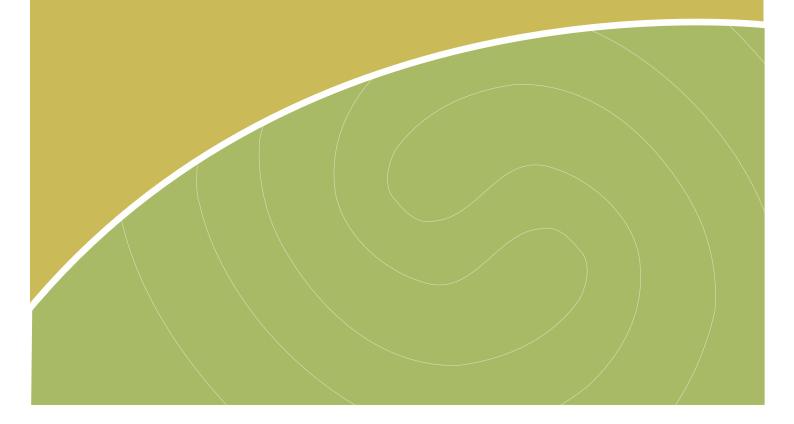# Swimming out of our depth?
Leading learning in
21st century schools

Ally Bull and Jane Gilbert

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Swimming out of our depth? Leading learning in 21st century schools[1]

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Over the last 15 years or so there has been a paradigm shift in international thinking about education. This paradigm shift[2] was driven by an awareness of the massive social, economic and technological changes (in kind, not just degree) taking place in the world outside education, and the exponential increase in human knowledge that has resulted from these changes. The role and purpose of "traditional" forms of education, in a world defined by change, and by increasing complexity, fluidity and uncertainty, has been questioned, as has its ability to foster the skills needed to solve the "wicked problems"[3] that are a feature of today's world.

From this we have seen the development of a body of work arguing for a major rethinking of how we "do" schooling. According to this work, known as the "21st century learning" literature, we need to think differently about what schools are *for*, about what students should learn in them and about how we should measure the "success" of all this. "Traditional" forms of education, it is argued, were designed to develop knowledge and skills valued in 20th century social and economic conditions, and are no longer appropriate in the 21st century environment. New approaches are needed if our young people are to develop the "dispositions" (to knowledge, thinking, learning and work) needed to productively engage in the 21st century world. Two key concepts inform this work. One is the idea that, as part of the Industrial

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[1]   The phrase "swimming out of our depth?" refers to the title of Robert Kegan's book, *In Over Our Heads: The mental demands of modern life* (Kegan, 1994)*.*

[2]   The term "paradigm shift" comes from Thomas Kuhn's influential book *The Structure of Scientific Revolutions* (Kuhn, 1970). Kuhn argued that science develops, not via an incremental process of building on existing knowledge, but through the successive replacement of one "paradigm" (or way of thinking) by another. When paradigm shifts occur there is a complete break with the "old" ways of thinking and assumptions, a process that produces new problems to be solved, and allows old problems to be seen in new ways.

[3]   The term "wicked problem" is now widely used to refer to very complex problems that are difficult or impossible to solve, or even define, using the tools and techniques of one organisation or discipline. Because they have multiple causes and complex interdependencies, efforts to solve one aspect of a wicked problem often reveal or create other problems. They are common in public planning and policy, where any solution is likely to require large numbers of people to change their mindset and/or behaviours. The standard examples of wicked problems include climate change, natural hazards, public healthcare, nuclear energy and waste, but the term is also widely used in design and business contexts. "Tame" problems, in contrast, while they can be highly complex, are definable and solvable from within current paradigms. See Conklin (2006) and Frame and Brown (2008).

to Knowledge Age transition, there has been a change in the meaning of *knowledge*.[4] The second key idea is the need to rebuild our education system around what we now know about how people *learn*.[5]

These ideas have influenced recent educational policy developments. For example, the "vision" of New Zealand's current national curriculum document[6] is to develop "young people who will be confident, connected, actively involved life-long learners" (p. 7). "Learning to learn" is a central "principle" underpinning all curriculum decision making, and the curriculum's aim is to develop certain "key competencies". These competencies are "more complex than skills": they "draw on knowledge, attitudes, and values in ways that lead to action" (p. 12). This emphasis on learning "dispositions" and "action" competencies (instead of the earlier focus on knowledge, skills and attitudes) signals an official recognition of the need for change. The curriculum document is well regarded by teachers, and widely seen as, at least potentially, "transformative".

But how are the signals it gives being interpreted by teachers, school leaders and other education stakeholders? *Is* the new curriculum transforming how we "do" schooling? *Is* it changing the sector's "ways of thinking"? Or has the old jargon simply been replaced by new jargon, leaving the old ways of thinking intact?

The New Zealand Council for Educational Research's (NZCER's) research programme includes a number of projects designed to investigate these questions. This paper describes preliminary findings from one of these projects, known as *Leading Learning*. This project started with the following general questions:

- How difficult *is* it for teachers acculturated in 20th century ways of thinking about education and its purpose to "shift their paradigm"?
- Do today's teachers *have* the dispositions and competencies they are being required to develop in their students—given that their schooling was not designed to develop these?[7]
- What kinds of learning environments would teachers need to develop these competencies and dispositions?

The work described in this paper was an attempt to gather some "baseline" information on the kinds of learning environments being provided for teachers now, in the second decade of the 21st century. Our aim was to explore how teachers are experiencing—and thinking about—these environments, and to look at the extent to which these experiences are scaffolding their transition into 21st century teaching.

