Chapter 12

UNDERSTANDING LEARNING TO INFORM TEACHING

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- **How can theory and research about learning help you as a teacher?**
- **How have theories about learning changed over time?**
- **Is it important to use one theory all the time, or can more than one be useful?**
- **Do your views about learning influence what and how you teach and learn?**

Introduction

Teachers continually face complex decisions as they endeavour to support their students' learning in a changing world. There are changes in families, communities, and technologies. The curriculum that frames, shapes, describes and influences student learning and teaching practice is also changing, and this reflects developments in learning theory and research.

In early childhood education, developments arising from the introduction of *Te Whāriki* (Ministry of Education, 1996) have led to changes in the ways practitioners think about young children and their learning, and the importance of social and cultural contexts. From the end of 2007 a revised *New Zealand Curriculum*, being introduced into New Zealand schools, is expected to bring in sweeping changes to the way teachers need to *think* about learning. While knowledge is still recognised as important, expectations emphasise knowing how to learn, and how to access, understand and use information. This changed emphasis is apparent within the context of each curriculum area, alongside other key competencies relating to personal, social and communicative capabilities (Ministry of Education, 2007).

The change in thinking, from delivering the curriculum to infusing learning within the multiple contexts of our lives is an important one. Teachers will need to be able to articulate their understanding of learning as a process involving the development of learners' knowledge, understanding and insight, rather than learning only as a product measured in terms of specific learning outcomes. At the same time, teachers will still feel the requirements of the Education Review Office (ERO) to identify measurable learning outcomes, and of parents and other stakeholders wanting quantitative data on 'what has been learnt'.

To discuss these tensions and issues with confidence, teachers find they need to engage with conversations about learning, including their own professional learning. Increasingly, teachers need to be able to articulate their theories of learning and identify how these theories impact on their classroom practice. Darling-Hammond (2006) argues that:

> if teachers must ensure successful learning for students who learn in different ways and may encounter a variety of difficulties, then teachers need to be diagnosticians and planners who know a great deal about the learning process and have a repertoire of tools at their disposal. (p.80)

Understanding learning is therefore not only a necessity of the teaching profession but a prerequisite for effective teaching. For educational change to succeed, as it must, teachers will need to think differently about learning. While not easy, "educational change depends on what teachers do and think – it's as simple and as complex as that" (Fullan, 2007, p. 129).

Changing views of learning

Views about learning have changed over the years as the kinds of questions that have been asked have changed, as research methodologies have developed, and as research sites have expanded beyond the laboratory to early childhood centres, homes, schools, adult and tertiary education settings, and workplaces. There is a recognition that lifelong learning takes place in a variety of learning environments: formal institutional settings from preschool to postgraduate studies, nonformal educational settings (usually local and community-based programmes), and the informal, unstructured learning that takes place in all settings of everyday life (Merriam, Caffarella, & Baumgartner, 2007). As the range of both quantitative and qualitative research approaches has increased, along with interdisciplinary inquiries and researcher-practitioner collaborations, a richer picture of learning is emerging and with this a greater relevance of research to practice. In this section we trace some of the major changes that have taken place over the last century, and argue that an understanding of learning theories can inform teaching practice.

Learning as acquiring responses

During the first half of the 20th century the dominant metaphor for learning, in terms of both psychological theory and educational practice, was one of learning as response acquisition (Mayer, 1998). Two theories that dominated through this period, and continue to influence behavioural theories of learning, were developed by Pavlov (classical conditioning) and Thorndike and Skinner (operant conditioning). These theories were largely based on laboratory studies of animals. Classical conditioning emphasised the acquisition of responses through associations, whereas operant conditioning focused on the way in which responses could be strengthened or weakened as a result of environmental consequences.

In translating the results for educational practice, learners were seen as passive while teachers were arrangers of classroom conditions and, in particular, dispensers of consequences. There was a strong focus on observable behaviour and little attention given to what went on inside learners' heads (or hearts). Teachers were encouraged to break learning down into small achievable steps, to manipulate antecedent conditions (environmental factors such as cues, instructions) in order to elicit responses, and to arrange positive or negative consequences depending on the correctness or appropriateness of the response emitted by the individual. Learning was assessed in terms of behaviour change. Behavioural theories have influenced the management of both academic learning and general classroom behaviour, including such developments as behavioural objectives, programmed learning and the use of token economies in classrooms. In a more general way, the use of extrinsic reinforcement to shape changes in behaviour (responses) continues.

