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CONTENTS

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Making links between learning in early childhood education and school using the 'key competencies' framework

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ABSTRACT: When children start school it is not just a transition to a new physical context, but also an entry point to a new 'culture' where aspects of teaching, learning and assessment are different, and hence what it means to be a learner is constructed differently. In recent years, there has been increasing interest in making links between school learning and prior to school learning, but considerable debate about how this can be achieved, given the systemic differences between the two sectors. This paper explores some of the issues for teachers and considers the potential of the current curriculum developments to enhance these links.

Recent literature suggests that there is a tension in several countries, including the UK, Australia and Aotearoa New Zealand, between the early childhood curriculum and the pressure to 'prepare children for school', especially in the basics of literacy and numeracy (Anning, Cullen & Fleer, 2004). This creates dilemmas for early childhood and primary school teachers, both of whom face conflicting messages about appropriate pedagogy and the place of subject knowledge in the early years (Gifford, 2004). Early childhood education in Aotearoa New Zealand is focused on learning dispositions (Anning et al., 2004; Carr, 2001), an approach that is increasingly evident in the school sector, where for many teachers engaging children as lifelong learners and considering the 'how' as well as the 'what' of learning have gained importance (Carr & Peters, 2005; Hill & Robertson, 2004). Nevertheless, teachers in both sectors may experience challenges in connecting learning in early childhood to the approach taken in school. This paper considers why such tensions have arisen and explores possibilities afforded by the current curriculum review for making stronger links between learning in early childhood and at school. Although mathematics is focused on specifically, there are implications for other learning areas.

Early childhood curriculum

In Aotearoa New Zealand, the early childhood curriculum *Te Whāriki* (Ministry of Education, 1996b) covers education from birth to school entry, while the school curriculum, the *New Zealand Curriculum Framework* (NZCF) (Ministry of Education, 1993b) covers learning during the school years. These two documents were developed during a similar time frame, with the draft version of *Te Whāriki* being published in 1993 (Ministry of Education, 1993a), the same year as the NZCF. However, the approaches underpinning these curricula are very different, as are aspects of the history and philosophy of the two sectors. This has created a situation where, when children start school, it is not just a transition to a new physical context but also an entry point to a new 'culture' where aspects of teaching, learning and assessment are different, and hence what it means to be a learner may be constructed differently.

Although at the time it was written there was pressure to align the early childhood curriculum with school, this was resisted (Carr & May, 1993). In fact, much of the motivation for developing an early childhood curriculum came from a concern that *not* defining a curriculum would lead to the school curriculum moving downwards (May, 2001). In considering links between early childhood and school it is important to remember that an early childhood curriculum "should not be predetermined by a school curriculum because the school curriculum is not intended to be appropriate for the learning needs of infants, toddlers and young children" (Brewerton, 1996, pp. 14-15).

The process of early childhood curriculum development was a joint endeavour between Margaret Carr and Helen May, co-directors of the early childhood Curriculum Project, and Te Kohanga Reo Trust. There was wide consultation with the early childhood sector (Mutch, 2001). A decision was made early in the process that the curriculum would not be about content, but would "provide a framework for action, guided by philosophical principles. Underlying these principles were universal goals and beliefs about the well-being of children and the culture of Aotearoa New Zealand as it affected early childhood care and education" (Te One, 2003, p. 32). The title of the resulting document, *Te Whāriki,* refers to "a woven mat for all to stand on", and this is a central metaphor for the early childhood curriculum (May, 2001, p. 245). The framework is woven from the curriculum principles of empowerment, holistic development, family and community and

relationships, and the curriculum strands of well-being, belonging, contribution, communication and exploration. *Te Whāriki* is not aligned to traditional subject areas, but provides an "integrated foundation" for each child's development (Ministry of Education, 1996b, p. 15).