If 21st century schooling's main goal is to build students' "learning capacity", to help them develop into life-long, active, independent learners, then teachers need to be "learning coaches"—a role that is very different from that of a traditional teacher. Learning coaches may provide knowledge and develop skills: however, their main role, as more experienced learners, is to provide the kinds of support that will help their students reach their learning goals. Learning coaches, like their students, are also learners.

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[4]   See Gilbert (2005).
[5]   See Leadbeater (2011). See also Bolstad and Gilbert (2012) for a summary of this work.
[6]   *The New Zealand Curriculum.* Ministry of Education (2007).
[7]   As Ritchhart (2002) argues, it is hard to cultivate in others a disposition you do not possess yourself.

They are also engaged in trying to improve their learning capacity—or mental "fitness".[8] They are not experts in everything their students need to know, but they are experts in working out, *with* their students, how to do something, how to find out something or how to use something to do something new. A key part of their role is to model the confidence, openness, persistence, commitment and pleasure in the face of uncertainty that students need to be good learners.

A second key aspect of 21st century schooling is the new orientation to knowledge. In "knowledge age" schools, the teacher's role is *not* to support students to passively acquire and reproduce existing knowledge. Rather, it is to support them to actively *interact* with knowledge: to "do things with it"—to understand, critique, manipulate, create and transform it. Teachers need to scaffold students' intellectual curiosity, their problem-posing and problem-solving ability and their ability to build *new* knowledge—together with others.[9]

For teachers acculturated in the 20th century view of schooling, learning and knowledge, this is a new approach, one that does not build on their experiences. Adopting it requires them to rethink their ideas about *what* they teach and *why*, and to rethink how they *are* as a teacher. It requires them to "re-situate" themselves professionally, not as a "traditional" teacher, but as a highly-skilled, advanced learner.[10] This obviously involves something far more than adding new knowledge and/or new technical skills to teachers' existing repertoires: it requires teachers to "shift their paradigm"—to break with and replace their past ways of thinking with a totally new understanding of their role and its purpose. This is a major undertaking, and if we are to do this teachers need new kinds of professional learning.

Today's teachers, if they are to meet the needs of 21st century learners, need to develop *what* they know, but they also need to develop *how* they know.[11] The 21st century learning literature focuses on the need to develop *students'* cognitive, inter- and intra-personal capacities: however, a necessary precursor to this is that *teachers'* capacity for, and awareness of, their own learning needs to be developed. Moreover, as Fullan (2005) points out, changing individual teachers will not be enough.

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[8] See Claxton (2002, 2004) for an extended description of this idea of schools as "mental gymnasia" designed primarily to build students' "learning power".

[9] See Gilbert (2005), Bolstad and Gilbert (2008), Bereiter (2002), Scardamalia and Bereiter (2006) for the argument that scaffolding the capacity for "knowledge-building" and/or "doing things with knowledge" should be *the* central purpose of schooling in the Knowledge Age.

[10] The concept of "re-situation" (Edwards, 2005; Eraut, 2000, 2008; Franken, in press) is helpful in representing the challenges involved when people who are highly competent professionals need to transition to new roles in new areas that require new knowledge and skills, and a new professional "identity", while also maintaining, using and, where necessary, modifying their existing expertise. Eraut (and the other authors cited above) use the term "re-situate" to draw attention to the "identity work" required in such contexts, and to distinguish this work from the ongoing "adjustments" in perspective that are a normal part of "everyday" professional learning.

[11] Adult developmental theorists (see, for example, Kegan, 1994) argue that to manage the demands of today's complex world, all adults need to be continuously adding to *what* they know (informational learning), but they *also* need to be developing *how* they know (transformational learning). See also Kegan and Lahey (2009). Drago-Severson (2012) draws on this work to develop a model of teacher professional development. She uses the terms "transformational learning" and "teacher growth" interchangeably to mean "increases in cognitive, emotional (affective), interpersonal and intrapersonal capacities that enable adults to better manage the demands of learning, working, leading and living" (p. 5).

Change needs to take place across the system, through purposeful interaction between individuals at all levels. Twenty-first century teacher professional development needs to combine and integrate individual and organisational development: it needs to build individual learning, but it *also* needs to focus on individuals working together—to build their current "community of practice" as teachers, but also to move forward together in "learning communities".[12]

Our starting point for this project was that 21st century professional learning environments need to provide opportunities for teachers to work together in "communities of practice" *and* in "learning communities". The goal of this is to allow teachers to re-situate themselves as *learners*, as *experienced* learners who learn *with others* how to help *less* experienced learners build their learning capacity.

The distinction between "community of practice" and "learning community" is important here. A community of practice deepens and expands members' collective knowledge of their shared endeavour, through ongoing interaction. It allows members to set and uphold professional standards, and to initiate new members into these agreed ways of knowing and doing. Thus a community of practice focuses on developing and sustaining current "best practice".[13]

"Learning communities", on the other hand, have *change* as their central purpose. In learning communities individuals work together to create new solutions and new ways of being. Existing assumptions are challenged and people are supported and stretched to see their practice in new ways. The aim of a learning community is to build the disposition for growth, and the capability for ongoing change—in the community's individual members, and the organisations they work in.[14]

It seems to us that building 21st century schools requires teachers to be working in *both* of these kinds of environments: however, the challenge for today's schools is to find a balance between these two rather different endeavours.

