

# TEACHERS AND CURRICULUM

KAIAKO ME TE MARAUTANGA

EDITOR: CLIVE McGEE VOLUME 12 2011



### **TEACHERS AND CURRICULUM**

**EDITOR:** 

Clive McGee

**EDITORIAL COMMITTEE:** 

Marilyn Blakeney-Williams

Nigel Calder Kerry Earl Philippa Hunter Dawn Penney Kirsten Petrie Merilyn Taylor Bill Ussher

**VOLUME 12 2011** 

**CONTENTS** 

**COVER DESIGN** 

Donn Ratana

**NOTES FOR CONTRIBUTORS** 

Clive McGee

Philippa Hunter

**EDITORIAL** 

2

3

5

13

23

41

LAYOUT AND DESIGN

Barbara Hudson

History in the New Zealand Curriculum: Discourse Shaping and Key Competencies **Possibilities** 

**EDITORIAL CORRESPONDENCE AND** MANUSCRIPTS SUBMITTED FOR PUBLICATION

SHOULD BE ADDRESSED TO: Research Manager

Wilf Malcolm Institute of Educational Research Faculty of Education The University of Waikato Private Bag 3105 Hamilton 3240.

email: wmier@waikato.ac.nz

on curriculum knowledge and learning to teach Mary Hill, Lexie Grudnoff and Fiona Ell

Learning to think as an effective mathematics teacher: Teacher educator impacts

Literacy and numeracy standards: Recent constructions within the political, business and media discourses in New Zealand Margaret Walshaw and Roger Openshaw

Authentic Assessment in Performance-based Subjects John Williams and Dawn Penney

31

WEBSITE:

http://education.waikato.ac.nz/research/ publication/

From classroom teacher to teacher educator: Generating PCK through action

research Anne Hume

BOOKS FOR REVIEW SHOULD BE SENT TO:

Research Manager

Wilf Malcolm Institute of Educational

Research

Faculty of Education The University of Waikato Private Bag 3105 Hamilton 3240.

email: wmier@waikato.ac.nz

Teachers' perspectives of professional development for effecting change in Māori medium classrooms: A mathematics experience Ngarewa Hawera and Merilyn Taylor 49

The Principles in the New Zealand Curriculum: What sense do student teachers make of them?

Frances Edwards 57

**BUSINESS CORRESPONDENCE:** 

orders, back orders, subscriptions, payments and other enquiries should be sent to:

A Critical Analysis Process - bridging the theory to practice gap in senior secondary school physical education Lorna Gillespie and Sue McBain

**TEACHERS AND CURRICULUM** Hamilton Education Resource Centre

PO Box 1387 Hamilton email: janh@waikato.ac.nz Teacher Educators Talk About Enduring Understandings Kerry Earl, Jenny Ferrier-Kerr and Bill Ussher

Rethinking The Role Of Counting In Mathematics Learning

73

65

SUBSCRIPTIONS:

within New Zealand \$25 (includes postage) overseas \$40 (includes postage)

Jenny Young-Loveridge

79

COPYRIGHT:

Faculty of Education The University of Waikato A Research Note: A Regional Response to National Concerns in Teacher Education Anne-Marie Hunt 85 **TEACHERS AND CURRICULUM** is an annual publication of the Faculty of Education, The University of Waikato, Hamilton, New Zealand.

It includes articles about curriculum issues, research in the area of curriculum and informed curriculum practice. Reviews of curriculum related books may also be included.

ISSN 1174-2208

#### **Notes for Contributors**

Teachers and Curriculum provides an avenue for the publication of papers that:

- raise important issues to do with the curriculum
- · report on research in the area of curriculum
- provide examples of informed curriculum practice
- · review books that have a curriculum focus.

This peer reviewed journal welcomes papers on any of these from tertiary staff and students, teachers and other educators who have a special interest in curriculum matters. Papers on research may be full papers, or if time or space is at a premium, research notes, that is a 2,000 word summary.

#### SUBMITTING ARTICLES FOR PUBLICATION

The editorial committee encourages contributors to ask colleagues to comment on their manuscripts, from an editorial point of view, before submission for publication.

#### **LENGTH**

Manuscripts should not normally exceed 7,000 words, including references and appendices. An abstract must be provided. Abstracts should not be more than 100 words

#### METHOD OF SUBMITTING A PAPER

Please provide copy in 12 point type in a font compatible with the use of macrons (preferably Helvetica Maori or Times Maori) with line and a half spacing for the main text, and with 20 mm margins on all edges. Word files are preferred. Please do not include running headers or footers, Follow the style of referencing in the Publication Manual of the American Psychological Association (APA), 5th edition with references in a reference list at the end of the manuscript, rather than footnotes. Manuscripts not submitted in accordance with the above guidelines will be returned to authors for amendment.