The school curriculum and a focus on literacy and numeracy

In contrast to *Te Whāriki,* the current NZCF is based on more traditional 'Essential Learning Areas' (such as mathematics, science, social studies), 'Essential Skills' (e.g. numeracy skills, communication skills, physical skills, problem-solving skills) and 'Attitudes and Values' (Ministry of Education, 1993b). For each of the seven 'Essential Learning Areas' there is a separate curriculum document. Achievement objectives define what students should be able to achieve at each level.

The conceptual frameworks of the school and early childhood curriculum documents are therefore very different and this has important implications for the ways in which learning is viewed and assessed in the two sectors. In addition, education in the early years of school has been influenced by the 2001 school *National Administration Guidelines,* which stated that priority should be given to "student achievement in literacy and numeracy, especially in years 1-4" (1, i, b, Ministry of Education, 2001b).

Prioritising literacy and numeracy in schools was part of a wider Literacy and Numeracy Strategy, which aimed to provide a common set of principles to underpin policies and practice. The Ministry of Education (2002c) explained that three key themes were used as an organising framework. These are:

- raising expectations for learners' progress and achievement;
- lifting professional capability throughout the system so that everyone plays their part in ensuring that the interaction between teacher and learner is as effective as possible; and
- developing community capability – encouraging and supporting family, *whānau and others to help learners*.

The background to these changes was the low achievement in mathematics of New Zealand students when compared internationally on the Third International Mathematics and Science Studies (Garden, 1996; 1997), and research that suggested a poor match between children's capabilities and the mathematics they were offered at school (see Ministry of Education, 2001a).

The Ministry of Education focused its attention on enhancing student performance in mathematics through "improving the professional capability of teachers" (Ministry of Education, 2004b, p.1). In the school sector this led to the Numeracy Development Projects, which included the Early Numeracy and the Advanced Numeracy Projects, and smaller projects in Year 7-8 and 9-10 (see Young-Loveridge & Peters, in press, for an overview of some of these developments). The emphasis in the Numeracy Development Projects is on children developing powerful mental strategies (involving part-whole reasoning), before standard vertical algorithms are introduced. A key element is a developmental framework that describes children's increasingly sophisticated concepts about number, and strategies for problem-solving moving from 'emergent' through to 'advanced proportional part-whole' concepts (see Ministry of Education, 2004c).

The early childhood response to the Literacy and Numeracy Strategy took a different approach. Based on the definition of numeracy underpinning the Numeracy Strategy, which states: "To be numerate is to have the ability and inclination to use mathematics effectively in our lives - at home, at work, and in the community" (Ministry of Education, 2001a, p. 1) an early childhood working group set up by the Ministry of Education developed a framework for use in early childhood that is consistent with the principles and strands of *Te Whāriki*. The group explored a metaphor of lenses to allow specific aspects of mathematics to be illustrated within authentic meaningful activities. The aim was to foster children's inclination and ability to use a range of mathematics, drawing, where possible (through relationships with families and communities), on the rich mathematical heritage of their own culture(s).

Developmental frameworks

The focus on developmental progressions that underpins the numeracy projects is also evident in the work of the school Exemplar Project in mathematics (see for example, Ministry of Education, 2002b). In general, although New Zealand teachers have more flexibility than those in many other Western countries (Hill & Robertson, 2004), the approach that dominates in the school sector, especially in mathematics, means that early school education is more prescribed than in early childhood, with assessment of performance against narrower targets. The intention is to show possible pathways (Chamberlain, 2001) and many teachers have found specific frameworks and benchmarks useful as a guide to practice and ensuring their programme's efficiency (Timperley, Robinson & Bullard, 1999; Thomas & Ward, 2002). However, the status of such frameworks is worthy of reflection. Universal, decontextualised developmental theories create abstract maps of what children 'are' or 'should be' like. The classifications and categories in such theories provide descriptions of children that can "end up replacing the richness of children's lives and the inescapable complexity of concrete experiences" (Dahlberg, Moss & Pence, 1999, p. 36).