In the *Leading Learning* project our aim was to explore the extent to which three case study schools have been able to provide opportunities for teachers to participate in communities of practice *and* learning communities. We were interested in finding out how school leaders are *thinking* about the learning environments they are creating for their staff, and how teachers are *experiencing* these learning environments.

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[12]   See Fullan (2005) and Earl and Hannay (2009).

[13]   The "community of practice" concept and its purposes are described in Lave and Wenger (1991), Wenger (1998) and Rogoff, Turkanis, and Bartlett (2001).

[14]   The "learning community" (or "learning organisation") concept first emerged in the leadership and management literature: see, for example, Senge (1990), Kofman and Senge (1993), Senge et al. (1999), but it is now widely used in educational contexts. See Baker (2010) for a discussion of its use in an educational organisation. However, the use of "learning organisation" and "learning community" as interchangeable terms in educational contexts is not without its critics: see Fielding (2001) for an extended discussion.

Methodology

We invited three quite different schools to participate in the project. School A was chosen because its most recent Education Review Office (ERO) review suggested that it was providing an excellent professional learning environment for its staff. Schools B and C were chosen because they are attempting to provide very different types of education for their students—one within the mainstream system, and one outside. Between them the three schools cater for students at all levels of the school system.

We interviewed the leadership team and some teachers in each school to gather information on the leaders' thinking and the teachers' experiences of their professional learning environment. We also looked at the schools' documentation to see how important teacher professional learning is in each school, how it is linked with other aspects of school operation and what kinds of learning are emphasised.

We observed several professional learning sessions at School A, but only one session each at Schools B and C (however, a researcher attended a conference for teachers run by staff at School B). At these sessions we tried to focus on the kinds of learning experience teachers were having. We noted examples of teachers asking questions, considering different perspectives and/or making links between their current learning session and their previous experiences. We were also interested in situations where teachers appeared to be playing an active role in their own learning, and those where they seemed to be passively receiving the wisdom of others. In the next section of this paper we describe each of the three schools. We then outline our impressions of the teacher professional learning we saw at the schools and summarise what the teachers told us about their experiences.

School A

School A is a decile 3 contributing (Years 1–6) primary school situated in a major urban area. Of its roll of about 260 students, 53 percent are Pākehā, 18 percent are Māori, 11 percent are African, 5 percent are Samoan and 13 percent are "other" ethnic groups.[15] The school is part of a school improvement cluster. The school's vision is "Empowering learners for life". According to its most recent ERO report:

> Action research is an established strength of the school. Staff are empowered to develop and trial new teaching initiatives. Professional learning and development is strongly supported by involvement in the local cluster literacy initiative. There is a strong emphasis on teachers as learners supported by regular reflection. Self review is well embedded.

As part of the project described here, an NZCER researcher observed several professional learning sessions at School A during term 1, 2011. There were two consecutive "teacher only" days at the beginning of the school year. On the first day, all staff attended their school improvement cluster's "mini conference" at the local high school. The format of the mini conference was quite traditional, with a mix of keynote sessions and teacher-led workshops. On the second of the two days, School A's teachers participated in an all-day meeting at their own school. This day started by focusing on the set of

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[15]   These figures were taken from the school's most recent ERO report.

principles for curriculum development that the school has developed. The principal presented the staff with student views (collected at the end of the previous year) of how well the principles were enacted at the school. The focus of the day's second session was behaviour management, and in the third session staff reflected on the previous day's mini conference. Following this (the majority of the day) teachers looked at student achievement data in literacy, and identified students in their new classes who were likely to be "at risk" in writing.

In addition to these two teacher only days at the beginning of the year, School A had many regular meetings during the term with a focus on professional learning. Some of these meetings involved the leadership team, some involved the whole teaching staff, some involved teaching teams and others involved the wider school improvement cluster. The teachers we interviewed also identified other professional learning opportunities—including attending conferences and courses, speakers coming into the school, tutor teacher meetings, informal discussions and reading articles and research reports.

According to the school's strategic plan for 2010–14, the school has five strategic themes, one of which is professional learning. The school commits to providing staff with professional learning which "affects their practice" and the inquiry cycle for teachers is considered the core focus of professional learning. The school's performance management system focuses on teacher inquiry. It requires each teacher to set a personal goal that is aligned with the school's values and beliefs and the professional standards. Each teacher also participates in literacy and numeracy evidence-based inquiries, and participates in ongoing action research within a curriculum work group. Teachers are expected to keep a reflective journal.

According to the principal, teacher professional learning at the school has both compulsory and voluntary aspects. For example, the school sets the direction for professional learning (related to the focus of the wider school improvement cluster), but staff have considerable flexibility in designing and carrying out their own inquiries. At times they use a "market place" approach to professional learning where teachers select inquiries and form groups with others with similar interests. However, in the principal's view, "there is no room for professional learning that doesn't allow teachers to make connections to their practice". Most of the professional learning happens at the school, but sometimes external courses are offered that fill a particular need. The school tries to always send two or more members of staff to any specific course.

The principal described a "distributed" and "evolving" leadership model in the school which is designed to provide opportunities for a range of different people to take leadership roles and share responsibility for professional development. The principal says she has learned that she does not have to be the key player in the school's professional development. She now sees her role more as participating and contributing to sessions—supporting session leaders by (for example) asking questions that the staff are not asking. She still thinks her role is pivotal, but different. She is now trying to upskill the others in the leadership team rather than providing the entire professional learning programme by herself. In the interview, the principal mentioned that she thought there was a need, both within the school and in the wider cluster, for middle management to develop more leadership skills. In her view these teachers are expert classroom teachers, but many need support to work with other adults. In relation to her own

professional learning, the principal says she gets most of it from her involvement in the school improvement cluster, although this can become insular. She is looking at joining with some other principals to set up an "Ariki" group.[16] In the past she has found her involvement in the experienced principals cluster group worthwhile.

