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Doctoral thesis Abstracts

Grappling with the complexity of the New Zealand Curriculum: Next steps in exploring the NZC in initial teacher education

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Abstract

Teacher educators in New Zealand are charged with supporting student teachers' understandings of the New Zealand Curriculum document (Ministry of Education, 2007). Integral to this challenge is the need to provide relevant knowledge and understandings that are contextually and pedagogically appropriate (Fullan, 2007; Jasman, 2003). Aspects of the "front end" of the New Zealand Curriculum document such as the vision, principles, values and key competencies along with the learning area statements need to be understood by newly graduated teachers who will be applying this curriculum in their own classrooms. This paper reports on ongoing research investigating and reflecting on student-teacher understandings of these components of the New Zealand curriculum, on completion of three different compulsory papers within the Bachelor of Teaching degree and Graduate Diploma of Teaching (Primary). Implications for pre-service teacher education and for supporters of provisionally registered teachers are considered.

Introduction

Within the New Zealand educational context a recent change has been the introduction and implementation of the revised *New Zealand Curriculum* (NZC) document (Ministry of Education, 2007). This revised curriculum provides an overview of the intent and direction for learning in New Zealand schools. It allows schools considerable freedom and gives them the "scope, flexibility, and authority they need to design and shape their curriculum" (Ministry of Education, 2007, p. 37). Revision of the NZC has seen the inclusion of guidance related to principles of curriculum design as well as a focus on the overarching vision, principles, values and key competencies identified as important for New Zealand teachers.

Teachers' approaches to curriculum have an impact on student learning and motivation (Eisner, 1990). To develop an approach to curriculum use that is aligned with its intent, it is important for teacher educators to assist student teachers build a robust knowledge of it. Student teachers have spent many hours in classrooms as students themselves, experiencing an "apprenticeship of observation" (Lortie, 1975, p. 61). As a result, they enter initial teacher education (ITE) with a range of conceptions of curriculum, teaching and learning, and assessment. Their experiences have not usually involved intensive planning or deeper consideration of how key ideas within a curriculum connect together. Student teachers may require support from teacher educators to consider alternative theories and make conceptual changes (Coburn, 2005; Korthagen, 2004; Labaree, 2000).

The New Zealand Teachers Council (2007) specifies Graduating Teacher Standards that require those entering the profession to have professional knowledge about what to teach, how to support a learning environment and how to develop positive relationships with learners and their communities. It is acknowledged that embedded within any teacher education programme there is a privileged teaching repertoire that promotes the notion of "best practice" (Ensor, 2004). Such a repertoire affects choices that are made concerning curriculum content, pedagogy and assessment.

Previous research indicated student teachers find learning and implementing aspects of the New Zealand curriculum document challenging (Bailey et al., 2010). This research showed that many student teachers had difficulties integrating new ideas with their own perceptions of teaching in order to meet curriculum expectations. As a consequence, further research was planned and conducted to gain greater insights about student teachers' understandings and challenges. In this study, we focus on investigating a particular graduating teacher standard that states student teachers require "knowledge of relevant curriculum documents of Aotearoa New Zealand" (New Zealand Teachers Council, 2007).

This second phase of our research reports on some of the practitioner research undertaken by lecturers of professional practice, literacy education and mathematics education at the University of Waikato. In all three contexts a series of activities were designed to examine student teachers' knowledge and beliefs about curriculum, and to promote further learning. Each of the three groups of student teachers was completing one of the following final compulsory papers—professional practice, mathematics or literacy for their qualification. This study was predicated on the principles of practitioner research where generating knowledge to understand and improve practice in the local context is the main focus (Borko, Liston, & Whitcomb, 2007). Being intentional and systematic has been important (Cochran-Smith & Donnell, 2006).

For the study, the mathematics team investigated Year 2 student teacher views of how the "thinking" key competency could be contextualised within mathematics teaching and learning. Ideas were explored through the observation of a classroom task and collection of student-teacher unit plans. The literacy team investigated Year 3 student teacher understandings of the broader view of literacy as evident in the learning area statement: English. Data were gathered using reflective statements and related pieces of assessment. The professional practice teacher educator investigated the beliefs and attitudes student teachers in the primary graduate programme brought to the principles of the NZC document via observation of in-class work and questionnaires.