Learning as acquiring knowledge

As laboratory studies shifted around the middle of the 20th century to include studies of human learning, so attention moved from the acquisition of responses to the acquisition of knowledge. There was a good deal of research interest in human memory and the learning of abstract material in artificial laboratory settings, and learners were viewed as acquiring knowledge dispensed by others. Within this metaphor students received and processed information transmitted by the teacher or texts. Teachers were to increase students' knowledge, which could be measured by achievement tests (Mayer, 1998). In order that learners could more efficiently acquire knowledge,

the teaching emphasis was on curriculum design and the organisation and presentation of information.

While this view of learning pays some attention to human cognition the learner is still seen as relatively passive. It is the teacher who plays the most active role in the effective transmission of information.

Learning as constructing knowledge

Since the 1970s researchers have increasingly moved beyond the laboratory to investigate learning in more natural situations: early childhood centres, schools and tertiary institutions, formal subject-based learning, and learning in the home, community and workplace. In these more complex and realistic settings, learners were found to play an active part in their own knowledge construction. They were not just passive receivers of information but played an active and strategic role in their own learning (Jones, Palincsar, Ogle, & Carr, 1987). This new metaphor of learning had earlier beginnings in the writings of Dewey (e.g., 1902) and Piaget (e.g., 1954), both of whom emphasised the child as an active learner. The focus of research shifted from acquisition to construction, from curriculum to cognition, and from the content to the process of learning.

The learner now became seen as someone who actively uses prior knowledge and strategies to understand what is required in learning tasks, to monitor and regulate their learning, and to achieve learning goals. Knowledge and skills are seen as becoming more complex as they are revisited over time, and both experience and age influence learning and thinking. As Jones et al. (1987) point out, this picture of an active independent learner constructing meaningful knowledge contrasts with earlier knowledge acquisition views of learners responding to learning materials and tasks appropriately sequenced by the teacher.

Learning within this metaphor was initially viewed as an essentially individual cognitive activity. Later Resnick (1989) argued that cognitive theory emphasised three interrelated aspects of learning. "First, learning is a process of knowledge *construction*, not of knowledge recording or absorption. Secondly, learning is *knowledge-dependent*; people use current knowledge to construct new knowledge. Third, learning is highly tuned to the *situation* in which it takes place" (p. 1).

The first emphasis on active knowledge construction has highlighted the role of strategies, and what has come to be termed metacognition, in learning. Strategies are plans or routines for remembering, learning, or solving problems, and are potentially conscious and controllable. Metacognition refers to the knowledge and control of our own cognitive processes and actions, involving "being aware of our thinking as we perform specific tasks and then using this awareness to control what we are doing" (Marzano, Brandt, Hughes, Jones, Presseisen, Rankin et al., 1988, p. 9). The teaching of strategies and metacognitive skills is encouraged within a constructivist view of learning. The second aspect, which recognises that new knowledge is constructed on the base of prior knowledge, has alerted teachers to check for relevant prior knowledge and existing misconceptions, and adapt teaching where necessary.

The third aspect identified above emphasises the fact that what is learned cannot be separated from how it is learned and used, and the activity in which knowledge is developed. Brown, Collins, and Duguid (1989) argued that if the situated nature of cognition and learning is ignored then learners are unlikely to acquire robust knowledge which they are able to use in a meaningful way. Putnam and Borko (2000), writing about teacher learning, identify three central themes to the situated learning perspective. Cognition and learning is seen as:

- situated in particular physical and social contexts,
- social in nature, and

- distributed across the individual, other persons, and tools.

Here we can see how the move beyond the laboratory and controlled experiments has led to attention being paid to the context in which learning is taking place, and also the recognition that learning is not just a solo activity.