#### **COVERING LETTER**

When submitting a manuscript to *Teachers and Curriculum*, authors must, for ethical and copyright reasons, include in a covering letter a statement confirming that (a) the material has not been published elsewhere, and (b) the manuscript is not currently under consideration with any other publisher.

#### **DATE FOR SUBMISSION**

Manuscripts may be submitted at any time.

#### **COPYRIGHT**

Copyright of articles published in *Teachers and Curriculum* rests with the Faculty of Education, The University of Waikato. Requests to reprint articles, or parts of articles must be made to the Editor via the Hamilton Education Resource Centre. Email: barbh@waikato.ac.nz

## THE PRINCIPLES IN THE NEW ZEALAND CURRICULUM: WHAT SENSE DO STUDENT TEACHERS MAKE OF THEM?

FRANCES EDWARDS

THE UNIVERSITY OF WAIKATO

#### **ABSTRACT**

The principles set out in the New Zealand Curriculum (NZC) "embody beliefs about what is important and desirable in school curriculum— nationally and locally. They should underpin all school decision-making" (Ministry of Education, 2007). An understanding of these principles is essential for all teachers who are involved in education in the compulsory sector in New Zealand, including beginning teachers.

This paper reports on a study which investigated the developing understandings of the place and use of the principles in the NZC by student teachers over a year-long Graduate Diploma (Primary) programme and as they moved into their first teaching positions. Student teachers were able to identify examples of their own practice that reflected specific principles. In particular the principles they highlighted were ones that aligned with their personal beliefs. Other principles that lay outside their personal beliefs proved more difficult for them, but their understanding of the principles as they related to curriculum decision-making developed over the duration of the programme.

#### Introduction

Teachers, parents and students alike understand the main purpose of school to be a place where children and young people go to learn. They expect that, at school, children will be provided with selected educational experiences in a range of settings that will enable them to learn. Many but not all of these experiences are directly set up by teachers, often as a result of decisions based on their interpretation of the school curriculum.

With the recent introduction of the revised New Zealand Curriculum (Ministry of Education, 2007) (NZC), each New Zealand school has been given unprecedented freedom and responsibility to develop and implement its own school curriculum within the guidelines of the NZC. The Board of Trustees of each school (the elected parent body responsible for the governance of a school), through the principal and staff, is required to develop and implement a curriculum for students within the guidelines outlined in the NZC as well as the National Education Goals and National Administration Guidelines (Ministry of Education, 2009).

The revised NZC reflects a shift in emphasis in New Zealand curriculum from a rigid prescriptive national curriculum to a broad-based design that school leaders can use as a framework for their specific school curriculum design. The first sections of the revised NZC document give a holistic view of learners and learning, and provide schools with directions for learning. School leaders and teachers now must focus on the directions of the revised national curriculum including the vision, values and key competencies, and effective pedagogy. They must then design and develop their own school curriculum. The NZC provides a description of learning areas and associated achievement objectives, but the view of curriculum is now more holistic and all-encompassing than simply meeting subject-specific achievement objectives. Connections across learning areas are advocated.

As is described in the NZC, curriculum in New Zealand is designed and interpreted in a three-stage process. Firstly, as a national curriculum, the NZC provides a framework within which school curriculum can be made, including a vision for young people in New Zealand, values to be encouraged, and key competencies to be developed. Secondly, as a local school curriculum, schools are given the authority to design their own curriculum within this framework. And thirdly, as a personalised classroom curriculum, teachers interpret and use their school's curriculum to best meet the needs of the individuals and groups in their classes. Schools have been given the scope, flexibility and authority to design and shape a curriculum that reflects a response to the needs of their community of students in their particular context. Teachers' curriculum decisions include the selection of content knowledge, teaching methods and approach, strategies to engage students, assessment and evaluation of teaching effectiveness, time management, ways of relating to others, and the use of space, to list a few.

The NZC sets out eight principles which are intended to provide the foundations for curriculum decision-making in New Zealand schools. These principles are, in shortened form, high expectations, the Treaty of Waitangi, cultural diversity, inclusion, learning to learn, community engagement, coherence, and future focus.

These principles position learners centrally and are concerned with ensuring learners are provided with experiences that best engage and challenge them within a safe and stimulating learning environment. The principles are also in place to ensure that the uniqueness of the New Zealand context is affirmed. It is therefore essential that student teachers and beginning teachers develop a good understanding of their use in curriculum decision-making. The developing understanding and use of the NZC principles by student teachers is the focus of this paper.