Ethics approval was gained for this collaborative work. The activities that generated data were part of regular university teaching, learning and assessment. Primarily, a qualitative approach was employed to systematically gather and analyse the data obtained. Themes emerging from each data set were shared during collegial discussions about the research. It is also acknowledged that, as with any research, certain aspects of the data were noticed and have become part of the analysis (Brown & England, 2004).

Professional practice: Principles in the New Zealand Curriculum

The *New Zealand Curriculum* (Ministry of Education, 2007) promotes a vision for young people as confident, connected, actively involved and lifelong learners. The intention is that this vision will be achieved through each school giving effect to the national curriculum in ways which best address the particular needs, interests and circumstances of the school's students and community. The design and review of curriculum has become an active and continuous process involving teachers in individual schools. The *New Zealand Curriculum* also states that the principles "should underpin all school decision making" (Ministry of Education, 2007, p. 9). Therefore an understanding of the role and essence of the principles of NZC needs to be developed during any New Zealand teacher education programme in order to enable newly qualified teachers to make curriculum decisions consistent with the intent and vision of the document.

In the *New Zealand Curriculum* are eight principles that embody beliefs about what is important and desirable in the school curriculum: high expectations: Treaty of Waitangi, cultural diversity, inclusion, learning to learn, community engagement, coherence, and future focus. All school curricula based on the *New Zealand Curriculum* should be consistent with the eight statements which describe these principles. They need to be central when considering curriculum planning, prioritising and reviewing. The principles in action also should be visible in the classroom of each teacher.

This study focused on student teachers' beliefs about and understanding of the principles of the NZC on completion of the Graduate Diploma of Teaching programme. Over the course of their programme students enrolled in the one-year primary graduate teacher education diploma undertook three compulsory professional practice papers. In these papers students were introduced to teaching, learning and the curriculum, and were challenged to link theory with practice as they considered their developing praxis. The professional practice papers have identified enduring understandings, which are considered to be essential long-lasting transferable big ideas (Earl & Ussher, 2010; Wiggins & McTighe, 2005). One of these enduring understandings is that student teachers are expected to know and understand that teachers are curriculum decision-makers. To this end the professional practice papers intentionally set out to develop an awareness and understanding of this role. The papers also endeavour to equip student teachers with the knowledge and skills they need so they will be confident in their role as curriculum decision-makers. It is hoped that student teachers develop both knowledge and a disposition towards the implementation of the curriculum principles, through their teacher education experience.

In particular, responses to the following questions were investigated:

- How do you feel about the principles for curriculum decision-making as mandated in the New Zealand Curriculum?

- Which of the principles in the New Zealand Curriculum do you particularly identify as ones which you will apply regularly in curriculum decision-making?
- What are your understandings of your use of these principles in curriculum decision-making?

Methodology

Data that reported on student teachers' beliefs and understandings of the principles were collected from the 2010 intake of student teachers enrolled in the Graduate Diploma in Teaching (Primary) as part of regular class activities in professional practice papers. Thirty-eight of the 68 students in the programme consented to providing data for the study. The researcher taught this cohort in one of the professional practice papers. Data were collected in June and July before the student teachers started their second practicum. Further data was collected near the end of their programme. In-class activities, an attitude survey, documented group discussions, activity sheets and questionnaires were used to gather data in response to the three research questions. These data were examined for evidence of beliefs and changes in thinking over time, from which the following themes emerged.

Professional practice findings

A number of key themes were evident upon analysis.

Attitudes towards the principles of the NZC document

Overwhelmingly the student teachers rated their attitude about the principles positively with the majority of responses being rated at the most positive extreme on the Likert scale. In particular over 80% of students expressed positive attitudes towards high expectations, cultural diversity, inclusion and learning to learn as central principles they would be applying in their curriculum decision-making. Many of the student teachers identified the principles as aligning with their own beliefs, and so felt it would be easy to implement them.