We interviewed four teachers at School A. Two were experienced teachers and part of the leadership team, one was a provisionally registered teacher and the fourth was an early career teacher who had spent some time teaching overseas. All the teachers interviewed identified their personal inquiries as their most helpful professional learning. They said that they had "quite a lot" of autonomy in determining their own professional learning, but that it had to be linked to the school's focus.

All thought that everyone's contribution was valued and individuals had opportunities to lead in areas where they had strength. Teachers said that innovation and questioning were encouraged. One teacher said that this was a very innovative school and that was the main reason she had stayed there. (This school has several teachers who were first employed as beginning teachers and have stayed on.)

Teachers said that they felt the learning environment they experienced as teachers in the school was similar to the learning environments they provided for students in their classes. They said both teachers and students were involved in inquiry learning and both were encouraged to be "self-regulated learners". One teacher said "learning intentions" were made explicit for both students and teachers. Another teacher spoke of the need for both adults and children to experience a positive learning environment where everyone was treated with respect and listened to and where dialogue was valued.

School B

School B is a newly established, purpose built, innovative senior high school that sets out to offer a curriculum for the 21st century. It was developed over three stages: Year 11 students only in the first year; Years 11 and 12 in the second year; and Years 11–13 in its third year of operation. It is a decile 10 school situated on the fringes of a major urban area. The current roll is 736 students and the ethnic composition is 68 percent European, 15 percent Asian, 7 percent Middle Eastern, Latin American, African, 5 percent Māori, 1.5 percent Pacific Island, 1 percent International and 2 percent "other" ethnic groups. The essence of the school's vision is to "nurture, inspire and empower each other to achieve highly and become good citizens".

The school's vision revolves around the following themes:

- the school as a community of learning with the student at its centre
- a school culture based on adult relationships and social connectedness
- a learning environment that uses a mix of learning modes, spaces and approaches
- interdisciplinary teaching teams and projects/topics
- a commitment to developing the whole student within an ICT-rich environment.

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[16] The Ariki project is a school leadership and development programme. See www.arikiproject.ac.nz for more details.

This school focuses on *who* teachers and students are now, and what they might *become* in the future, as well as on *what* teachers and students know and *can do* now.

At this school, the senior leadership team (the principal and four senior staff) and five teachers were interviewed for this project. Three of the teachers interviewed were experienced teachers (one of whom was new to the school), and two were second year teachers (one of whom was also a professional learning team leader). Because the school is new, there is a high number of beginning and new teachers. Teachers said they valued working in a school that is pioneering what 21st century learning might look like. These teachers had chosen, or been selected, to teach here because they were committed to making changes that would improve their practice and student learning. One teacher (a foundation staff member) chose this school from information posted on the website. He said: "I want to be part of it. It keeps me thinking. It gets me learning."

For the five members of the senior leadership team, the professional learning environment is the key to ensuring their school stays at the forefront of 21st century learning. As they put it, "We don't want in 10 years time to be an old school. We always want to be a new school." They plan to ensure they are always learning by focusing on "iterative inquiry" and incorporating learning opportunities into everything they do. The senior leadership team talked about the role of dissonance in creating teacher change, saying, "If they are not feeling slightly uncomfortable we may not be doing something quite right." Their goal is for professional learning to be integrated into teaching practice, rather than being seen as an extra. They say success is evident in the shared language and learning culture that is developing in the school.

Both the senior leadership team and the teachers at the school say that the most valuable professional learning takes place in the four weeks at the end of the year when all students are on examination leave. This is a major advantage of being a senior secondary school. The principal reports that the planning of the programme for this time is very thorough. It is designed to be an opportunity for staff to focus more deeply on the school's "big picture" vision and its culture. She believes that without this time, teachers' understandings of the processes of the school would be much more difficult, saying that she "can't see how else you can keep on the same track". The 4-week programme is designed to help teachers improve their teaching, mentoring, tutoring and management practices. It allows them to debrief, look at best practice and assess their classroom needs. There are opportunities to present workshops based on conferences attended during the year. Each year an external presenter is also invited. The choice of presenter is driven by the school's current need.

Other professional learning opportunities during the year are similar to those in other schools (attending workshops, conferences and university courses; observing and showcasing good practice in specialist subject and cross-curricular areas; whole-staff workshops instigated by staff inquiries; staff feedback from conferences; and professional learning for leadership roles from senior staff). As in many other schools, there is a focus on teacher inquiry. At School B this includes a whole-school approach to inquiry, and teachers also have their own personal inquiry projects. In 2010 the focus was on understanding the professional inquiry cycle itself, while in 2011 it was on improving student outcomes in external assessments. In 2012 the plan is to look at peer coaching. One teacher commented that this professional

inquiry focus is valued because the learning is from "the ground up, rather than just messages from on high". Teachers said that they valued their personal inquiry projects because they are "in the moment". One teacher had looked at how to improve classroom discussions. Another explored peer tutoring programmes (in which more able students tutor less able students). This was so successful that this teacher continued this project in the following year. At this school there is a focus on the teacher's role as mentor and tutor. Teachers are seen as specialist subject teachers *and* mentors/tutors. This means that teachers' professional learning needs to include knowledge of how to support students to plan their independent projects, structure investigations and develop 21st century competencies, as well as the more traditional subject and pedagogical knowledge.