Learning as participation in shared activities

As educational research has moved into the 1990s and beyond, two major strands of learning theory have stood out: individual cognitive constructivism and social constructivism (Cullen, 2001). Research activity and interest in teaching implications continue within both these perspectives, with growth especially in social constructivist and sociocultural theory. In the literature there are debates about these two terms and differences between the associated theories. However the boundaries are somewhat blurred, and here we will generally use the term sociocultural theory.

The increasing focus on context and the situated nature of learning led to more attention being given to the social nature of learning. This shift also arose from renewed interest in Dewey (1916), who argued that children learned best through democratic participation, and the English translations of Vygotsky's earlier sociocultural theory (e.g., Vygotsky, 1978). In particular, attention focused on the Vygotskian concepts of intersubjectivity and the zone of proximal development.

Intersubjectivity, or shared consciousness, reflected the ideas of Marxist Russia and emphasised the social origins of thought and learning. Development and learning were seen as a function of individual, social, cultural and historical processes, first appearing between people and then within the individual. This process was viewed as being mediated through cultural tools, including oral and written language, physical resources, number systems, and so on. The zone of proximal development (ZPD) provided an area of potential learning during this social construction of knowledge and skills. It was described as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky 1978, p. 86). The concept of scaffolding (Wood, Bruner, & Ross, 1976), or responsive guided assistance, helped to explain how the sociocultural approach was played out in practice. Reciprocal teaching and peer tutoring are examples of the practical implications of sociocultural research utilising the notions of scaffolding within the ZPD (Palincsar, 1998).

Sociocultural theory has led to one-sided views of learning being challenged. Rather than a process where *either* teachers manage learning by transmitting information and organising activities, *or* learners manage their learning by active exploration and knowledge construction, sociocultural theory promotes a two-sided view. Here both teachers and students are regarded as active players, and their participation in learning activities is interrelated and inseparable from the sociocultural context in which it occurs (Cullen, 2001; Fleer, 2002; Rogoff, 2003; Wells & Claxton, 2002). Learning is central and is seen as a transformation of participation as teachers and learners engage in shared endeavours. Co-construction rather than individual construction is emphasised in this process. This goes beyond many individuals making contributions to knowledge to the development of "shared meanings growing out of development in shared activity" (Cullen, 2001, p. 34).

A sociocultural approach has emphasised the need to examine learning through *personal*, *interpersonal* and *institutional* lenses (Rogoff, 2003; Fleer, 2002). Using a personal lens focuses attention on changing skills, attitudes, understandings, and identities as learners. An interpersonal lens directs attention to changes in interactions with others involving collaboration and dialogue

to co-construct new understandings. The institutional lens focuses on changes in the cultural rituals and use of resources in the centre, class or school to support and promote positive personal and interpersonal changes.

Some of the resources highlighted by a sociocultural approach involve the 'funds of knowledge' that exist in families and the community beyond the educational institution. Gonzales, Moll, and Amanti (2005) present research describing a range of innovative teaching practices which draw on the knowledge and skills found in local households. Teachers became aware of the array of cultural and intellectual resources available beyond the school which could be accessed by students and used to develop new understandings. This was particularly important as the students came from households which were not only economically poor but typically regarded as providing poor quality experiences for children. In New Zealand, the idea of funds of knowledge meshes well with McNaughton's (2002) concept of 'meeting of minds' in relation to literacy curriculum in the early years of school and the importance of making connections between teaching and learning at school and in home and community contexts. The principles of the New Zealand early childhood curriculum, and the focus on partnerships between schools and whānau in the work of Bishop and colleagues (see Chapter 16), also highlight the potential role of family and wider community involvement in education. Similarly, the varied experiences and funds of knowledge accessible by adult learners can also lead to powerful connections and learning.

Watkins (2005, pp. 15-17) has described the shift in views about learning as a move from 'being taught' to 'individual sense making' to 'building knowledge through doing things with others'. The latter sociocultural view has supported research on situated learning (e.g., Billett, 1996; Brown, Collins, & Duguid, 1989) and the related notion of cognitive apprenticeship (Collins, Brown, & Newman, 1989). Attention is directed to intellectual, emotional, social, and cultural factors in learning. Lave and Wenger (1991, 2002) highlight the concept of 'legitimate peripheral participation' which is typical as an individual learns to become part of a 'community of practice'. Once again the social and cultural context of learning is recognised as a crucial aspect of learning theory. Newcomers gradually get the idea of what makes up the practice of a community and learn through participation in this practice. The nature of this participation changes as knowledge, skills and attitudes are developed and the person moves toward more fully developed practices. This can happen within early childhood centres or school classrooms, as well as at the tertiary level where authentic assignments, practicums, and internships can be designed to function in this way .