> Cos I have high expectations of myself, my own children and others I totally believe that every child needs to be given all the support they can so they can perform to their best abilities [high expectations].

> I'm all about inclusion because everyone is entitled to a good education.

Student teachers talked about their reasons for applying the principles in their curriculum decision-making. Almost without exception they gave a number of reasons and justifications for their endorsement of these principles.

> Inclusion and cultural diversity: each student is an individual with their own needs and abilities and no two children are the same, so teaching needs to be tailored to this.

> Learning to learn: I'm not there to stuff information down their throats, but to teach them how to apply themselves, understand their individual learning processes and learn to learn.

> Inclusion: Everyone should be celebrated as an individual and recognised for what we can all bring into the class.

Two principles were not as highly regarded as others, and in particular there were neutral or negative attitudes by 36% of students towards the Treaty of Waitangi principle which serves to acknowledge the place of Maori and the bicultural foundations of New Zealand. However, these same student teachers reported their attitudes towards the principles of high expectations, cultural diversity and inclusion as positive or very positive.

Applying and understanding the principles

Student teachers in this study were asked to nominate principles that they would consider regularly and apply during curriculum decision-making. The most common of these were high expectations (66%), cultural diversity (44%), inclusion (53%) and learning to learn (47%). In far fewer instances the Treaty of Waitangi (25%), community engagement (28%), coherence (31%) and future focus (25%) were identified.

When asked to discuss whether they applied the principles in their curriculum decision-making whilst on practicum, almost all students said that they did so. They were able to give a number of examples.

> I applied inclusion in PE … practising the skills so everyone could be involved.

> … another example is of future focus, where I taught lessons about sustainability and genetic engineering of food, and what the future impacts might be.

> With coherence as a principle we did this in our social studies unit on the oil slick, combining drama, ICT, literacy and social studies to make it a more well rounded and cross-curricular experience.

A number of students felt that their natural strengths, beliefs or abilities would give them an advantage and make it easier for them to apply the principles when working as a teacher.

> Treaty of Waitangi: My knowledge of Te Reo will allow me to incorporate this principle fairly easily in classrooms.

> I have a humanist view of teaching and so inclusion fits with my values as a teacher.

Barriers

A number of student teachers identified barriers to their application of principles whilst on practicum. The school, the children or community were cited as the reasons for these barriers.

> I tried for inclusion, making everyone feel like they can participate and be part of it, but it is difficult with over 30 children when some don't want to do it.

> High expectations: tried to keep them up but the bar had to be lowered
> due to students lack of effort in work and completion of work.
>
> I felt all the principles were applied on practicum with the exclusion of
> community engagement, as it's not possible in the school environment
> that was there.

Growth

Over the period of this study student teachers were able to reflect on their growth and
development in understanding the principles and their application. The student teachers
generally talked in terms of individual principles and their ability to implement these. A
few discussed their growing understanding of how the principles could be applied as an
integrated set.

Discussion

Attitudes towards the principles in the *New Zealand Curriculum* were generally very
positive, and most students felt confident in their ability to apply them. As has been
discussed by Bandura (1997, 2000, 2006), the perceived efficacy of individuals has a
profound effect on their actions and attitude. Their self-efficacy influences their courses
of action, commitment to challenges and goals, the effort they put into endeavours, their
expectations, and resilience in the face of adversity. Because the student teachers felt
they understood the principles and had faith in themselves to make good decisions, they
believed they could and would apply the *New Zealand Curriculum* principles in their
own practice.