This school has a networked leadership model.[17] There is a wide range of leadership opportunities for staff: for example, the specialist subject leadership role, leading tutorials, "impact projects"[18] and the professional inquiry focus groups. This distributed and networked leadership model means that staff work and learn with a wide range of people, and the senior leadership team hears the views of a wide range of teachers. According to our interviewees, the "teachers' voice" is a major driver of the school's professional learning programme. They say that "just about everything" they are introduced to "can be used in the classroom". The sessions we observed included strategies for mixing people in groups.[19]

The teachers we interviewed said that the school's open teaching spaces were a model for how students will work in the 21st century, but they also said that they provided important professional learning opportunities for them. They were able to watch good practice, but, because they could also be seen by other teachers, they tried to present their best practice at all times. As one teacher said, "As a teacher you don't get to slack off at all." The teachers said that this allowed new staff and beginning teachers to very quickly become familiar with the culture of the school. An additional spin-off of this arrangement is improved student behaviour: as one teacher put it, "Modelling the behaviour wanted works for students as well as for teachers."

Overall, the teachers at School B were very confident of their knowledge of 21st century learning and were comfortable about sharing this, hosting an Emerging Leaders "unconference" at the time we were working in the school.

School C
School C is a newly established "special character" secondary school (Years 7–13). It combines two schools that were already operating on one site under the leadership of one principal and one board of trustees. It is a decile 1 school with a school roll of approximately 360. The majority of the students have Māori, Samoan, Tongan or Cook Island heritage.

According to the school's website:

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[17] For more details on this, see Hipkins (2011).
[18] See Hipkins (2011) for more detail on the "impact projects" model.
[19] These strategies were "world café" and "speed dating", both of which were considered very useful by the teachers we interviewed.

Education and learning are changing and our children's futures will be very different from what we know now. We need to be able to prepare our young people for this information-rich, multicultural, global age where technology brings the world to our doorstep. In this future, knowing who you are and where you fit is going to be a crucial skill. This is the foundation of our [name of school] philosophy.

The school's vision is to develop "warrior scholars". The term "warrior scholars" means young people who have high academic achievement and a secure cultural identity, and who understand their rights and responsibilities to act as agents of change for their people, in their communities and in the wider society.

The learning environment in this school, for both students and adults, appears to support this vision. The school has developed its own unique model of learning, described on the school website as follows:

In this model another whole body of legitimate knowledge sits alongside what is mandated in the national curriculum or '**School Learning**.' We need to value this '**Self Learning**' just as highly as we value academic learning. Our children's languages, their cultural norms, how they 'live as Maori,' how they can learn and succeed 'as Maori,' or as Samoan, or whoever they are, how they develop a strong cultural identity, their wairua/spirituality, whanaungatanga/their connectedness—are all high-status learning, valid in their own right. Our third learning area is our '**Global Learning**' lens—which connects our young people to the many worlds and cultures outside school, and particularly to learning needed for the future through information and communications technology.

At this school, teaching is seen as something much more than simply applying techniques or strategies: it is a commitment by the whole person. The school's job description for teachers says that experienced teachers/management unit holders need to:

become 'RIDAZ', promoting, monitoring and reflecting outcomes …

As explained in a footnote to the job description, the term 'Ridaz':

is often referenced to hip-hop with the expression, 'ride or die', meaning that Ridaz are people who would sooner die than let their people down. Ridaz are consistently successful with a broad range of students. They risk deep emotional involvement with the great majority of their students and they are sometimes hurt because of those investments. The depth of their relationships with students allows them to challenge students and get notable effort and achievement.

We carried out two group interviews in the school: one with the school's leadership team (which included the principal) and one with a group of teachers (this group included two members of the leadership team). The principal was also interviewed individually. In addition, two NZCER researchers attended the first day of a youth symposium held at the school for Years 12 and 13 students.[20]

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[20] Although not formally a teacher professional learning session, the principal considered this symposium (which had been collaboratively planned) was a good example of how "learning from each other" is integral to the way the school works.

School documentation related to professional learning—such as the school's "critically conscious, culturally responsive teacher profile", and teacher evaluations of a recent conference—were also made available to us.

Both the leadership team and the teachers described a well-developed professional learning culture at the school: in fact the principal said, "I like to think everything we do is professional learning." Some teachers are enrolled in postgraduate courses (funded by the board of trustees) and, at the time we interviewed her, the principal had nearly completed her PhD thesis (which, she says, "describes the school's journey"). In 2009 she was the recipient of a travelling fellowship, which she said was an extremely valuable learning experience. Members of both the leadership team and the teachers group we interviewed thought the principal's professional learning had provided learning opportunities for them as well. They said that the principal's research was lifting the profile of the school, and that they now had many visitors coming in to see the school in action. They said that having to explain to visitors what they were doing helped to clarify their own thinking.

The school largely designs its own professional development programme. It has hosted its own conferences, where teachers have worked with social justice educators from overseas. They also have the usual teacher only days, staff meetings, team meetings, leadership meetings and so on. They sometimes work with outside professional learning and development providers (on topics such as the National Certificate of Educational Achievement [NCEA]), but they then adapt what they have learned to fit with the unique character of their school.

