools is the integration of the different knowledges. To meet this challenge teacher educators need to combine their own subject knowledge with effective ways of engaging with student teachers who in turn, will engage with their own school students. Thus, the goal is to combine what is known about the theory and techniques of teaching and learning in relation to the content of the ITE curriculum. Content knowledge on its own is not enough for student teachers. *Pedagogical knowledge* provides student teachers with a body of knowledge about teaching and learning and ways of organising, managing and facilitating in classrooms to maximise learning opportunities.

What then, are the most meaningful and authentic ways of designing classroom learning experiences? The answers are complex and varied, and teachers and teacher educators have developed their own preferred beliefs and approaches, not always supported by evidence of success. Over many decades, initial teacher educators in New Zealand have been influenced to varying degrees by major international advances in the foundational fields of education and by the developers of teaching and learning models or approaches. It may be a timely reminder to refer to just some of these many approaches along with major early proponents that have influenced New Zealand education (for these and many more see Holt & Kysilka, 2006):

- classroom organisation and management (Lee and Marlene Canter);

- teacher-centred approaches, e.g. mastery learning (Robert Gagne; Benjamin Bloom);

- teacher-student interactive patterns, e.g. cooperative learning (David and Roger Johnson); role play (Fannie Shaftel);

- student-centred learning, e.g. self-taught instruction (Abraham Maslow, Bruce Joyce, Lawrence Kohlberg);

- memorisation of information skills (Jerry Lucas); and

- learning concepts through inquiry and questioning (Jerome Bruner, J. Richard Suchman, John Dewey).

In our experience New Zealand teachers rarely, if ever, use just one teaching and learning approach. Rather, their teaching is an eclectic mix, even when one "model" is favoured. Theories of learning have influenced teaching approaches and

Barker (2008) provides an overview of major groups of theories that contribute to an understanding of links between curriculum content and teaching approaches. Early behaviourist, humanistic and stage theories of learning came to dominate teacher education for much of the twentieth century. In the second half of the century social constructivist and socio-cultural learning theory became widely known, accepted and applied, premised upon the view that students individually construct and organise knowledge heavily influenced by the social and cultural contexts in which the learning occurs. The work of cognitive constructivists like Piaget (Gage & Berliner, 1998) has influenced educators to look for different ways of organising learning experiences in relation to a theory of learning stages. Socio-cultural constructivist views of knowledge have influenced teachers to give more importance to the social-cultural context in which learning occurs. An example of a key concept for teacher education is the *zone of proximal development* (ZPD*),* as applied to problem solving that is aided by a child working with adults such as a teacher or parent in particular systematic ways (Vygotsky, 1978). Academic skills for reading and mathematics (and presumably other curriculum areas) are enhanced by capitalising upon the interactions within a child's cultural and social setting.

Learning in groups and cooperative learning have long been advocated (Gage & Berliner, 1998). Situated learning (Lave & Wenger, 1991), communities of learners and practitioners (Sewell & St George, 2008) and online communities of learners (Keown, 2009) are also relevant concepts with associated practices for teacher educators and schoolteachers alike. Student teachers need to consider the rationale, beliefs, practices, benefits and drawbacks of major approaches. For example, Sewell and St George (2008) have outlined the characteristics of a school classroom as a community of learners and educational benefits such as the development of agency, a sense of belonging, cohesive interrelationships and a growing sense that diversity among students can be positive rather than a threat. Nevertheless, they warn of possible constraints of communities such as undue conformity, a danger of the development of "in groups" and "out groups", a reduction in teacher expectation in the face of the need for a 'warm glow' ethos (p. 216). In addition, there are times when a classroom needs to be structured differently, such as the administration of a formal test.