The Treaty of Waitangi principle is not easy to understand with respect to its role in
curriculum decision-making. When considering this principle it is important to see that
it is embedded in, and interacts with, each of the other principles (Ministry of
Education, 2010). Bishop and Berryman (2009) have developed an Effective Teaching
Profile (ETP) and describe characteristics of ways effective teachers interact with Māori
pupils. These include showing care for pupils as culturally located individuals, having
high expectations, managing their classrooms to promote learning, engaging pupils
using a range of discursive teaching methods, and sharing power with them. These
characteristics clearly align with the principles of high expectations, valuing cultural
diversity and addressing the specific learning needs of all (inclusion). Although a
number of student teachers in this study described their attitudes towards the Treaty of
Waitangi principle negatively, these same student teachers were positive about high
expectations, cultural diversity and inclusion. They are therefore likely to produce
actions that align with Treaty principles. This is reassuring as their espoused beliefs
include the Treaty of Waitangi tenets of participation, partnership and protection.
Making the links between curriculum principles explicit may be a way of helping future
students more deeply understand the nature of the Treaty of Waitangi principle.

The big picture: Understanding the principles and their role in curriculum decision-making

Although the vast majority of student teachers were able to discuss their experiences of applying the principles of the *New Zealand Curriculum* during the process of curriculum decision-making, many of these did so from a fragmented perspective. Most students looked at the principles independently, identifying specific evidence that "proved" they were applying these in a defined and limited context. Their responses were often in the format "I used this principle when I did this [thing/activity] with students in my class". They spoke about how this happened "frequently" or "sometimes" in class, as though they could be checked off a tick list. Their concepts of curriculum decision-making were still at the lesson level, and with some only considering implications for a unit of work.

Occasionally student teachers demonstrated their understanding of the principles as a broader and more interconnected set. Some were able to clearly discuss examples of their teaching practice where a number of the principles were evident and had been taken into consideration in curriculum decision-making. This understanding of interconnection is promoted by the New Zealand Ministry of Education (2010) in material provided to help schools with professional development for staff regarding the curriculum.

From the responses written by the student teachers in this study, it is evident that the majority are gaining confidence in curriculum decision-making. This bodes well for their proactive application of principles in curriculum decision-making when they begin working as teachers.

Mathematics and key competencies

Three initial teacher educators from the mathematics education team explored the ideas about the "thinking" key competency of 24 second year student teachers. The key competencies in NZC are attributes that "people use to live, learn, work, and contribute as active members of their communities" (Ministry of Education, 2007, p. 12). The competencies are identified as thinking; using language, symbols, and texts; managing self; relating to others; and participating and contributing.

Prior to data collection, the student teachers spent eight hours exploring various aspects of fractional number and associated pedagogical practices as a basis for planning and implementing a unit for Year 7–8 children. The student teachers then explored key competencies within a mathematics teaching and learning context. A key competency, appropriate learning experiences and pedagogical practices were expected to be embedded within a unit of work each student was expected to plan and teach.

For this research the question explored was

- What sense are some Year 2 student teachers making of the key competency "thinking"; and how are they implementing this competency within a fractional number unit?

Methodology and analysis

Data were collected from two sources. The first set was from an in-class task where student teachers worked in groups. This task was designed to help scaffold student teachers' thinking about possible implications of a key competency for their own planning and teaching. The texts generated from this task were examined for evidence of commonalities between them. The texts were also scrutinised to determine if there was a coherent flow from the theoretical definition of "thinking" in NZC, to the practical implications for inclusion when planning a unit of work.

The second data set was student teachers' fractional number units, and their linked assessment and reflective statements. Appropriate achievement objectives and an aspect of one of the key competencies linked to the NZC document were expected within the unit. Texts from this task were examined to identify emerging categories (and their relative frequencies) that identified how student teachers might envisage the enactment of the "thinking" key competency.

The first task: in-class activity

The "thinking" key competency was selected for the in-class task. In six groups, the student teachers were asked by their lecturer (one of the researchers) to draw a table of four columns (Table 1). They listed aspects of "thinking" from NZC in column one. The student teachers were then asked to choose two of the aspects to further develop in columns two to four. The other two mathematics researchers took field notes. The completed tables were collected as data. Task one was intended to help student teachers make connections to their unit planning (task two).

Table 1.   Recording sheet for in-class task

Thinking is about …	What might this look like when children are learning?	What might this look like in a fractional number unit?	What does this mean for me when planning my unit?
- Problem-solving. - Asking questions. - Being a critical thinker. - Making sense of information. - Intellectual curiosity.			