Other professional learning opportunities mentioned by interviewees included professional reading, being observed by colleagues and videoing and watching themselves teach. As part of the school's appraisal system all teachers have to do an action research project.

Professional learning at this school requires teachers to think deeply about the "big picture". In the words of one of the leadership team: "We are playing with people's futures—are you contributing or not?" Teachers are expected to show a strong commitment to becoming secure in their own cultural identity, and a strong commitment to the school's philosophy. They are expected to be open minded, and to participate in ongoing professional learning. At this school, we were told, "teaching is about being, the curriculum, kids, self and community". Professional learning at this school involves much more than ongoing development of teachers' professional knowledge of "best practice". The principal noted that some staff found it took them a while to "unlearn previous practice that they thought was good". One strategy she uses to deal with this is to model new approaches herself for staff.[21]

According to the leadership team, the teachers' and the students' learning environments are closely aligned. There is a strong emphasis on learning environments that are culturally appropriate. For example, in the staff appraisal system, there is recognition that for some groups it will be uncomfortable for individuals to have to comment positively on their own performances. To avoid this situation,

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[21]   The principal reported that all senior staff, less experienced staff and/or students model practice and learn from each other at this school.

teachers can choose someone else to comment on their performance, rather than having to speak about themselves.

When asked who the key players in professional learning were in the school, the response from the leadership group was that it depended on what was being learned. Sometimes students (or former students) might lead professional learning. At other times the leaders could be board of trustees members, other members of the community or anyone on the school staff. Leadership at this school depends on the context.

Eight teachers, all of whom were teaching composite Year 10 and Year 11 classes, participated in a group interview with two NZCER researchers. Four of the teachers also provided us with short, individual written responses. At this interview, teachers mentioned the same professional learning opportunities as those discussed by the leadership team, although they initially focused mainly on specific events—such as the conference run by the school, and courses or professional development run by outside providers. The teachers agreed with the principal's view of the importance of professional learning in the school. As they put it, "everyone in the school is expected to learn", "this place pushes you to improve your teaching—the bar keeps shifting. [Name of principal]'s PD keeps us always trying to catch up", "this school puts people in situations they don't think they can handle, but you can—because of the principal's belief in them and how she supports them". Several of the teachers spoke positively of the way the open plan teaching spaces in this school supported the learning of the adults who worked in them. Several said that they had a great deal of autonomy to determine their own professional learning needs. They all thought that there was no difference between the learning environments provided for students and those provided for teachers.

These teachers were clear that professional learning is much more than simply acquiring professional knowledge and improving practice. One teacher, in comparing his practice at his previous school with what he is learning to do now, said, "What I had been doing was good teaching methods—not what's good for the kids. I'm the weaver of their destiny, or the tool of their destruction."

Similarities and differences between the three schools

Because these three case study schools have very different "visions", the focus of their professional development programmes is very different. However, all three schools' programmes are exemplary by today's standards. According to the recent Ministry of Education-commissioned Best Evidence Synthesis on teacher professional learning and development, successful programmes have the following features:[22]

- They are consistent with wider policy trends and research.

- They provide extended time for teachers to engage with new ideas and their implications for practice.

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[22]   Timperley, Wilson, Barrar, and Fung (2007). "Successful" programmes, in this context, are those that "impact on student outcomes". It is important to note that these features were identified as *necessary*, but *not sufficient* to promote the learning of content in the necessary depth.

- They use external experts who present new ideas in ways that engage teachers.

- They provide opportunities to engage in a range of learning activities.

- They allow teachers to participate in a professional community that supports the new ideas and practices at the same time as they challenge existing ones and focus on teaching–learning links.

All three case study schools have a strong commitment to teacher professional learning. In each case, teachers saw their professional learning as a coherent package, clearly connected to the school's overall goals and vision. The programmes of all three schools draw on recent educational research, and, albeit in very different ways, fit with current policy trends. School A's programme is closely aligned with the current policy focus on lifting student achievement in literacy and numeracy. School B's aim is to develop a 21st century curriculum, while School C is developing "critically conscious, culturally responsive" pedagogy.

All three schools used external experts, but went about this rather differently: School A has an external literacy adviser "embedded" in their literacy professional learning; School B invites outside experts in on an as-and-when-needed basis; while School C said that they had difficulty sourcing appropriate professional learning from outside providers, but that they do use them, adapting what they learn for their context.

All three schools have principals who are actively and thoughtfully involved in developing good learning environments for their teachers. All have highly developed models of distributed leadership and their principals are committed to nurturing emerging leaders. All three schools had clear visions for student achievement. School C's vision is unique to the school and the principal has invested a great deal of time and energy working in collaboration with the community, board of trustees, staff and students to create this vision.

All three schools have teacher inquiry at the centre of their professional learning. Teachers are expected to gather data and to use this to reflect on their teaching practice. Teachers at all three schools participate in a wide range of other professional learning activities, and all felt they had some freedom to choose professional learning opportunities that met their individual needs. All three schools are actively involved in developing initiatives to meet their needs: School A was recently involved in running a conference for all schools in their School Improvement cluster; School B ran an "emerging leaders" conference in the school holidays; and School C brought social justice educators from overseas to a conference for their school community.

Teachers at all three schools also talked about the informal learning opportunities available to them: teachers at Schools B and C spoke of the benefits of open plan teaching spaces where they could observe each other teach; and teachers at School A saw informal discussions with colleagues as useful learning opportunities. The teachers we interviewed at all three schools said that their own learning environments were closely aligned with those of their students.