These examples show the challenge of achieving agreement among teacher educators about the teaching approaches that "should" be part of the ITE curriculum. Indeed, it can be argued that we do not need universal agreement, for there is much to be gained from a continuing search for effective ways of designing and "packaging" curriculum for learners to meet different objectives. Lee Shulman (Shulman & Shulman, 2004) has reviewed his typology of teacher knowledge referred to earlier. The categories were "constructs that were cognitive and individual" (p. 258) and while useful, they underplayed *how* teachers learn. With Judith Shulman, he has worked more recently on the possibilities of teachers learning in communities to better connect different elements of a general teaching theory: vision, motivation, understanding of concepts and principles of teaching, teaching skills, and reflection. In a proposed model they recognise that any analysis of teacher learning and knowledge needs to consider the levels of the individual, the community of teachers and the wider policy and resources level. The community

level highlights the role of a shared vision and knowledge use along with community commitments and practices for joint reflection and review. The concept of capital is used as a necessary enabler of teachers' work at the latter wider level, for example in the provision of resources and curriculum. The content of teacher education and how it is learned, then, is complex indeed.

Debates about ITE curriculum

The history of teaching and curriculum developments raise the question of how teacher educators teach. It is one thing for teacher educators to teach *about* these many advances. It is another to engage student teachers meaningfully in the study of emerging knowledge and associated professional practices. The emergence of reflective practice is an example (Schon, 1983). Loughran (2004) has noted that in spite of the popularity of reflective practice among teacher educators in the 1980s, it was at least a decade later before a growing number began to embrace the realisation that their credibility was raised when they practised what they were urging their students to do, that is, model what they "preached". To this end the field of *self study* has emerged as an influential movement. Teacher educators have committed to build upon reflection, first to understand their own practice and second, to model and experiment. Loughran (2004) was adamant that self study was not a soft option; rather, it should be rigorous and systematic inquiry into one's own teaching practice and provide models for student teachers. We would argue that in effect, changed practices become part of ITE curriculum. In the section on pedagogy in the 2007 NZC the notes on "teaching as inquiry" focus upon teachers inquiring into the impact of their engagement with students and their influence on student achievement.

Students enter school and tertiary settings with exposure to, and often advanced skills related to ICT and multimedia. This means new challenges for those designing teaching, learning and assessment tools. To keep up to date ITE educators need to see themselves as part of the emerging ITE curriculum and use video, narrative, artefacts, online data bases, podcasts, wikis, google docs and many more resources to help students make send of information and come to understand it.

Over 90 percent of ITE in New Zealand is now in universities. While each university has a large measure of academic autonomy with respect to academic programmes, quality assurance across New Zealand universities is maintained by a peer review approvals system through an academic programmes committee. University autonomy in teacher education is challenged (as in other professional programmes such as accounting and law) by the New Zealand Teachers Council that must also approve new ITE programmes and major changes to existing programmes. The Council also leads a regular round of external programme review that that evaluates the design and delivery of ITE curriculum. The broad guidelines of the Council for ITE curriculum are represented in the graduating teacher standards (New Zealand Teachers Council, 2008). There are seven standards. The first three are in the field of professional knowledge and cover knowing what to teach, knowing about learners and how they learn and understanding how contextual factors influence teaching and learning. Standards four and five are

called professional practice and cover using professional knowledge to plan for teaching and learning and using evidence of learning. The last two standards are grouped under professional values and relationships with students, communities and the teaching profession. Particular statements to elaborate each standard are reasonably broad and indicative of aspirations. They contrast with attempts in the 1980s and 1990s to break ITE curriculum into hundreds of highly specific skills and pieces of knowledge to be measured in unit standards; a development that threatened the necessary connectedness between different parts of ITE programmes.

The registered teacher criteria (New Zealand Teachers Council, 2009) are also somewhat broad. Eleven criteria are each linked to "key indicators" that give assessors the means to make judgements regarding suitability of provisionally registered teachers for full registration. Of significance is an introductory statement that reinforces the importance of connectedness and alignment:

> The Registered Teacher Criteria recognise that teaching is a highly complex activity, drawing on repertoires of knowledge, practices, professional attributes and values to facilitate academic, social and cultural learning for diverse educational settings. The criteria and indicators should be viewed as interdependent and overlapping. (p. 1)

In terms of ITE content, if the above standards and criteria are to be met a graduate from ITE is required to know a prodigious amount and exhibit many exemplary values, skills and practices. How might all of these things be fitted into the ITE curriculum? In an already overcrowded curriculum there are perils in "trying to do it all" by the time of pre-service graduation. To resolve this serious issue teacher educators and schools and the Teachers Council need to engage in dialogue over what is essential to know by graduation and what can be left to the provisional registration phase of beginning teaching and beyond. Within ITE institutions an overcrowded curriculum means competition for the scarce resource of time and in the politics of the struggle for time there can be winners and losers. Stephenson and Rio (2009) have argued that the foundational disciplines in education (philosophy, psychology, sociology and history) have suffered in relation to multiple other demands for time in ITE.