The second task

The student teachers were required to independently design unit plans, including a "statement of intent" that articulated how a specific aspect of one key competency would be developed. The unit plans were photocopied.

Mathematics findings

The first task: in-class activity

The use of materials and resources was envisaged by five of the six groups as a key strategy to support children to develop different aspects of the thinking key competency. Resources and materials were linked to the solving of questions (group B) or problems (groups C and F); making sense of fractional number ideas (groups B, D and E) and helping children to be intellectually curious (group B).

All groups referred to children asking questions to gain, for example, "deeper learning and meaning" (group B) or to "clarify their thinking" (group F). A focus on children asking questions aligns with the NZC document, which states "students who are competent thinkers .... They reflect on their own learning, draw on personal knowledge and intuitions, ask questions ...." (p. 12).

Two groups were able to provide a coherent development of ideas from columns one through to four. For example, group E envisaged that "making sense of ideas" might look like children discussing, brainstorming, asking questions and using prior knowledge. In a fractional number unit these student teachers then suggested children could be exploring different representations for a fraction. Student teachers were also able to identify specific examples of what this would mean for themselves when planning a unit (column four, Table 1). For example, they referred to providing a variety of resources such as 10 x 10 grids and calculators to help children make sense of ideas.

Other groups appeared to struggle to achieve a coherent development of ideas. For example, in group A's recordings, they explored problem-solving as one of the aspects of "thinking" and then became focused on the use of diagrams for representing fractions. They did not seem to realise the need for themselves as teachers to consider and provide "rich" problems in their planning.

The second task

1. Key competency statement

For the purposes of this paper we will be reporting on our findings of the "statement of intent" and its development within 14 units. Thirteen to 14 student teachers included the required "statement of intent" in their unit plan. One example read, "I want to support my students to make sense of information, ideas and experiences by encouraging the students to reflect on their own learning after each lesson in order to self-assess their understanding of fractions, decimals and percentages" (student teacher T).

In our analysis four categories emerged (Table 2).

Table 2.   **Analysis of the development of key competencies within mathematics units**

Category 1	Category 2	Category 3	Category 4
No statement	Student teachers made statement but did not link to an opportunity or plan steps for its occurrence.	Student teachers made statement and linked to an opportunity for children to develop this.	Student teachers made statement, linked to an opportunity for children to develop this and planned steps for its occurrence.
1 (7%)	5 (36%)	3(21%)	5 (36%)

2. Key competency within the unit

Seven of the 14 unit plans that were analysed referred to *questioning* in their statement of intent. Of these seven, five focused on the teacher asking the questions. This appears to contradict the data from the in-class task where student teachers seemed to focus on the importance of children asking questions.

Six of the 14 unit plans made specific reference to the use of materials and resources within the statement of intent. Within the unit, all student teachers planned to use materials and resources in their teaching.

Discussion

Student teachers in this study had been exposed to the *New Zealand Curriculum* in their first year of teacher education. It was hoped that previous exposure to NZC would support them to make links between key components of the document and unit planning. However, data indicate that even with a prior introduction to NZC, incorporating a key competency into a mathematics unit plan is complex and challenging. For example, only one-third of the units indicated that student teachers included a focus on planning opportunities for children to develop the "thinking" key competency in a mathematics context. The remaining student teachers appeared to find this more demanding. This finding would support Brady's (2007) claim that when anticipating teaching, some aspects of planning can be disregarded by prospective teachers.

The use of materials for supporting the learning of mathematics is promoted and modelled in both compulsory mathematics education papers. Academic literature in the paper readings (for example Clarke, Roche, & Mitchell, 2008; Thompson & Walker, 1996) also endorses this stance. The use of materials also resonates with the philosophy of the Numeracy Development Projects that these student teachers have been exposed to from the beginning of their university mathematics education. It seems that the importance of using materials and resources in the teaching and learning of mathematics has been identified by the student teachers. However, there appears to be an uncritical acceptance by some regarding the role of materials and resources in children's mathematical learning. For example, the development of "intellectual

curiosity" was envisaged to be supported by the use of materials and resources. How intellectual curiosity could occur was not evident in the detail of the unit planning. Deeper thinking about ways in which resources and materials can support children's intellectual curiosity is required so that student teachers are clear about links to be made with the development of key competencies.