Within the early childhood and school sectors sociocultural theory has lead to a focus on the development of learning communities (e.g. Fleer, Edwards, Hammer, Kennedy, Ridgway, Robbins et al., 2006; Rogoff, Turkanis, & Bartlett, 2001; Sewell & St.George, 2008; Watkins, 2005). In tertiary and workplace learning, sociocultural theory has also had an impact in terms of communities of practice (Wenger, 1998), professional learning communities (e.g., Hargreaves, 2002), and e-learning communities (e.g., Paloff & Pratt, 1995).

Learning as knowledge creation

Paavola, Lipponen, and Hakkarainen (2004) propose that beyond acquisition and participation metaphors of learning there is a need for a further metaphor of learning: the knowledge-creation metaphor. Examining models of innovative knowledge communities in workplaces and schools, they argue the need for a metaphor which emphasises innovation, learning and knowledge advancement. Their knowledge creation metaphor of learning incorporates features of both acquisition and participation, and recognises the importance of collaborative interactions involving activities, tools and artefacts (which may be concrete objects or concepts). The focus is on how knowledge is used and developed, taking into account individual, social and cultural aspects of knowledge advancement and the "challenge of developing individual and collective

competencies related to knowledge creation in both educational and work settings" (Paavola et al., 2004, p. 571).

Hargreaves (1999) applied a knowledge-creation metaphor in arguing that schools, teachers and principals need to create and articulate teachers' professional knowledge in a way that can be shared both within and between schools. With personal experience of creating professional knowledge teachers are also more able to help students to engage effectively in knowledge creation. Some may doubt that younger children are in a position to create novel innovative knowledge with wide cultural value, in part because of their existing knowledge limitations. Nevertheless, Paavola et al. (2004) argue that it is important for learners to come to see themselves as creators as well as consumers of knowledge. They can question, understand and explain issues they are dealing with and change the way they participate with others. In doing so, they can create knowledge for their local community (e.g., centre, class, school, workgroup) and for themselves as individuals.

Using more than one theory

While there are clearly advocates of particular theories of learning, many would suggest (and we would agree) that a slavish adherence to only one perspective is unhelpful in terms of trying to improve teaching and learning.

Sfard (1998) discusses the acquisition and participation metaphors of learning and warns against the reliance on a unified, homogeneous theory of learning. She uses the acquisition metaphor to describe learning as developing concepts and acquiring knowledge as a commodity, thus including both the knowledge acquisition and individual knowledge construction perspectives outlined above. The participation metaphor on the other hand emphasises not 'having', but 'doing' and participating in practice and discourse, with the context as an integral part of the learning activity. After critically examining both metaphors, she concludes that neither is adequate on its own and both are needed depending on the nature and purpose of the learning activity.

In a similar vein, Anderson, Greeno, Reder, and Simon (2000) examine the relative merits of cognitive and situated learning perspectives. Rather than advocating selecting from a patchwork of metaphors depending on the learning activity, they sought points of consensus. They advocate that a cognitive perspective should not be thought of as individuals working on their own while denying participation in social practice. Neither should a situated learning approach be thought of as seeing learning only occurring in group activity while denying the value of individuals learning by themselves. They argue that both individual and socially situated perspectives are important and help to understand different aspects of the learning process.

Edwards (2005) cautions that while research within a participation metaphor focuses on practices, discourse and engagement, as well as membership, identity and inclusion, it gives little attention to ideas, concepts and understandings, and attainments. This emphasis on processes of participation and the support given by different contexts can give some useful directions for teachers in terms of structuring learning situations, ways of interacting, and assessment. However, Edwards suggests cognitive aspects of learning also need to be taken into account. This would help teachers to use resources effectively (both conceptual tools and material artefacts), as well as to understand and support sense making and the development of knowledge in context. The knowledge-creation metaphor outlined above also brings this aspect of learning to the fore.