Of course, New Zealand is not alone in pursuing teacher standards. The Australian Council for Educational Research (2002) provides a comprehensive discussion of definitions and purposes for standards. It reports that different standards frameworks are required for different purposes, for example, pre-service preparation, induction leading to registration, and continuing professional development. It is argued that the teaching professions should be major participants in the development of these standards sets. In America the National Committee for Accreditation of Teacher Education (NCATE) (2008) is a major accrediting body for the United States Department of Education. NCATE is a coalition of 30 national associations and central to its mission is accountability and improvement. Leadership in reform in teacher education is another goal, and NCATE has developed a set of six groups of standards that are used in the accreditation of teacher education providers (and the standards are revised every seven-years). They are graded into "unacceptable", "acceptable" and "target". A focus of the

assessment is the performance of student teachers. In addition, NCATE has standards for beginning teaching specific to particular programmes such as teacher of a subject, elementary (primary), secondary, based upon the measure of "what a [science] teacher must know and be able to do.

In summary, New Zealand preoccupation with teacher education and teachers standards is linked to international attempts to apply standards to ensure acceptable teacher practices

THE REVISED NEW ZEALAND CURRICULUM

The *New Zealand Curriculum* (NZC) (Ministry of Education, 2007) designed for schools is the result of a period of analysis of the previous *New Zealand Curriculum Framework* (Ministry of Education, 1993) and the curriculum area statements designed and implemented in the 1990s and early 2000s. The NZC was a comprehensive revision, including the development of a new separate curriculum area, learning *languages* and a change from *mathematics* to *mathematics and statistics*. The NZC for English medium schools and *Te Marautanga o Aotearoa* for Māori medium kura were designed to "give schools the flexibility to actively involve students in what they learn, how it is taught, and how the learning is assessed …" (letter, Minister of Education accompanying NZC, 2007). Nevertheless, this spirit of autonomy is tempered by obligations that are currently playing themselves out, such as government imposition of standards in reading, writing and numeracy.

The main stated purpose of the national curriculum is "to set the direction for student learning and to provide guidance for schools as they design and review their curriculum." (Ministry of Education, 2007, p. 6). The first part (sometimes referred to as the "front end") of NZC contains a vision statement, principles, values to be "encouraged, modelled, and explored" (p. 10) and key competencies that are "capabilities for living and lifelong learning" (p. 12). The vision, principles and values are statements of aspiration and educational and philosophical direction. The vision statement advocates that the curriculum is to align with a national commitment to enable New Zealand students to be fully participating members of society able to contribute to a knowledge-based society. It argues that education "empowers" students to become confident, positive, entrepreneurial, enterprising, and resilient citizens who can help "make a difference" (p. 8) in their society, socially, environmentally and economically. The concept of lifelong learning is stressed. Key competencies (p. 10–11) are skills arranged in five competency clusters, in effect replacing the many skills listed in the previous curriculum and learning area statements.

Over the last two to three years, schools have been responding to the NZC to meet the requirement of implementation by 2010. One research study into early adopter schools has shown that in schools a new language of curriculum has developed, including terms like front end, key competencies, vision, inquiry, effective pedagogy, to name a few of them (Cowie, et al., 2009). Teachers experienced professional development and learning that influenced the meanings they attached to these terms. Evidence showed differences in meanings between and within schools, indicating how the curriculum is currently somewhat hypothetical

and unproven in terms of universal understandings. There was also evidence that in early adopter schools a lot of attention was given to what constitutes effective teaching as a co-requisite for understanding the front end of the curriculum document. In early adopter schools there had been regular curriculum review in the years before the 2007 NZC, often linked to Ministry of Education-sponsored professional development and learning in particular aspects of curriculum such as literacy, numeracy, ATOL (assess to learn project) and inquiry learning and teaching. There was evidence of a long-term impact and the use of this learning in teachers' work on the revised curriculum.