#### THEORETICAL BACKGROUND

Conceptions of curriculum are wide and varied. Curriculum is regarded as extremely complex, encompassing a wide range of features, and situated within a particular

context. Curriculum is seen as more than a list of subject matter: it extends to include the experiences children have in school, and is socially constructed. The terms stated/planned and enacted/experienced curriculum are used to explain the slippery concept of what is intended and what is experienced by children (Hawthorne, 1992; McGee, 1997, 2007; Smith & Lovat, 2003).

Studies of curriculum use indicate that teacher decision-making is not clear-cut or predictable. Instead teachers make decisions while influenced by a range of factors including the official written curriculum and support materials and their own beliefs about teaching and learning and about children (Prime & Miranda, 2008; Smith, 2004; Teddy, Bishop, Berryman, & Cavanagh, 2009). Decisions are also impacted by their own knowledge and expertise (Hawthorne, 1992; McGee, 2007) and the "lens" with which they view curriculum (Edwards & Edwards, 2010; Smith & Lovat, 2003). The constraints they feel they have to work within, including the expectations of others (Hawthorne, 1992, 1986; Smith, 2004) and their perceived curriculum decision-making space (Reddan, 2006), affect their efficacy, linked to role perceptions and self-image, which, along with values, feelings and intuition, guide teachers (Hargreaves, 2005; McPherson, 1972). All of these interconnected and sometimes competing influences affect teachers as they make curriculum decisions day to day. Thus curriculum evolves as a series of decisions and judgements being made by the teacher in response to their own beliefs and worldview, as well as to the external stimuli and information they gather (Smith & Lovat, 2003).

It is critical for school leaders, teachers and teacher educators to consider and acknowledge the central role of teachers' curriculum decision-making, and to realise that "teachers close their doors and proceed to create within their classrooms an amalgam of teaching that carries their individual signature regardless of what the curriculum mandate is in the district or state" (Hawthorne, 1992, p. x). Teachers are the most important and central decision-makers when it comes to the curriculum their classes experience (McGee, 1997; Sofou & Tsafos, 2009).

The principles in the NZC "embody beliefs about what is important and desirable in school curriculum—nationally and locally. They should underpin all curriculum decision-making" (Ministry of Education, 2007, p. 9). The principles therefore provide foundational considerations for curriculum. Flockton (2009) has argued that each school must be able to demonstrate that its curriculum is underpinned and consistent with the principles, as evidenced by practice rather than by documentation. In other words the principles-in-action need to be visible in the classroom of each teacher. This being the case, New Zealand teachers must find the balance between their autonomy to act as professionals, and their obligations to their school leadership and to government mandates with respect to curriculum, and indeed all other aspects of their roles.

It is important then that student teachers are made aware of this wider meaning of curriculum and that they understand their central role in creating curriculum, at least at the school and classroom levels. Curriculum has been defined by "the operationalising of a series of value based decisions chosen from a possible range of alternatives available within a specific context" (Smith, 2004, p. 94), and student teachers need to understand the link between their decisions and what happens for children. Flockton describes curriculum as that which actually happens in the daily life and goings-on in classrooms and around schools (Flockton, 2009). In this light it is the experience or the journey of the learner that is the realised curriculum (Pinar, 1975). Student teachers need to be exposed to these ideas as well as possible approaches to curriculum, both during study and whilst on practica. They need to be made aware of how they are expected to approach curriculum (Shawer, 2010) and the differences between planned, enacted, and experienced curriculum.

Alongside experienced teachers using this new document for the first time then, student teachers need to learn how to apply the NZC principles in their curriculum decision-making so that the educational experiences that they plan for students are in alignment with nationally agreed directions set by the government. This means that all teachers need to gain an in-depth understanding of the principles, their obligation to use them, and how to apply them with the goal of embedding them within their classroom and school culture. Through teacher education, their use of the NZC and associated feedback, and personal reflection, student teachers and inexperienced teachers develop knowledge and skills about the curriculum document and their effect on the enacted curriculum during their teacher education and in their first years working as a teacher. Each will develop an understanding of their role as curriculum decision-maker and will need particular support and guidance. As they become more "fluent" in this aspect of curriculum

design, the principles should become more visible in what actually happens in day-to-day activities in and around their classroom and school.

Sabar and Shafriri (1982) discuss the gradual personal and professional growth of teachers over time when they are involved in developing curricula, and this is also likely to be the case currently for New Zealand teachers. Given the "new" status of the NZC, having only been mandated in schools since the beginning of 2010, it is particularly important that student teachers and beginning teachers be given a firm grounding in the NZC and support in its use. Their associate/mentor teachers are themselves still developing expertise in the implementation of the NZC (Education Review Office, 2010), and will not necessarily be experts themselves.