At all three schools, teachers were committed to providing the best possible education for their students, but their conceptions of what the "best possible education" involves differed substantially.

At School A the focus of the teacher professional learning programme was on being better teachers of literacy and numeracy. The observed professional learning sessions focused on developing teachers' content knowledge—and teachers seemed to appreciate this. One teacher told us that the Monday staff meetings were some of the most useful professional learning opportunities that she had ever had. She said these sessions gave "lots of information about things you need to know, but are also quite interactive". When asked to compare the professional learning she received at school with learning in other parts of her life, this teacher said her professional learning was like her experience of being coached at netball. Both situations required learning new knowledge and skills to perform better.

The professional learning sessions for staff at School A were carefully planned. They were well structured and often modelled techniques that teachers might use with their students.[23] However, in the teacher interviews and our observations of the sessions, we saw little evidence of teachers thinking deeply about the "bigger picture" of their work: for example, about the purpose of schooling and/or ideas about "21st century education".[24] In the interviews, teachers said that they "don't think much about the 'big picture'—the leadership team do that, and they let us know what is important" or "we have plenty of opportunities to think about the 'big picture' but I'm not that keen".

In School B, on the other hand, there is a great deal of emphasis on the "big picture". The teachers know about the international thinking on how and why society is changing, and why schools need to change to meet the needs of today's young people. At this school the learner, and developing positive, respectful relationships that focus on learning, are central. The students are seen as young adults, actively involved in determining what and how they will learn, rather than as vessels to be filled with existing knowledge.

School C is also very focused on the "big picture". Its vision is to provide a genuinely equitable system for Māori and Pasifika students. For this school, the "best possible education" means students being able to "retain their identity and to have their cultural norms validated and valued throughout the school day".[25] Achieving this means critiquing the current system. As the principal puts it:

> We have to ask the hard questions about the purpose of schools, whose knowledge counts, who decides on the norms we expect our youth to strive to achieve, who decides on literacy and numeracy as the holy grail and almost sole indicator of achievement and success?[26]

This focus was reiterated by several of the teachers we interviewed: for example, one teacher said that "teaching needs to be culturally relevant otherwise it is assimilation". Others told us that "we are encouraged to question at all levels" and "we are always encouraged to be innovative in our teaching and question the norm". Teachers are encouraged to strengthen their own cultural understandings so that they can "validate others and make opportunities to think outside the square".

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[23] For example, they used co-operative learning strategies, small-group discussions, "thinking hats" and so on.

[24] With the very obvious exception of one teacher.

[25] Milne (2009, p. 49).

[26] Milne (2009, p. 5).

We began this project with the assumption that effective 21st century professional learning environments need to provide opportunities for teachers to work together in "communities of practice" *and* in "learning communities", and that the aim of these communities should be to assist teachers to "re-situate" themselves as *learners*. We were interested in finding out if schools have been able to do this.

The teacher professional learning programmes in the three schools we studied would all, in their different ways, be regarded as "best practice" by current standards. But: Have the teachers in these schools been able to participate in communities of practice *and* in learning communities? Have they been able to re-situate themselves as learners—individually and with others?

School A clearly has a well-developed community of practice with a strong focus on deepening and expanding teachers' knowledge of "best practice" in literacy and numeracy. Schools B and C have focused on developing *new* communities of practice, oriented around (different) critiques of the status quo. We saw plenty of evidence that these new communities of practice are well established. However, we saw very little evidence of teachers working in learning communities.[27]

What do we mean by this? What would this look like? Does it matter? In the final section of this paper we look at these questions and suggest some implications of this for our collective thinking about the future shape of teacher professional learning.

Transformational learning environments for teachers – what might these look like?

As outlined earlier in the paper, learning communities are oriented around growth and change. Their purpose is to provide the conditions for innovation and transformation, and to build—in *all* of their members—the capacity to contribute to this. The early work on the "learning community" idea (by Senge et al., 1999) set out the basic conceptual framework and described how and why learning communities are an appropriate response to the demands of 21st century life and work. This was followed by empirical work designed to investigate what this concept might look like in practice. Drago-Severson,[28] for example, sets out some of the practices that, her research showed, support the kind of

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[27] The principal of School C expressed surprise at this finding when she was sent the draft of this working paper. She wondered if "the finding is due to [the researchers] just working briefly with the one team, or if, because working as a whanau is our norm, our staff don't think to tease out further what that actually means, or talk about it much—it's embedded in everything we do. I also think that the research on learning communities again takes its varying definitions from a white world view. A 'learning whanau' would look very different to a learning community and I think we have a learning whanau—where individuals, linked through whakapapa or kaupapa, work together to fuse new learning with old learning, retaining cultural 'ways of being', so change is shaped and supported from a mindset that benefits whanau first and doesn't come from an individual perspective." These are interesting ideas that will help as we push our thinking further.

[28] Drago-Severson (2007, 2012).

(adult) transformational learning—or growth of mind—that is the objective of learning communities.[29] These practices include:

- scaffolding different forms of adult collaboration

- creating contexts in which adults can articulate their thinking through writing, speaking and/or acting

- uncovering assumptions and beliefs that guide thinking and actions

- having opportunities to discuss ambiguities, contradictions and faulty reasoning

- envisioning alternative ways of thinking and behaving

- considering alternative points of view.[30]

In the case study schools we saw a few examples of individuals engaging in these practices,[31] but few instances of individual teachers being engaged in the kind of slow, reflective, ruminative thinking that is the basis of creativity and innovation.[32] The teachers we interviewed (in each school) expressed, not a range of different views and perspectives, but a level of certainty, a commitment to a "one right answer" that was surprising, especially in the two schools that are actively challenging the status quo.