Assessing against developmental progressions can lead to those who do not fit the norm being pathologised, perhaps blaming either the child or family for perceived deficits (Burman, 1994). It can also lead to pressure "to achieve and to bridge gaps that exist on entry to school" (Phillips, McNaughton & MacDonald, 2002, p. 48). Such an approach, emphasising the achievement of narrowly defined outcomes, may overlook the child's competency in other areas and can position children within the classroom culture in ways that are detrimental to their long-term progress (Peters, 2004a). For example, Anna, one of the children in my PhD research, had difficulty with letter recognition on entry to school. Alphabet knowledge clearly acted as an informal norm in this context, and Anna was perceived by her teacher as having difficulties with reading and writing. This became a focus for intervention and, based on well-meaning advice from the school, Anna's mother struggled to fill in the gaps:

> She doesn't even know the letter 'm' and yet we've talked about the letter 'm' every time we've come down the road. 'There's 'm' for McDonalds' but the two haven't connected. ... As I said to her [teacher] after the weekend 'Look we've worked on 't' and 'q' all weekend and she still doesn't know them. We've had fun games and finding it in books... taking out the pieces of her jigsaw puzzle and seeing if she can remember which one it is and doing the tongue twister rhymes, and if I point to the 't' or the 'q' she still doesn't know what they are' (Peters, 2004a).

Anna was positioned in a way that highlighted her difficulties and overshadowed her expertise in other areas. It appeared that her social status both contributed to, and was affected by, this positioning and she received little teacher or peer support during her early weeks at school. Her experiences began to impact on her view of herself as a learner and her

willingness to engage in literacy activities. After being enthusiastic to start, by her third week Anna declared, "I hate school. I only like the playing and the eating. I don't like the writing ", a view that persisted for some time. Anna, and other children like her, illustrate McNaughton's (2002, p.17) view that schools can become "risky places" for children if their expertise from home does not fit with the expertise recognised by their school.

While identifying children's ability in specific areas can be useful, it is important not to overlook the fact that the goals and related progressions that underpin all assessments are just one of many possible ways in which learning can be constructed. In practice, therefore, as an approach intended to raise expectations for learner progress and achievement (Ministry of Education, 2002c), assessment against a single, socially constructed framework may not meet its aims for all children. This has already been indicated in the 2004 evaluations of the numeracy project, which showed that differences between groups of different ethnicity, gender, and socio-economic status had increased slightly by the end of the project. The so-called "Matthew Effect" (with the rich getting richer and the poor getting poorer) indicated that more work needs to be done to help teachers more effectively meet the learning needs of children of Māori and Pacific Islands descent, girls, and students in low SES schools (Young-Loveridge, 2004). Broader frameworks for considering their experiences may be beneficial. For example, schools in the Great Expectations project, where diverse students were successful, incorporated academic expectations into a climate that was also focused on holistic approaches, which included fostering positive attitudes and motivation to learn, and was not restricted to narrowly defined academic targets (Hill & Robertson, 2004).

A FOCUS ON LEARNING DISPOSITIONS

In contrast to the learning areas of the school curriculum, although *Te Whāriki* acknowledges broad developmental progression, in its integrated approach it draws more on sociocultural and ecological theories, and avoids separate learning areas or fine-grained curriculum progressions. This posed challenges for the development of new forms of assessment that would ensure that the processes were in the interests of children and families and fit alongside the principles of the curriculum (Carr, Podmore & May, 1998). In early childhood, assessments are required to:

- reflect the holistic way that children learn;
- reflect the reciprocal relationships between the child, people and the learning environment;
- involve families; and
- enhance children's sense of themselves as capable people and competent learners (Ministry of Education 1996a).

Check-listing skills and strategies are incompatible with these requirements, and early childhood educators have focused on looking not only at the individual but also acknowledging the role of the context and the child's interactions with others (Fleer, 2002; Fleer & Richardson, 2004). In Aotearoa New Zealand, Margaret Carr's Learning Story approach, focused on learning dispositions, has been particularly influential. This, and other narrative forms of assessment for learning, are illustrated and discussed in the *Kei tua o te pae* resource (Ministry of Education, 2004a) that was supplied to schools and early childhood centres in 2005.