In the second part of the NZC there is a statement for each learning area that describes the content focus, justifies the worthiness of studying it and explains how the area is structured. Content and achievement objectives are arranged in eight levels that are designed for students to engage in progressively more sophisticated and challenging learning. Evidence from the Cowie, et al. (2009) research is that early adopter school leaders gave less attention to this part of the curriculum before 2010 because they wanted teachers to deepen their understanding of the intentions and aspirations of the new curriculum and explore their own teaching approaches in readiness to go on to design class programmes.

More broadly, in any national curriculum revision there are epistemological issues. Herbert Spencer's 1859 question "What knowledge is of most worth?" continues to challenge curriculum designers and indeed, politicians, the public and the education professions. While Spencer's answer to his own question put science in a preeminent position, the answer by the designers of NZC is that many subjects or disciplines are represented in a general education–organised into eight *learning areas*. While the scope of content makes for a broad general education, it presents a considerable problem for teachers, particularly those teaching in the primary years and having to teach most, or all, of the curriculum areas. There has been little, if any, analysis of whether it is actually *possible* for a "generalist" teacher to know enough content in all areas even though there was a reduction in the number of achievement objectives in 2007. Although it is argued that teachers' roles have shifted from mainly a dispenser of information to spending more time as a facilitator it is difficult to see how effective facilitation could occur without substantial content knowledge. How could advice be given to students on sifting and sorting computer-generated information as to quality, relevance and accuracy? Or advice on synthesising information from multiple sources?

Recently the coalition government launched a new national standards policy for Years 1–8 students in New Zealand schools. The standards are in numeracy and literacy. The impact of this policy upon schools and teachers should not be underestimated. It introduces a major tension between the implementation of a new national curriculum that encourages school-based initiatives in curriculum design and implementation, and a standards policy of mandated assessment and reporting in reading, writing and numeracy (Ministry of Education, 2009a, 2009b). The policy has been promoted in a way that might suggest to parents and the community at large that there were previously *no* standards, whereas New Zealand schools have always had standards in the form of prescribed content from the first national curriculum in the 1870s. Indeed, external assessment by Inspectors of Schools

either passed a student to the next standard or failed them and consigned them to a repeat year. For many decades governments funded texts in mathematics (including, of course, numeracy) and reading books organised into levels of reading proficiency and they—in effect—indicated the achievement students reached. Even so the difficulty of how to set and measure and report standards to the public has been demonstrated from time to time. For example, over 30 years ago a report to the Minister of Education by school inspectors noted that there was no simple way to measure and improve educational standards. If so, "it would have been discovered and applied before." (Department of Education, 1978, p. 105). The report also noted that the schools were not solely responsible and parents had a crucial role in improving their children's achievement and that "destructive criticism" of either parents or teachers "will not do the trick" (p. 105).

The impact of the standards policy upon ITE should not be underestimated. Inevitably, the attention of school leaders and politicians will turn to the preparation of teachers, and whether beginning teachers are ready to implement standards in line with school practices and government policy. ITE leaders will need to develop their own policy responses in terms of their ITE curriculum. Should the curriculum include content about the standards and if so, what approach will be taken? In the university setting it would be expected that coursework include analysis and critique of the rationale and mechanics of the New Zealand standards and guidance on the application of standards in school classrooms–matters that are complex and problematic. ITE politics within institutions may see demands for more programme time for numeracy and reading and writing, given the imperatives of national politics on standards in schools.

The standards policy should also be seen in relation to changes in the wider social context that need to be considered in ITE curriculum. Successive governments have, quite rightly, geared curriculum and teaching policy towards the goal of maximising all students' opportunities to learn in school. However, in the rhetoric of exhorting schools to do better, little is said about societal changes that negatively impact upon both children and teachers. For example, there is a widening gap between rich and poor, increasing numbers of children are from welfare-dependent families and there is a high rate of child maltreatment (Ministry of Social Development and Employment, 2008). Galton and McBeath (2008) point out that in the UK there have been increased negative impacts upon children from changing family relationships and parenting and growing levels of poverty that are associated with conflict and negative behaviour. They found increased discipline problems among school students that disrupted lessons and stressed teachers. Teachers recently rated coping with unacceptable student behaviour as the greatest problem they face. Frequent newspaper reports suggest a similar situation in New Zealand. Clearly, teachers and schools cannot alone transform student achievement in the face of influences outside their control. In secondary schools the external examinations have a narrowing impact upon the curriculum making it difficult to cater for the needs of a diverse student population.