#### **METHOD**

This paper reports on an eight-month study conducted in 2010, involving a cohort of students enrolled in the Graduate Diploma in Teaching (Primary) at the University of Waikato. All students enrolled in this programme were offered the opportunity to be involved in the study: 38 of the 68 students opted to take part. The study focussed on the students' attitudes towards the principles of the NZC, their beliefs about the principles, their observations of principles-in-action in schools they visited, and their self-reported early use of the principles whilst on two teaching practica. Data were collected through a series of in-class activities. Students had spent some time in class considering the principles before the commencement of data collection. All participants completed an attitude survey using a Likert scale and an associated questionnaire, which explored the reasons for their attitudes. At other tutorials students were given focus questions to discuss in groups and their notes were collected as data. Students also gave permission for the activity sheets from their tutorials to be collected and read. After each of the two practicum experiences, the recorded reflections of the student teachers were collected. This accumulation of classroom-generated work provided a rich source of data for the study.

The participants ranged from recent graduates to a number of middle-aged career-changers. The majority of participants in this study had worked in areas outside of education before enrolling in this teacher education programme. My impression of the cohort was confirmed by other teacher educators: the students were hard-working and focussed on their teacher education. Approximately one-fifth of the participants were overseas graduates (mostly from Britain) and had not

|                      | Negative |   | Neutral | Positive |    |
|----------------------|----------|---|---------|----------|----|
| Principle            | 1        | 2 | 3       | 4        | 5  |
| High Expectations    | 0        | 0 | 3       | 9        | 21 |
| Treaty of Waitangi   | 1        | 1 | 10      | 9        | 12 |
| Cultural Diversity   | 0        | 0 | 3       | 12       | 18 |
| Inclusion            | 0        | 1 | 6       | 7        | 19 |
| Learning to Learn    | 0        | 1 | 2       | 7        | 23 |
| Community Engagement | 0        | 1 | 7       | 10       | 15 |
| Coherence            | 0        | 3 | 8       | 13       | 9  |
| Future Focus         | 0        | 2 | 3       | 15       | 13 |

Table 1: Students' feelings towards the principles mid-way through programme

completed any of their previous education in New Zealand.

#### **FINDINGS**

This section summarises and describes the findings after analysis of the data. Written material was collected during tutorial sessions and was later analysed for themes.

Attitudes towards principles of the NZC

The table above summarises the responses received when students were asked to mark on the scale how they felt about each of the principles from 1 = very negative to 5 = very positive.

Overall the students reported positive attitudes towards the principles, with very few reporting negative attitudes (81% of all responses were positive, 15% were neutral, and only 3% of all responses were negative). In particular the principles of high expectations, cultural diversity, learning to learn, and future focus were rated positively in almost all cases. More neutral and some negative attitudes were evident towards the principles of Treaty of Waitangi and coherence, in particular, with approximately a third of the scores for these principles being neutral or negative.

#### **BELIEFS ABOUT PRINCIPLES**

At the same time as students were asked about their feelings regarding the principles, they were asked to give reasons or explain why they felt positively or negatively about the principles. Based on the "why" questions, student teachers wrote about specific beliefs they held about the principles and the NZC. These often related to their backgrounds and experience. These two following quotes illustrate this point.

ST6: I totally believe that every child needs to be given all the support they can so they can perform to the best of their abilities. (discussing inclusion)

ST7: Because it's our heritage. It's who we are, we should be proud and it's important to be acknowledged. It's to keep our culture alive. (discussing Treaty of Waitangi)

In their comments about their attitudes, student teachers often linked their reasons for scoring principles positively with their own convictions and beliefs. For example:

ST1: This is why I'm a teacher—to ensure students know how to continue their learning when I'm not around. (positive response to learning to learn)

ST3: I like to have high expectations in myself so expect it in the students I teach. (positive response to high expectations)

ST23: Inclusion is very, very important. Everyone should feel like the classroom is a safe place. (positive response to inclusion)

ST24: Inclusion—I have a humanist view of teaching and learning and inclusion fits with my values as a teacher. (positive response to inclusion)

Instances where negative attitudes were recorded were usually accompanied by either a justification or a statement of uncertainty. The following are comments from student teachers who scored their attitudes negatively towards a principle.

ST1: Important to know our background in NZ and understand what brought us to today. I feel having a worldly perspective is of equal importance due to the influx of migrants from throughout the world. (negative response to Treaty of Waitanai)

ST18: It [Treaty of Waitangi] is given way too much importance, yes it is important but NZ is now a multi- not bi-cultural society. (negative response to Treaty of Waitangi)

ST3: In primary level it seems rather a complicated principle to employ. (negative response to learning to learn)

ST17: I can see how linking areas can motivate eg mantle of the expert, but am concerned about the reality of implementing this. (negative response to coherence)

There was only one instance during the entire study where a student teacher mentioned their obligation to apply the principles.