Carr (2001) documented the development of an approach to assessment that reflects the importance of fostering both skills, and the inclination to use them. She described the dispositions of courage and curiosity, trust and playfulness, perseverance, confidence and responsibility, and their relationship to the strands of *Te Whāriki*. These, and the actions and behaviours associated with each disposition are shown in Figure 1. The actions and behaviours are: taking an interest, being

Strands of Te Whāriki	Learning Dispositions	Actions and Behaviours
Belonging **Mana Whenua**	**Courage and Curiosity** To find something of interest here	**Taking an interest**
Well-being **Mana Atua**	**Trust (and Playfulness)**	**Being involved**
Exploration **Mana Aoturoa**	**Perseverance** To tackle and persist with difficulty or uncertainty	**Persisting with difficulty, challenge and uncertainty**
Communication **Mana Reo**	**Confidence** To express an idea, a feeling or a point of view	**Expressing a point of view or feeling**
Contribution **Mana Tangata**	**Responsibility** For justice and fairness, and the disposition to take on another point of view	**Taking responsibility**

Figure 1.
The relationship between curriculum strands, dispositions and actions and behaviours (adapted from Carr et al., 2000, p. 9)

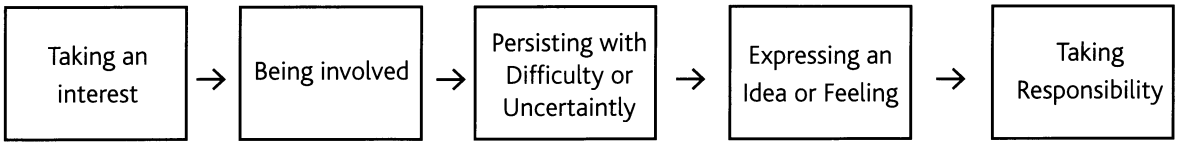

Figure 2.

A Learning Story sequence (Carr, 2001, p. 98)

involved, persisting with difficulty or uncertainty, expressing an idea or feeling, and taking responsibility. Together the sequence described here has been called a Learning Story. This is illustrated in Figure 2.

The Learning Stories are "a pedagogical tool for: the transformation of participation (encouraging further and deeper learning), the prevention of narrowing of learning, the transmission of classroom culture to the participants", and the reframing of deficit narratives to more positive stories (Carr, 2001, p. 101). Carr (2001) contrasted this with what she calls her "folk model" of assessment, which checked children's performance against a list of fragmented and context-free skills. While a check-listing approach foregrounds deficits and gap filling, the Learning Story is a credit model aimed at enhancing dispositions.

If we return to the example of Anna (who experienced difficulties with letter recognition) the assessments used on entry to school did not pick up her enthusiasm for writing, displayed as a four-year-old in her copious notebooks of scrawl, which could have provided an important foundation for literacy at school. Nor did it pick up on Anna's initial joy in bringing books home to 'read' to a younger child. Working from a credit-based model, Anna would have been positioned differently with her teachers and peers. She could have been helped to build on her existing interests and skills, instead of being faced with tasks she was unable to do successfully, leading to a dislike of literacy activities. Also, an awareness of Anna's experience within the socio-cultural milieu of the classroom would give a better understanding of Anna's difficulties, and indicate strategies for enhancing her learning (see Peters, 2004a).

It has been suggested that with the more holistic focus on learning dispositions provided by *Te Whāriki,* early childhood educators in New Zealand have become nervous about acknowledging content learning in early childhood education (Anning et al., 2004). The nervousness, if it exists, seems to stem not from issues of content per se, but from approaches to pedagogy and assessment that focus on specific isolated skills, and overlook or inhibit children's development as competent learners.