Helping children to ask questions as intended by the "thinking" key competency in NZC seems problematic. When planning a unit of work, student teachers appear to be more focused on the familiar role of the teacher as "questioner". They centred on the questions they needed to ask with the activities they planned without further considering how to promote opportunities that would encourage children to ask questions. While teacher questions are important, NZC demands a greater commitment from teachers to integrate the development of the key competencies within their planning and teaching. Opportunities for children to ask questions as well as answer them in mathematics may still be a developing idea for some student teachers.

While these were Year 2 student teachers, they were approaching the end point of their university-based, pre-service mathematics education. Trying to grapple with the conceptual development of mathematics ideas and associated pedagogical content knowledge are crucial aspects for teaching and learning. Having to consider another factor such as key competencies may have been too complex for some at that stage of their development. More time and experiences appear to be necessary for some student teachers to consider and appreciate what the key competencies might mean, before envisaging them in mathematics education.

A broader view of literacy in English: The learning area statement

The NZC (Ministry of Education, 2007) makes the recommendation that teachers need to understand the foundation of the learning area statements within the document, in order to utilise the achievement objectives. Such statements describe "the essential nature of each learning area, how it can contribute to a young person's education, and how it is structured" (p. 38).

In the NZC learning area statement: English (Ministry of Education, 2007), literacy is constructed as a social process with emphasis on situational and socio-cultural contexts within a wider field of knowledge through the integrated strands of making meaning (listening, reading, viewing) and creating meaning (speaking, writing, presenting). Oral, written and visual modes of language are thus encompassed. Thinking critically, using knowledge and skills to make decisions and choices across a range of texts are central. The complexity of this statement implies that using multiple literacies for "success in English is fundamental to success across the curriculum" (Ministry of Education, 2007, p. 18). The key points in this statement mirror current literacy theory on teaching and learning (Anstey, 2009; McDowall, 2010; New London Group, 1996).

Two initial teacher educators/researchers from the literacy teaching team investigated 40 third year student teacher understandings of the learning area statement: English, and their related planning. These student teachers were undertaking their third compulsory literacy education paper, *School Literacy Programmes*, during the final semester of their Bachelor of Teaching degree. The student teachers were studying through a mixed medium programme where teaching by both researchers is

predominantly delivered online and supplemented with six hours of face-to-face interaction.

The paper consisted of three modules: Assessment in Literacy, Broader Views of Literacy, and Literacy Programmes. During the second module student teachers were required to read and discuss prescribed articles such as Anstey (2009) and Education Queensland (2000) relating to evolving literacy theory, including multiliteracies. At the conclusion of the third module, students were required to select a quality picture book and develop a two-week thematic unit, including learning experiences and four detailed lesson plans. These plans were based on the major language/literacy approaches such as Reading to and Talking with children, Shared and Guided Reading, and writing lessons. The research questions explored were

- What are the key understandings of the learning area statement for English in regards to a broader view of literacy?
- How are these understandings reflected in the planning of a literature based thematic unit?

Methodology

An information sheet outlining the project was discussed in detail with the third-year student teachers during the initial face-to-face class. Forty student teachers gave written consent to become participants. To avoid a conflict of interest it was agreed that the analysis of the data would not occur until the final grades for the paper had been distributed. The Faculty of Education ethics committee approved this decision.

Information was collected from two sources. The first set of data included student teachers' reflective statements on their understandings of the broader views of literacy collected at the beginning of the paper and at the end of the second module. No additional prompts or suggested frameworks were provided. The second set of data was derived from the thematic units submitted for the final assignment of the paper. Content from both sources of data was analysed for evidence of key ideas from the English learning area statement (Ministry of Education, 2007).