LINKS BETWEEN ITE AND CURRICULUM IN SCHOOLS

The importance of links between ITE teachers and schools has long been recognised. For the purposes of this paper the links referred to are related to achieving better synergy between school and ITE curriculum. There are debates about whether schools should take a lead from ITE or whether schools are ahead in curriculum development and implementation. The *New Zealand Education Gazette* (APN Educational Media) has regular examples of schools involved in curriculum innovations across the curriculum. Also, aspects of technologies in some schools are ahead of ITE, e.g. the use of interactive whiteboards. In the next decade or so, the rapidly expanding use of ICT in the community and the growing use of ICT in schools is likely to have a huge impact on teachers' work and therefore, ITE. But policies and curricula, and digital content and services, while critical, will not ensure integration of ICT into the school curriculum. Teachers must also be prepared, resourceful, flexible and able to appreciate and incorporate ICTs into the teaching and learning process. (Ingvarson, Beavis, Kleinhenz, & Elliott, 2004). There is evidence that teachers and schools are looking to beginning teachers for ideas in this regard (Cowie, et al., 2008).

As noted earlier there is evidence from a study of primary and secondary schools that were regarded as early adopters of the NZC that schools were undertaking reviews of their teaching and learning approaches and the ways curriculum is designed for learners (Cowie, et al., 2009). There was renewed attention on how to develop teaching methods to cater for student diversity, the need for teachers to have good content knowledge, good student-teacher relationships, willingness of teachers and students to make decisions and take responsibility, and the development of skills to engage students in cooperative learning, group work, and self study. ITE teachers need to be aware of such developments, again showing that effective links are needed with schools.

Issues in ITE curriculum and school curriculum

A major issue for providers of ITE and in-service teacher education is the degree of curriculum alignment between the two. To what extent do ITE providers and school leaders agree over what a beginning teacher should know? This epistemological question lies at the heart of ongoing tensions and relates to the intentions and values of teacher preparation. There are grounds for seeing ITE as an enterprise to help student teachers advance their own learning in several major areas such as those stated by Shulman and outlined earlier. However, it cannot be assumed that school leaders and teachers agree. McGee, Oliver and Carstensen (1994) found that associate teachers had only a vague idea of what their student teachers were being taught in ITE in spite of being supplied with documentation, and tended to think ITE was like it was when they undertook it. This situation may have changed for associate teachers through professional development, but not for other teachers. Therefore, there is a potential disjunction in expectations that impacts upon the advice and guidance provided for student teachers.

Recent anecdotal evidence and research (Grudnoff, 2007) suggests that there is also a degree of disjunction between ITE providers and school leaders over the preparedness of ITE graduates. ITE providers argue that it is impossible for student teachers to learn all that is required in the time available and that ITE is merely the initial (although very important) phase of teacher preparation. Some school leaders appear to want someone close to "a finished product", who can assume more or less full responsibility for class(es) from the outset of beginning teaching, an issue Langdon (2007) identified. It is, therefore, important for all parties to be reminded that as in any other profession graduating from an ITE programme is just the first phase of—in this case—teacher preparation. It cannot be assumed that graduates will be beginning teachers who know and can do all that is expected of an experienced teacher. ITE is followed by a two-year phase of beginning teaching holding the status of "provisionally registered." An employing school is required to provide supervision and mentoring, supported by government resources. Documentary evidence is required to show whether full teacher registration should be granted by the New Zealand Teachers Council.