The assessments used in early childhood education mean that many children will have a rich portfolio documenting aspects of their learning in their prior to school years. The nature of these assessments is illustrated and explained in *Kei tua o te pae* (Ministry of Education, 2004a). However, research suggests that new entrant teachers may not always get to see this information (Jones, 2003; Peters, 2004a; Winter, 2005) as information is passed to schools at the families' discretion (Jones, 2003). When it is shared, new entrant teachers may find the format unfamiliar. Many will be more interested in children's performance on tests of discrete skills than in the dispositional framework that underpins the information. For example, Wright and Molloy (2005) found that primary teachers valued information about discrete skills and abilities, while early childhood teachers were more focused on relationships and the 'how' of children's learning. This can create tensions for teachers in both sectors as they try to make connections between the different approaches. This is unfortunate because the discrete skills that are assessed on school entry are not the only aspects that new entrant teachers value in children's learning. However, assessment practices, and feedback to parents based on these, tend to prioritise them in the children's transition experience (Peters, 2004a).

The key competency framework

In 2000, the Ministry of Education began a major review of the New Zealand school curriculum, in order to take stock of the previous decade's curriculum developments and their implications for teaching and learning. The findings and recommendations from this review were published in the *Curriculum Stocktake Report* (Ministry of Education, 2002a). The current *New Zealand Curriculum/Te Marautanga o Aotearoa Project* involves redeveloping the New Zealand curriculum and *Te Marautanga o Aotearoa* as a result of these recommendations.

One of the areas where changes were suggested was in relation to the essential skills in the NZCF. The *Curriculum Stocktake Report* included the recommendations that the number of essential skills should be reduced, that the skills should also include attitudes, and that "there should be three dimensions of these skills and attitudes – the capability to use skills, discernment in use, and willingness to use skills" (Ministry of Education, 2002a, p. 63). Clark (2004) noted that what was proposed no longer met the definition of a skill. To capture this fundamental change, in a background paper for the curriculum project, Brewerton (2004) proposed that the new curriculum should include key competencies. She drew on the OECD notion of competencies "that contribute to a successful life and a well-functioning society" (Rychen & Salganik, 2003, p.54). The OECD Defining and Selecting Key Competencies (DeSeCo) project had developed three categories of key competency: interacting in socially heterogeneous groups; acting autonomously; and using tools interactively. The objective was to focus on *key competencies* that were "relevant across different spheres of life and important for all individuals" (Rychen & Salganik, 2003, p. 54). This helped to distinguish *key* competencies from *specific competencies, which may be important to a successful life for some people in specific contexts, but are not important for everyone.*

Through a process of co-construction and extensive sector consultation the OECD competencies were adapted to five key competencies for the Aotearoa New Zealand context. These are still tentative but currently include: Relating to others; Managing self; Belonging; Pursuing knowledge; and Using languages, symbols and texts.

Exploratory work by teachers to consider what the key competencies might mean in practice (Carr & Peters, 2005) indicated that the key competencies fitted with the teachers' existing 'big ideas' of teaching and the teachers found them useful and relevant in planning and teaching, and in sharing children's learning with others.

> The development of the key competencies has huge potential

and will allow teachers greater flexibility to meet children's needs. We were excited that the competencies are more than a checklist and will, in many ways, be difficult to measure. These competencies provide scope and challenge and allow teachers to reach the essence of teaching and learning more readily and holistically, thus ensuring emphasis is placed on skills - more so than knowledge. (New entrant teacher)

> We [teachers] both found that this format [a planning format including Key Competencies and Specific Learning Outcomes] enabled us to keep the needs of the children to the fore... As I have planned and taught a number of units using this I have made a significant change from content to skill teaching. I now focus on the "how" of learning rather than the "what" of learning, and use the content as the vehicle for teaching skills (i.e. Key Competencies). (Primary School Teacher)

Using the competency framework in planning and assessment allowed teachers to focus on aspects of the children's learning that the teachers felt were of particular importance. Learning areas were woven into the competency framework. Planning and assessment at the beginning school level foregrounded the competencies and literacy and numeracy. One teacher trialed this framework, using it to report to parents, and found it addressed the "most crucial concerns" parents had about children's early experiences in school. Information about children's progress in academic subjects, which had previously been the focus of these reports, was available in children's work samples, while the competency framework made visible other important learning. A number of parents in different schools expressed support for the teaching approaches that had the competency framework in mind (Carr & Peters, 2005).