Literacy findings

Question one

This question examines student teachers' understandings of literacy in relation to the learning area statement: English. Most students tended to present this view as two or three bullet points rather than a descriptive statement. The range of common themes emerging from the analysis of initial and final reflective statements is presented in Table 3.

Initially half the student teachers described literacy as encompassing oral, written and visual modes, while a third perceived literacy from a narrower perspective of reading and writing. The final statements illustrate that the majority of students had modified or refined their views to include a greater variety of language forms. The findings also reflect a developing understanding of the rapid changes in literacy and the need to include digital technologies.

Table 3. **Themes evident in individual written statements on what is literacy, before and after module two: Broader views of literacy**

Theme	Initial (%)	Final (%)
Reading/writing	33	0
Oral/written/visual language	48	75
Using digital technologies	3	42
Blending print and digital texts	12	42
Literacy across the curriculum	9	27
Making and creating meaning	42	60
Communication	24	48
Critical literacy	3	15
Sociocultural practices	9	39
Evolving multiliteracies	3	21

Two-thirds of the student teachers viewed literacy as an interactive process involving meaning and creating making. This relates to the literacy framework as predicated by Ministry of Education (2003, 2006). With only 15% acknowledging the importance of critical literacy in the final statements, it is apparent that this is an area of literacy that requires further focus. In addition only a few students appeared to realise the importance of connecting literacy across the curriculum. In the final statements just over a third of the group showed a broader awareness that literacy involved a multiplicity of social and cultural discourses. A modest shift is indicated in the number of student teachers beginning to see literacy as evolving depending on societal change.

Question two

Six weeks after the collection of the final reflective statements student teachers submitted their final assignments. This enabled them to demonstrate transference of their theoretical knowledge into planning. Evidence of their understandings was gathered from literacy learning experiences and lesson plans within the thematic unit as displayed in Table 4.

Aside from awareness of multimodality, the incidence of understanding increased from Table 3 for all other themes for which data were gathered. This indicates that discussion of literacy programmes during module three of the programme enabled student teachers to continue to extend and then apply their understandings.

Just over half the students designed learning experiences that promoted the development of multimodal language/literacy forms: linguistic, visual, audio, spatial and gestural systems. Additionally a high percentage of students recognised the increasing complexity of digital technologies and that these supplement rather than replace traditional print-based materials. Results shown in Table 4 reflect some awareness of the need to develop literacy across curriculum areas. It is also apparent that student teachers continued to acknowledge classrooms as diverse sociocultural

places and have taken responsibility for including culturally responsive pedagogy, but the inclusion of critical literacy was still developing.

Table 4.   Question two: Understandings reflected in planning of a literature based thematic unit

Understandings evident in unit planning	Percentage of students
Awareness of multimodality	58
Inclusion of digital technologies	60
Blending traditional print and digital technologies	73
Acknowledging literacy across the curriculum	43
Development of critical literacies	50
Recognition of social and cultural literate practices	85

Discussion

The information gathered during this research reveals that the most common dimension evident in unit planning was the recognition of social and cultural diversity in which literacies are embedded and that in a global world programmes must accommodate home, school and community sociocultural practices. This correlates with findings by Kitson, Fletcher and Kearney (2007) on community and change in literacy practices. In addition this reiterates the underpinnings of the English learning area statement, which stresses literacy as part of identity and inclusiveness. The student teachers realised that a repertoire of literate knowledge and practices, encompassing social/cultural diversity and expectations is essential.

There was evidence that engagement in the paper enabled student teachers to develop understanding of the increasing complexity of oral, written and visual texts in literacy and literature (Ministry of Education, 2007). A shift was seen from viewing literacy as basic reading and writing skills to literacy as a communication system involving oral, written and visual language, yet a number of challenges have arisen in regards to the essence of the learning area statement.