The curriculum of advice and guidance for provisionally registered teachers is contained in a publication by the New Zealand Teachers Council and the Ministry of Education (2006), *Towards full registration: A support kit.* One of the issues facing ITE providers is the alignment between this curriculum and the curriculum of ITE and indeed, the curriculum of professional development beyond registration. The latter is, at best, largely lacking in definition since the variation is enormous. Some Ministry of Education sponsored professional development is designated as part of a national school curriculum initiative such as numeracy and literacy. Much, however, is up to the school itself so it is impossible to assess any ITE–school relationship in terms of the impact of the preparation of teachers upon later professional development. Langdon (2007) studied primary schools that were providing effective induction for beginning teachers. She found that while school principals had, arguably, unreasonably high expectations of a beginning teacher, they also made sure that effective support and guidance was provided. There is evidence that not all schools made such an induction provision. Cameron (2007) reviewed research studies in New Zealand that showed there was considerable variability in quality of induction and a relationship between quality level and future teacher success and retention.

Alignment between the methods of curriculum implementation in schools and the methods used in ITE is another issue. In Australia, Ingvarson, et al. (2004) found that ITE programmes were emphasising aspects that relate directly to effective teaching: for example, subject matter knowledge, students' ways of learning and developing, curriculum planning, and skills for reflection on teaching practice. Areas that were receiving less emphasis were methods for assessing student learning and development and focused training in teaching skills using modelling and feedback. No New Zealand research was found on how student teachers develop assessment capability.

A further issue is how much school-related experience (practicum) there should there be in an ITE programme. Ingvarson et al. (2004) report this as a major issue across states in Australia, and the resolution is a "two-way" street. ITE

providers must initiate worthwhile experiences in schools based upon the ITE curriculum. Schools and teachers must identify and provide effective teacher mentors. Ingvarson et al. report a serious shortage of willing teachers in Australia who will provide mentoring. There is also the question of who from ITE should visit student teachers in schools. Cameron found (as many New Zealand ITE teachers will recognize) controversy over the relevance and quality of advice to student teachers and the credibility of ITE teachers in schools.

An ongoing challenge in ITE curriculum is the structure, coherence and time allocated to components in programmes, for example, time spent in schools, curriculum content, curriculum-related pedagogy, education and professional studies, and teaching approaches and skills. Regarding primary ITE programmes there needs to be ongoing debate and policy development on differentiation. Currently all primary student teachers cover curriculum content across years 1–8 and do practicum across those years. To open the way for more in-depth curriculum content and choice of preferred years to teach, perhaps student teachers should be able to specialize in particular years or particular learning areas. There are also associated debates about who should teach in ITE. To take just one aspect, there is a case for more school teacher employment for short-term (up to one year) teaching in papers in pedagogical knowledge and skills and practicum supervision. Perhaps teachers and ITE teachers should interchange more regularly between schools and ITE sites, although it is recognized that there are many practical difficulties in achieving this goal.

While there has been a growing number of research studies about ITE (Cameron, 2007) there is a need for further research into many aspects of ITE. More needs to known about the curriculum content learned by student teachers in ITE and how this relates to their teaching, how student teachers learn, including their attitudes to learning and their application of learning in teaching. The development of general approaches to teaching needs to be investigated, including influences from the education foundations papers and motivation for learning; and what student teachers understand about the school curriculum.

ITE and innovation

We have discussed the need for ITE providers to be aligned to schools and the national curriculum in their coverage of curriculum. As indicated earlier this requires deliberate steps to achieve authenticity in ITE learning experiences. However, ITE providers should avoid merely following what occurs in schools. It is our view that ITE academic staff should be *innovators* in curriculum design and implementation. Teacher educators are in a unique position to be innovators through their own scholarship and research in particular subjects and curriculum areas as well as pedagogical approaches and issues. While there has been a growing amount of research in mathematics, science and reading, the other curriculum areas are under-researched. Therefore, teacher educators need to survey the specific research gaps and plan studies that will address them.

When teacher educators are actively engaged in research they can have a major influence upon the curriculum of ITE and what student teachers learn and take into schools. For example, an investigation of student voice in health education revealed

that primary aged students knew more about health topics and issues than teachers and parents thought (Scratchley, 2004). The students could point to aspects of health that they wanted to learn, yet were not covered until later in the school curriculum. These findings caused teachers and teacher educators to review the topic sequence and timing in health programmes. Another example is a project *The Art of the Matter* (Fraser, et al., 2006) carried out by a group of teacher educators and primary school teachers. It explored teaching and learning in the arts curriculum, beginning with children's conceptualisations and ideas and extending into may factors that made art lesson complex and many-faceted. An important feature was the team approach that lead to open sharing and experimentation with ideas and approaches. A further example is an exploratory study into ways of helping student teachers develop pedagogical content knowledge (PCK) (Hume & Berry, 2010). The strategy involved content representations based upon experienced science teachers. Student teachers were encouraged to use representations to build their own PCK. It was a challenging task and took time and careful, systematic scaffolding.