ECE Curriculum Strands		Key Competencies
Mana whenua	Belonging	Belonging
Mana atua	Well-being	Managing self
Mana Aoturoa	Exploration	Pursuing knowledge
Mana reo	Communication	Using language symbols and texts
Manatangata	Contribution	Relating to others

Making the links between early childhood education and school

Although not the same as the strands of *Te Whāriki*, the key competencies provide a natural link between the strands of the early childhood curriculum and the school curriculum. Carr (2005, p. 8) demonstrated this alignment:

Teachers in both sectors have found that the key competencies offered a tool for developing links between early childhood education and school (Carr & Peters, 2005). They provided a common language to talk about children's learning, and frameworks for planning and assessment were developed, which linked the links the strands of *Te Whāriki* and the proposed competencies.

> Relationships are founded on the ability to communicate.... Beliefs about what is valued learning appear to be guided by teachers' perceptions of their responsibilities in relation to curriculum documents... The curriculum project provides the opportunity to ensure key competencies in the school curriculum are given a higher priority, particularly in the early years of schooling. The primary sector's use of key competencies will resonate with the early childhood's use of the dispositional framework and voilŕ, a language that we have been waiting for, one that links the sectors together (Early Years Professional Development Provider).

Key competencies will require forms of assessment at school that emphasise the distributed nature of the competencies, which are a product of the interaction of individuals and the contexts in which they operate. Further, competencies cannot be measured directly; they have to be inferred (Rychen & Salgnik, 2003). School teachers who have begun to explore this have found that narrative assessments such as Learning Stories, where children's learning is documented in authentic, meaningful activities, offer the potential to capture both the key competencies and subject knowledge (Carr & Peters, 2005). With similar theoretical and practical approaches to learning and assessment, teachers in both sectors will be able to clearly see the link between learning in early childhood and at school.

At the same time, the next series of *Kei tua o te pae* (in preparation) will include early childhood exemplar booklets relating to mathematics and literacy. This resource will help early childhood educators to recognise and respond to content learning (such as mathematics) when it is appropriately woven into the sociocultural approach of *Te Whāriki,* and will hopefully reduce any potential concern Anning et al. (2004) suggested that they might have about doing so.

Therefore, although the main connection between learning in early childhood education and school is likely to be through the competency framework, there are also both implicit and explicit links within *Te Whāriki* to the learning areas of the school curriculum. In an earlier paper (Peters, 2004b) I demonstrated how dispositions, competencies and mathematics could all be identified within a Learning Story. Progress can be envisioned as a complex array of contributing variables, rather than a stage-like progression against a single developmental framework. Knowledge of the early achievement objects of the school curriculum may assist early childhood teachers in exploring the content areas of children's learning within the framework provided by *Te Whāriki*. For example, the Mathematics and Statistics achievement objectives in the school curriculum can be used to consider children's mathematics within a Learning Story. However, these should be acknowledged as culturally-constructed tools that provide only part of the picture. The images of children could change if different cultural frameworks were applied. Hence, rather than deficit models of assessment, diversity can be acknowledged, and alternative strengths recognised.

Conclusion

In recent years there has been a growing interest in making links between school learning and prior to school learning, but considerable debate about how this can be achieved. It is important that any attempt to make links between learning in early childhood services and school takes account of the systemic differences between sectors, and the ways in which these can work against forming connections. 'Making links' can be seen as a threat to the different ways of working with children that are characteristic of each setting (Neuman, 2002). Bias and suspicion can also work against developing communication between the two sectors (Kagan & Neville, 1996). Curriculum change in Aotearoa New Zealand offers an exciting opportunity to overcome some of these difficulties. Making connections between the strands of *Te Whāriki* and the key competencies in the revised NZCF respects the existing 'cultures' of both early childhood education settings and school, whilst offering a powerful framework for crossing the border between the two, so that children's learning is enhanced.

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