In New Zealand, Nuthall (1997, 1999, 2007) has used both cognitive constructivist and sociocultural views to interpret data gathered in studies of integrated social studies and science units within the Understanding Learning and Teaching project. His data revealed the multilayered nature of classroom learning. First, there is the public observable, world of activities and routines

designed and managed by the teacher. Second, there is the influential and semiprivate world of peer relationships. Third, there is the private world of the student's mind where individual learning and thinking takes place, interwoven with the activities and experiences of the context. Here too, there are links between life in and out of school. As Nuthall (1997) put it, "it is the whole of what goes on in classrooms that determines how children think and learn" (p. 758). He was very drawn to social constructivist views of learning but recognised that such views also had constraints (Nuthall, 2002). At the same time he saw that individual cognitive perspectives which ignored social and cultural relationships, and the context in which learning occurred, were inadequate. Pointing out that teaching is complex, demanding, and interactive, he argued that good teachers are not effective all of the time, in all situations, or with all kinds of learners (Nuthall, 2007). Rather than seek recipes for effective teaching, Nuthall proposed that to understand teaching it was necessary to understand how people learn. His work makes a major contribution to this understanding.

Bringing together research-based evidence

Several large-scale attempts have been made in the United States to gather together research-based evidence on how people learn, utilising both individual and social perspectives on learning.

A task force of the American Psychological Association identified research-validated principles of learning from psychology and education, to provide a framework to guide school redesign and reform. The *Learner-Centered Psychological Principles* (APA Work Group of the Board of Educational Affairs, 1997) is an organised set of 14 learner-centered principles in four important domains of learning: (i) cognitive and metacognitive factors, (ii) motivational and affective factors, (iii) developmental and social factors, and (iv) individual-difference factors. While these principles focus on psychological factors that are primarily internal to the learner, they also acknowledge external social and contextual factors that interact with these.

The *Principles* are seen as applying to learners of any age, inside and outside of schools. They have resulted in publications setting out their research base (Alexander & Murphy, 1998), their use in primary and secondary education (e.g., McCombs & Miller, 2007; Meece, 2003; Weinberger & McCombs, 2003), postsecondary education (Thomson, Licklider, & Jungst, 2003), and e-learning (McCombs & Vakili, 2003).

A second major synthesis is the How People Learn (HPL) framework. This was developed by noted scholars across the range of perspectives identified earlier in this chapter (National Research Council, 2000). It draws on research on human learning with implications for the formal educational environments from preschool to tertiary levels. A parallel review focusing on early education and care of children aged two to five has also been carried out (National Research Council, 2001). Like Nuthall (2007), the HPL framework emphasises the value for teachers of focusing on how people learn rather than debating the value of particular teaching strategies or getting caught up in false dichotomies and either-or debates often present in the field of education. "If, instead, the point of departure is a core set of learning principles, then the selection of teaching strategies (mediated of course by subject matter, grade level and desired outcome) can become purposeful" (National Research Council, 2000, p. 23). Teachers who understand how learning occurs are going to be more able to select and design curriculum, strategies for teaching and assessment, and learning environments, that support rather than undermine learning. The focus can be shifted between four interconnected components of learning, which need to be balanced and integrated if teaching is to be effective (Bransford, Derry, Berliner, & Hammerness, 2005). These interconnected components are:

- The *learner* and his or her strengths, interests and preconceptions;
- The *knowledge*, shills and attitudes we want people to acquire and how they may be able to do so in order to transfer what they have learned;

- The *assessment* of learning that both makes students' thinking visible and, through feedback, guides further learning; and
- The *community* within which learning occurs, both within and outside the classroom.

(Bransford, Darling-Hammond, & LePage, 2005, p. 32)

Teacher's professional learning

In the same way that learning in general, and student learning specifically, has been conceptualised and explored over time, teacher learning and research has similarly moved through periods of changing views and influencing factors. The idea that teachers are also learners (and learners can also be teachers) is evident in sociocultural theory and the notion of co-construction. This extends to teachers' professional learning. One of the influencing factors on teacher professional learning has been the thrust of government-led professional development courses to implement policy change. Moving from teacher-based content-specific workshops to school-reform initiatives focussing on pedagogy, the underlying principle has remained the same – to shape teacher practice and update teachers on policy change.