ST16: It's part of my job and it's part of what I got to do legally.

One of the interesting findings was that almost all students were able to articulate clear and focussed reasons to explain and justify their attitudes.

#### SEEING PRINCIPLES IN ACTION

As part of the study student teachers were asked to describe any evidence of principles-in-action in the schools they attended for practicum, what they saw and what was being said with respect to the principles. All groups of students were able to identify some principles-in-action. They focussed mainly on classroom practice. The following are snippets from group discussion:

G1: My AT [associate teacher] incorporated te reo in everyday lessons and had Maori resources on the wall. (discussing Treaty of Waitangi)

G2: We had "what did we learn or enjoy about learning today" at the end of each day. (discussing learning to learn)

The participants also identified the application of the principles in the wider life of the school.

- G2: Inclusion was shown when non-Maori joined the kapahaka.
- G5: School camp was a great time for coherence.
- G7: Future focus happened with Enviro schools—vege garden, scarecrows, composting, gully project reforestation. We had worm monitors too.

Students were asked to identify principles they applied during their curriculum decision-making whilst on practicum, and provide specific examples of this occurring. All student teachers were able to relate aspects of their planning to principles and provide specific examples to illustrate this. For example:

ST25: Future focus—I taught a sustainability unit which focussed on conserving water (a toothbrush experiment), recycling (children sorted the school rubbish and graphed the results). Literature that linked to sustainability was read and children discussed alternate endings/made predications using The Lorax by Dr Seuss.

ST26: With coherence as a principle ... we did this in our social studies unit on the oil spill, combining drama, ICT, literacy and social students to make it a more well rounded and cross curricular experience.

In the early part of this study, student teachers seemed to focus on the principles individually, mentioning single identified principles rather than looking holistically at the application of the principles as a set. Later in the year, they wrote more frequently about the application of the principles as a set, often relating them to topics being taught. For example, after the second practicum some student teachers talked about the context of lessons they had planned, and then showed how the principles (as a set, or subset, rather than individually) were evident from the way the lessons proceeded.

#### ALIGNMENT OF BELIEFS AND ACTIONS

Early in the study student teachers were asked to identify any principles they would apply in their curriculum decision-making. This is self-reported data based on their reflections on their lesson planning.

Of the eight principles, high expectations (in 55% of cases), cultural diversity (in 37% of cases), learning to learn (in 39% of cases) and inclusion (in 45% of cases) were most frequently cited as priorities. The other principles were given lower priority with Treaty of Waitangi (mentioned in 21% of cases), community engagement (in 24% of cases), coherence (in 26% of cases) and future focus (in 21% of cases).

Most student teachers appeared to act on their beliefs. The principles they identified as the ones they would apply regularly during curriculum decision-making (early in the year) were the same as those they discussed later in the year in the context of their own teaching. However by the end of the year, a number of student teachers had decided that there were other principles in the NZC that they had not originally identified, but that they now saw as important in underpinning their decisions.

ST22: During practicum 2 I was responsible for a unit on matariki (SS). I tried to make this a "learning by exploration and research" to encourage "learning to learn". In the unit I paid homage to other cultures'.

As time went by a number commented on what they saw as their earlier simplistic views when they realised:

ST4: "All the other principles also mattered!"

For some participants, rather than an alignment between espoused attitudes and the applications of the principles, there appeared to be conflict. In particular, when the data around the negative and neutral attitudes to the Treaty of Waitangi was investigated further, it was found that each student teacher who scored their attitude towards this principle as negative or neutral also scored their attitudes towards inclusion, cultural diversity and high expectations as high or very high. This will be discussed later.

#### **CHANGING VIEWS**

The principles are, by their very nature, quite broad and even vague. Early in the year the student teachers accepted these without much critical engagement, I suspect. However, the development of student teachers' understanding of the principles over time was evident, and most also conveyed a growing understanding of their own curriculum decision-making. Over the period of the year-long study, student teachers acknowledged their strengths and weaknesses with respect to the application of the principles in the NZC, particularly after their second practicum. They also acknowledged their growing confidence in making curriculum decisions. Later in the year a number were evidently finding their own voice as teachers, and gaining confidence in their role as curriculum decision-makers. The following quotes exemplify this building confidence:

ST1: I chose to disregard the teacher's assumptions about the children's levels of abilities and had high expectations of all. The effect of this was evident when a child labelled as "away with the fairies" and "not good at maths" had great success in continuing spatial patterns.