Student teachers understood the need to combine traditional and new technologies. By blending print and digital literacies, they were assisting learners to appreciate the purpose and use of all forms of texts. However the focus on digital technology tended to be included within independent learning activities rather than integrated throughout the reading programme. There was little focus on equipping their learners with the skills and strategies to effectively engage with digital texts. This intimates that the interweaving of digital technology is not perceived in a holistic manner. The nature of engagement within all forms of text-based teaching needs to be considered (Ministry of Education, 2007; Walsh, 2010).

The second challenge relates to the application of literacy skills across the curriculum as proposed in the learning area statement. The integration of literacy within different curriculum areas was not a predominant feature of the data relating to either

question. This may have been due to the focus of the assignment criteria and the constraints of the paper. Alternatively it may be that school-based classroom observations and experiences demonstrate "prevalent conceptualisations and organisation of literacy learning as a fragmented practice" (Kosnik & Beck, 2008, p. 116). Therefore a challenge is for beginning teachers to integrate literacy knowledge, skills and pedagogy in the context of their cross curricula work.

Another concern is that critical literacy (McDowall, 2010; Sandretto, 2006) is not necessarily reflected adequately in planning and current views (Tables 3 & 4). Even after undertaking associated readings and discussion, only half of the cohort acknowledged the need for planning to support children to teach how to deconstruct and critically evaluate texts. These aspects require further attention to enable children in their classrooms "to understand the power of language, to enrich and shape their own and others' lives" (Ministry of Education, 2007, p. 18).

The research has enabled us to track development of student teacher understandings of the broader views of literacy and implications for planning. We have considered their responses to a changing view of literacy and literate behaviours as inherent in the English learning area statement and the relationship between multiliteracies and pedagogy for their own classrooms. Beginning teachers should graduate from initial teacher education programmes with strong pedagogical knowledge in terms of a broad, inclusive and critical approach to literacy and literacy education. It is hoped that what is espoused in their planning documents is enacted in classroom practice.

Our collective thinking

The open-ended and flexible nature of the curriculum document means that teachers can have considerable influence over the curriculum that a student experiences. It is important therefore that student teachers develop confidence in their own ability to competently and responsively make curriculum decisions.

Findings from this collaborative study indicate that learning to incorporate aspects of the "front end" of the document within their teaching is a complex process for student teachers. In the case of professional studies, student teachers' personal beliefs did not always align with the principles of NZC. For mathematics, the integration of content knowledge and key competencies in planning proved problematic for some students. Those students working with the English learning area statement were constantly challenged by rapidly evolving definitions of literacy.

Despite these challenges the graduates entering the profession will "have knowledge of the relevant curriculum documents of Aotearoa New Zealand" (New Zealand Teachers Council, 2007). It is expected that beginning teachers will continue to receive professional support during the provisional registration period and develop the ability to use such knowledge to plan appropriate, quality learning experiences for children. This support could include a close scrutiny of the content for the different curriculum areas in NZC and also those ideas proposed in the document such as principles, values and key competencies.

The NZC document identifies the direction for learning for all students when they are attending a school, but it is the teacher who is the main influence on what children learn. The significance of this work is that it identifies the sense some student teachers (teachers of the future) are making of and taking from their initial teacher education

experiences with the NZC document. The notion of a privileged teaching repertoire (Ensor, 2004) predicates constraints on data collection and analysis.

As practitioner research it is important that findings be shared both to inform the research process and to ensure that they have an impact beyond the immediate context.

Future directions

The findings of this study inform further development and refinement in the teaching of relevant teacher education papers. It is critical that initial teacher education offers student teachers the opportunity to contemplate curriculum issues. The authors contend that experiences that enable student teachers to grapple with complex ideas will support them to become active curriculum decision-makers. These same experiences also provide opportunities for initial teacher educators to further reflect on supporting students to become effective practitioners.

The researchers also suggest that a holistic approach across many disciplines would benefit student teacher understandings of the NZC document as a coherent whole. A comprehensive and deliberate institutional strategy for implementing the "front end" of NZC is required within teacher education programmes for this to occur. This would engender continued dialogue and planned research opportunities between colleagues working within different contexts of teacher education. Such a strategy may support student teachers to integrate key ideas from the "front end" of the document with each of the learning areas.

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