While it is of course possible that this is an artefact of the interview process and/or the particular questions we asked, we think this finding raises some interesting issues for further discussion. In particular, we think further discussion is needed on the concept—and putative benefits—of learning communities in school contexts, and on the kinds of school leadership required for teachers—and students—to thrive in the 21st century.

In the contexts described by Drago-Severson, two important things are going on. First, the participants are provided with *structures* that assist them to work—and think—*together* to change their (individual and collective) meaning-making system(s), and to see their shared endeavour in new ways. Their work together is not a free for all. Second, the participants are being "led", but in ways that are very different from most people's understanding of what leadership involves.

In the late 20th century, leadership theorists began to explore what "postmodern" leadership might look like. In an essay reviewing prevailing scholarly ideas about leadership and leadership success from a

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[29]   The term "transformational learning" in this context comes from the work of Robert Kegan (1994, 2000). Kegan argues that learning that is "transformational" involves a change in the structure of a person's "meaning making system": i.e., there is a change in *how* they know, not just in *what* they know. Kegan calls this a re-negotiation of *subject–object balance.* What we are "subject" to we cannot stand back from and examine. We are *identified with it* and *run by it.* In contrast, what we can hold as "object" can be reflected on and considered, and we can control and manage it. Transformational learning involves making "object" something we were "subject" to.

[30]   Drago-Severson (2007).

[31]   For example, in School A we observed one teacher consistently engaging in these practices, and encouraging others to do so. However, when she was out of the room the learning environment was qualitatively different.

[32]   Claxton (1999).

range of disciplines, Heifetz and Sinder (1988) describe a remarkable convergence of views.[33] Successful leaders, it seemed to be widely agreed, need two main talents: the ability to develop and communicate a coherent vision, mission or purpose, and the ability to get people to identify with, join in and "own" this vision. The first of these abilities requires certain cognitive and communication skills, while the second requires relationship skills. Both are needed in successful leaders. The point of Heifetz and Sinder's essay is to propose an alternative to this agreed-on view. They argue that the postmodern leader needs, *not* to be able to lay out their unilateral, preconstructed vision for others to follow, but to *provide the context* in which *all* interested parties (including the leader) can *together* create a vision, mission or purpose that they can collectively uphold. Robert Kegan later takes this up, characterising the postmodern leader as someone who *refuses* to treat their own ideas and plans as whole and complete, however internally consistent and complete they may be on their own terms. Of course the leader *has* ideas and plans, but what they "stand up for" is the importance of people working through the "inevitably frustrating and awkward process of cobbling together a collectively created plan for getting where [they] want to go together", and, once they have a plan, standing up "for the likelihood of *its* incompleteness", for the "need to keep seeking the contradictions through which it will be nourished and grow".[34]

Kegan (and the other theorists referred to above) have beeninfluenced by the postmodern theorists who point out how today's world is characterised by a lack of absolutes, and by an emphasis on partiality, plurality and difference. Asking how then do we move into and work with this new conceptual landscape, Kegan argues that, as in all stages of human development, "differentiation always precedes integration". As he puts it, "before we can re-connect to, internalize, or integrate something with which we were originally fused" ["subject to"], "we must first distinguish ourselves from it" ["make it object"].[35] He is talking here about leadership, but the same idea can be applied to all aspects of our transition to the postmodern era (or, here we could substitute, the "knowledge age" or the "21st century"). To move into, to work and live successfully in, these new spaces, we need to understand where we have come from: to step back, reflect on and rethink this. This *doesn't* mean calling *everything* into question *all* the time—this would be intolerable: but it does mean making a start.

So: What does all this mean for thinking about leadership in today's schools? How—or should—schools be building learning communities? Do *all* teachers need to participate in the kind of personal cognitive development, the transformative shifting of their meaning-making system advocated by Kegan (and others)? Are all previously taken-for-granted concepts "up for grabs"—awaiting "re-integration" by everyone? How can schools balance the need to build their teacher capacity to function in the complex, fluid, uncertain world of the 21st century, their capacity for slow, reflective, transformative thinking, with the immediate demands of the here and now, with the need to, for the most part, comply with current policy settings? Are there ways to "fly the plane while still building it"?—to borrow an aphorism in common use in the leadership literature.

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[33]   Heifetz and Sinder (1988).
[34]   Kegan (1994, p. 323).
[35]   Kegan (1994, p. 326).

One possibility is that schools could ensure that a proportion of their teacher professional development programme is designed to support *all* teachers' cognitive growth,[36] while at the same time establishing clusters of experienced teachers who could work together across school sites (possibly online) to develop systems that better meet the needs of today's students.[37] This approach would provide all teachers with opportunities to grow and develop, and keep abreast of current "best practice", while at the same time building in processes to encourage and sustain innovation across the system.

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[36] For more information about professional learning that is designed to support cognitive growth, see Garvey Berger (2011).

[37] Perhaps the concept of "teacherpreneurs", coined by Barnett and the TeacherSolutions 2030 Team (2011) could be a useful way to think about this. Teacherpreneurism involves propagating a new culture of innovation and creativity in the education sector. Experienced teachers with different areas of expertise connect with others to focus collectively on the changing needs of students. This is reform driven by teachers, rather than policy decisions.

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