ST5: being aware of this [cultural diversity] when making curriculum decisions was important.

ST16: I applied the principles of high expectations. I have changed my opinion around community engagement as since being on my practicum I have seen the importance of it.

ST17: I incorporated them in my plans ... my AT [associate teacher] also showed me how you can apply more than one in a single lesson

A few conveyed a sense of being overwhelmed or not applying some principles at all whilst on practicum. In

these few cases powerlessness caused by the school culture was identified as a barrier to the student teachers. These reduced the student teachers' efficacy to apply the principles.

After the second practicum student teachers seemed able to make more direct links between theory and practice. A wider range of principles were mentioned by individuals in associated classroom activities after their practicum experiences. In particular the principles of inclusion and cultural diversity evoked the strongest responses (and most numerous mention in written reflections), with coherence and future focus also mentioned a number of times in class discussion and written activities. This contrasts with data collected earlier in the study where coherence was mentioned as a principle that would be applied by only 26% of student teachers, and future focus was mentioned by 21%. As mentioned earlier, student teachers were more able to talk about their curriculum decision-making after practicum experiences. Some student teachers started talking about the principles more as an interconnected set, after reflection on their curriculum decision-making in the second and third practica.

#### Discussion

Student teachers are by definition developing their capability as teachers, and all that this involves. The process includes learning about the New Zealand Curriculum and their roles as curriculum decisionmakers. This appears to be a complex process for student teachers (Bailey et al., in press). Key findings of this study illustrate the attitudes that student teachers have towards the principles in the NZC, and the alignment between their personal beliefs and these principles. Data demonstrate how student teachers continue to develop their thinking as they reflect on their experiences over the course of the year, increasingly looking at the principles as a collective set, rather than individually, and in some cases changing their minds about the value of some of the principles.

Student teachers in this study had an overwhelmingly positive attitude towards the NZC and the mandated principles which underpin curriculum decision-making in New Zealand. The majority of student teachers felt positive or very positive about the relevance and purpose of the principles and were able to articulate reasons for this. In many cases they identified that the principles aligned with their own personal beliefs about teaching and learning, and thus they felt it would be easy to apply these principles during their own curriculum decision-making. This could be, in part, because the vision

for young people espoused by the NZC is aligned with current social norms in New Zealand with respect to what "good citizens" might be, the importance of individual development complementing community responsibility, and the need for inclusivity held within a unique but multicultural society.

Each student tended to identify more particularly with some of the principles. They discussed their application of these principles whilst on practicum, and discussed the visibility of these principles in the lessons they taught. Because of the alignment between their own beliefs and the principles espoused in the NZC, student teachers are more likely to apply these in their own curriculum decision-making, as teachers' beliefs have been demonstrated to influence teaching practice in a wide range of ways (Edwards, 2003; Pajares, 1992). This means that their visible classroom curriculum may be more likely to be aligned with the principles in the NZC in which they have a personal belief and to which they have a commitment. Other principles, particularly ones not aligned with personal beliefs, will probably need to be more deliberately included by these student teachers.

Student teachers' self-belief in their ability to successfully apply the principles was also evident, and this is another possible indicator of a close fit between their beliefs and their practice. Student teachers in this study did not indicate that they felt pressure or obligation to conform to the curriculum—instead the alignment was such that they felt they could positively apply the principles to the classroom curriculum.

The participants in this study demonstrated a developing understanding of the principles over time. For students who initially identified a lack of understanding of some principles, their later responses showed more depth and accuracy in understanding, especially for the principles of future focus, coherence, and community engagement. Many seemed to develop this understanding during their practicum experiences and as they reflected on these. In initial teacher education helping students make their beliefs explicit, reflecting on these beliefs and their role on performance within a constructivist-oriented curriculum (as was the approach in this programme) gives more chance of lasting impact being made (Briscoe, 1991; Horwitz, 1985; Lynch, 1990; Stuart & Thurlow, 2000). It is therefore hoped that these student teachers will have an enduring impression of the importance of the principles in their curriculum decision-making. The increased understanding over time demonstrated in this study reflects the findings of Sabar and Shafriri (1982), although these student teachers are still in the early stages of their development and will need considerable support for the next few years. This support will ideally continue to promote the movement of beginner teachers from thinking about the application of individual principles to the development of a more coherent view of the principles as a set/whole. There is value in the exploration of connectedness between and among the principles (Ministry of Education, 2010).