To enhance alignment with schools there is a need for collaboration between ITE staff and teachers in schools, and particularly normal schools and secondary school departments and faculties. Collaboration reinforces the roles of particular teachers as teacher educators, for example when they act as associate teachers during practicum.

There is an important proviso that needs to be emphasized. Innovation requires a climate of openness and flexibility, institutionally and in people's minds. Within ITE institutions there are pressures upon ITE lecturers that may compromise their attempts to engage their students in the teaching approaches they wish to model and advocate. Staff–student ratios in universities are worsening, resulting in larger class sizes, and there is a trend towards more formal lecture presentations and fewer small-group tutorial sessions. As mentioned already ITE curriculum has become increasingly crowded meaning that ITE educators are facing challenges in topic coverage and issues with what to prioritise, leaving little time for innovation. There are also constraints caused by external demands such as the teacher graduating standards and government policies that could narrow the curriculum, such as numeracy and literacy standards. It can be argued that if ITE providers are overly constrained in what they teach, the relationship between research and teaching could also be compromised. We argue that there are pay-offs from research in terms of value to ITE curriculum. New knowledge is created through research and ITE gets the benefit if there is a close connection between research and teaching that impacts positively upon student teachers and eventually, school students and their families.

CONCLUSION

This discussion of the links between ITE and school curriculum comes at a time of major policy change. Schools have a revised curriculum to implement that offers greater flexibility for school professionals to exercise autonomy in curriculum decisions. On the other hand state policy on assessment, literacy, numeracy and standards is a constraining force on autonomy. The New Zealand Teachers Council

has identified the requirements for teachers graduating from ITE programmes, including an emphasis upon curriculum knowledge and teaching proficiency. Teacher educators cannot ignore these policy developments, for what affects schools also—inevitably—affects ITE policy and practices. ITE decision-makers are, therefore, in a challenging situation. University autonomy in ITE curriculum design is under pressure from both within the teaching profession regarding what a beginning teacher should know and be able to do, and from the teacher registration body, the Teachers Council that is obligated to ensure quality teachers for New Zealand schools.

This returns us to the urgent issue of an overcrowded curriculum, in both ITE and schools. Galton and McBeath (2008) have recently outlined what they see as a huge burden upon UK teachers caused by many curriculum demands. The demands have affected recruitment into teaching especially when linked with reports of increasing misbehaviour among students (and increasingly in New Zealand there are newspaper reports on this trend). We have described how the ITE curriculum is complex and crowded and how programme designers are under pressure to allocate more time to study existing content and add new content. This suggests that ITE programmes should be longer, yet we hear rumours of political desire to produce teachers faster. These two factors need to be weighed up. It is now widely acknowledged among the teaching professions and ITE providers that beginning teachers need to be thoroughly prepared to start their teaching and this takes time. On the other hand, even in relatively long programmes beginning teachers cannot know all there is to know about teaching. The two-year induction period is of crucial importance to allow neophyte teachers to learn more and refine teaching approaches, as is continuing professional development and learning beyond registration.

In this paper it has been argued that designing an ITE curriculum is complex and that ITE providers cannot ignore the external factors that influence their decisions. A fundamental premise of this paper is that there are advantages—in spite of concerns about external constraints—in establishing links between ITE and schools with respect to curriculum. Along with this, we take the view that there needs to be innovation and experiment in both schools and ITE in relation to curriculum. Both sectors need to design and test new approaches to the way curriculum is organised and planned, new approaches to teaching, and new approaches to how and what students learn. Some of this work can be undertaken through collaborative research projects that benefit from the different interests and expertise of teachers and ITE educators. Beyond that, mechanisms for sharing the findings from such explorations need to be found to achieve the goals of advancement in curriculum, teaching and learning and better links between ITE and schools.

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