The Treaty of Waitangi principle achieved negative or neutral scores by over one-third of the participants. This caused concern for the researcher, as this principle is seen by the Ministry of Education as an overarching principle, and should be embedded in each of the other principles, highlighting the place of Māori as tangata whenua and the bicultural foundations of Aotearoa New Zealand. In the New Zealand Curriculum, the potential of Māori students should be a major consideration for curriculum decision-making. (Ministry of Education, 2010, p. 3)

On further analysis of the data, however, it was found that all of these same participants reflected attitudes to inclusion, cultural diversity and high expectations as positive or very positive. It would appear then that some of the principles that would be seen as supporting protection, participation and partnership (under the auspices of the Treaty of Waitangi) are in fact understood. The Effective Teaching Profile developed by Bishop and Berryman (Bishop & Berryman, 2009) describes the characteristics of teachers who interact effectively with Maori students, and these characteristics align well with the principles of inclusion, cultural diversity and high expectations. It could be that the student teachers in this case need further professional development regarding the overarching Treaty of Waitangi principle so that they develop more than a tacit understanding of the outworking of this principle. The application of the Treaty of Waitangi principle is hard for people to understand as it can seem difficult to link to practice. The other principles mentioned are more easily seen to link to practice. Another factor to consider in the context of this study was the presence of a number of student teachers who had recently moved to New Zealand from overseas, and therefore had little understanding of the Treaty of Waitangi.

Early in their teacher education, students gained an understanding of the principles through their personal reading and tutorial activities. Over time the student teachers appeared to develop an understanding of the complexity of curriculum decision-making in their own use of the NZC. The movement that some student teachers demonstrated towards a more integrated approach, where the principles were considered not as single entities but collectively as an interconnected set, helped them see how they could manage the task of applying all of the principles. The interconnected set of principles provides a network of reference points, all of which come to bear in curriculum decision-making. There may be variability in which of these reference points are particularly relevant for any particular decision, but they are all present and are considered. NZC Update 3 (Ministry of Education, 2010) encourages schools to explore the fruitful connections between and among the principles. As many schools are still working through this process as part of their curriculum design at the time of the study, it is not surprising that only one student teacher commented on the way their associate teacher helped them to do this.

#### Conclusion

Initial teacher educators and mentor teachers working with beginner teachers have a responsibility to provide support, guide and sometimes direct instruction, to enable these teachers to develop their capabilities. Learning about the use of curriculum and in particular classroom curriculum design is a long-term process, and inexperienced teachers will need considerable mentoring over a period of time, in order to practice and reflect on the process. Feedback during this developmental time for inexperienced teachers is vital; in particular feedback about their use of the principles of the NZC, and whether these are becoming visible in their classroom will be particularly helpful.

A key finding of this study was the positive attitude and enthusiasm that these student teachers had towards the NZC and towards their curriculum decision-making. This positive attitude can be recognised and encouraged by mentor teachers, when seen in beginner teachers. Newly qualified teachers will only have the experience of the revised NZC (Ministry of Education, 2007) and not earlier documents, and will have limited experience in curriculum decision-making. Initial teacher educators and mentor teachers should encourage their enthusiasm and provide good models of practice. They can also provide feedback in ways that increase student teacher efficacy and hence confidence.

The principles in the NZC need to be kept at the forefront of learning conversations if these are to be integrated into all aspects of teachers' planning and practice, and made visible in their classrooms. The data in this study show that although attitudes towards the principles are generally very positive, not all principles are well understood. Discussions and exemplars to illustrate the use of principles may help student teachers and beginning teachers develop a deeper understanding of each principle as a standalone key belief, but also as an interconnected set.

The beliefs of teachers affect their practice, and this was again illustrated in this study. It follows that student teachers' beliefs regarding the underpinning principles need to be explored in teacher education classes. They need to be made explicit, discussed and challenged. Once understanding is embedded, these inexperienced teachers can develop a more rounded understanding of themselves as curriculum decision-makers and their responsibilities and obligations to education administrators. This is a challenge for initial teacher educators as they plan programmes to best prepare teachers to work in New Zealand schools.

#### REFERENCES

- Bailey, J., Blakeney-Williams, M., Carss, W., Edwards, F., Hawera, N., & Taylor, M. (In press). Grappling with the complexity of the New Zealand Curriculum: Next steps in exploring the NZC in Initial Teacher Education. *Waikato Journal of Education*, 16(3).
- Bishop, R., & Berryman, M. (2009). The Te Kotahitanga effective teaching profile. Set: Research Information for Teachers (Wellington), 2, 27–33.
- Briscoe, C. (1991). The dynamic interactions among beliefs, role metaphors, and teaching practices: A case study of teacher change. *Science Education*, 75(2), 185–199. doi:10.1002/sce.3730750204

- Education Review Office. (2010).

  Preparing to give effect to the New
  Zealand Curriculum: Based on reviews
  undertaken in Terms 3 and 4 of 2009.
  Retrieved from http://www.ero.govt.
  nz/National-Reports/Preparing-toGive-Effect-to-the-New-ZealandCurriculum-June-2010/Findings
- Edwards, F. (2003). Netting the Maroro: An exploration of Cook Islands teachers' beliefs about language learning and teaching (Unpublished Master of Arts thesis). Massey University, Palmerston North, New Zealand.
- Edwards, F., & Edwards, R. (2010). Christian curriculum? Look at the teacher. *Christian Teachers Journal*, 18(3), 12–16.
- Flockton, L. (2009). *The connected* curriculum. Retrieved from http://www.nzei.org.nz.ezproxy.waikato.ac.nz/
  The+Connected+Curriculum.html
- Hargreaves, A. (2005). The emotions of teaching and educational change. In *Extending educational change* (pp. 278–295). Dordrecht, The Netherlands: Springer.
- Hawthorne, R. K. (1986). The professional teacher's dilemma: Balancing autonomy and obligation. *Educational Leadership*, 44(2), 34–35.
- Hawthorne, R. K. (1992). *Curriculum in the making*. New York, NY: Teachers College Press.
- Horwitz, E. K. (1985). Using student beliefs about language learning and teaching in the foreign language methods course. *Foreign Language Annals*, 18(4), 333–340. doi:10.1111/j.1944-9720.1985. tb01811.x
- Lynch, T. (1990). Researching teacher: Behaviour and belief. In C. Brumfit & R. Mitchell (Eds.), Research in the language classroom. ELT documents 133. Exmouth, England: Modern English Publications.
- McGee, C. (1997). Teachers and curriculum decision making. Palmerston North, New Zealand: Dunmore Press.
- McGee, C. (2007). Understanding curriculum. In C. McGee & D. Fraser (Eds.), *The professional practice* of teaching (3rd ed., pp. 65–80). Melbourne, VIC, Australia: Cengage Learning.
- McPherson, G. (1972). Small town teacher. Cambridge, MA: Harvard University Press

- Ministry of Education. (2007). The New Zealand Curriculum for English-medium teaching and learning in years 1–13. Wellington, New Zealand: Learning Media.
- Ministry of Education. (2009). Relevant legislation, NEGs and NAGs. Retrieved from http://www.minedu.govt.nz
- Ministry of Education. (2010, March). New Zealand Curriculum Update 3. Retrieved from www.nzcurriculum.tki.org.nz
- Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62(3), 307–332. doi:10.3102/00346543062003307
- Pinar, W. F. (1975). *Curriculum theorizing: The reconceptualists*. Berkley, CA: McCrutchan.
- Prime, G. M., & Miranda, R. J. (2008). Urban public high school teachers' beliefs about science learner characteristics. In B. S. Stern & M. L. Kysilka (Eds.), Contemporary readings in curriculum (pp. 263–272). London, England: Sage.
- Reddan, G. (2006). Teacher curriculum decision-making in senior physical education. ACHPER Healthy Lifestyle Journal, 53(2), 16–20.
- Sabar, N., & Shafriri, N. (1982). On the need for teacher training in curriculum development. *Studies in Educational Evaluation*, 7, 307–315.
- Shawer, S. F. (2010). Classroom-level curriculum development: EFL teachers as curriculum-developers, curriculum-makers and curriculum-transmitters. *Teaching and Teacher Education*, 26(2), 173–184. doi:10.1016/j. tate.2009.03.015
- Smith, D. (2004). On the concept of perceived curriculum decision making space. In C. Marsh (Ed.), SACSA 20-20 Vision: 20 Articles from 20 years of Curriculum Perspectives Capturing Curriculum Debate in Australia (pp. 93–108). Deakin West, ACT: Australian Curriculum Studies Association.
- Smith, D. L., & Lovat, T. J. (2003). *Curriculum:* Action on reflection (4th ed.). Tuggerah, NSW, Australia: Social Science Press.
- Sofou, E., & Tsafos, V. (2009). Preschool teachers' understandings of the National Preschool Curriculum in Greece. *Early Childhood Education Journal*, *37*(5), 411–420. doi:10.1007/s10643-009-0368-2

- Stuart, C., & Thurlow, D. (2000). Making it their own: Pre-service teachers' experiences, beliefs and classroom practices. *Journal of Teacher Education*, 51(1), 113–121.
- Teddy, L., Bishop, R., Berryman, M., & Cavanagh, T. (2009). Te Kotahitanga: Addressing educational disparities facing Māori students in New Zealand. *Teaching and Teacher Education*, 25(5), 734–742. doi:10.1016/j. tate.2009.01.009