Over the past five years professional learning models have become increasingly diverse, ranging from workshops to teacher self inquiry. Major models of professional learning include both whole-school approaches and individual teacher support, and can take place within schools and across school clusters. Support can be provided to teachers through observation, assessment, involvement in a school-wide development process, study groups, inquiry and action research, individual guided activities, mentoring and coaching, and online discussion forums. Professional learning for teachers can also occur with self-assessment, peer observation and coaching, observation by external change agents, and focused input on teaching strategies (Ross & Bruce, 2007). These activities can support teachers to reflect on their practice through conversations about learning, as well as to use the new knowledge to improve teaching. Such learning conversations can be planned and systematic, and also may occur informally between colleagues and in staffroom conversations.

One of the major recent shifts in teacher learning has been from teachers being the objects of research by others, to taking an active role in conducting their own classroom research within teacher inquiry models. Through active engagement in *their own* research, teachers are exploring what it means to learn, and to teach, in systematic ways. Such inquiry is often in the form of action research, focusing on understanding and solving problems of learning and teaching, and is seen as a defining feature of teaching as a profession (Darling-Hammond, 2006).

Conclusion

Learning is illustrated through multiple theories; complex and historically situated, it is an intricate phenomenon. This chapter has shown how learning has been conceptualised in dramatically different ways through a range of theories that have developed over time. While we argue that understanding the complexity and differences within these theories is essential for effective teaching, the adoption of one view of learning is not. Learning, whether it is a matter of acquiring responses, acquiring knowledge, constructing knowledge, participation in shared activities or knowledge creation, takes place in a context that shapes what actually happens for each learner.

Juxtaposed against these different theories is the *role* that the learner and the teacher adopt according to their theoretical understanding of what it means 'to learn'. Within each learning context, whether students view themselves as the passive recipient of information or the intentional learner within a community of learners, they need teachers who can understand and move between theories to complement the changing roles they take. As Lave (1996) states, "learning, wherever it occurs, is an aspect of changing participation in changing practices" (p.

161). People learn in multiple contexts: alongside peers, with different teachers, and in school, family, and out-of-school contexts. Through understanding learning, teachers can adjust their teaching and assessment in a way that legitimises the student as a learner.

We have argued that teaching as a professional endeavour requires teachers to have knowledge of and about learning and learners. In the same way that medical practitioners need to know how the human body works, so too do teachers need to know intuitively and intimately learning as a process, as a construct, and as a diverse set of theories (Darling-Hammond, 2006). Being able to articulate the different learning theories and what these mean for teaching, positions teachers as professional practitioners who *understand* learning. As active inquirers, teachers can use learning theory to inform their teaching. Knowing how to support the learning process for their students and being able to identify the theories and the principles that sit behind these activities, allows teachers to create and enjoy rich learning and life experiences for both themselves and their students.

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Chapter 15

WHAT STUDENTS CAN TEACH US ABOUT LEARNING

Roseanna Bourke

- **Why is student voice important for learning and educational reform?**
- **How do students conceptualise learning, and does this influence what they actually do in educational settings?**
- **How does context affect the way students think about learning?**
- **What can students tell us about their own learning, and how can this enhance our teaching?**

Introduction

Understanding students and their learning is pivotal to knowing how to teach. Teachers, peers, parents and community members teach well when the knowledge they have about teaching connects closely with the knowledge they have about the learner. The active involvement of students is necessary both for increasing motivation to learn), and to support education reform initiatives. For these to happen, we must look at learning from the learner's point of view. This means not only talking with learners, but also working alongside them, stepping into their shoes, and asking ourselves, what are we seeing? As Nuthall (2007) points out "teaching is about sensitivity and adaptation. It is about adjusting to the here-and-now circumstances of particular students" (p. 15).

There are two assumptions that we must accept as researchers, teachers and educators. The first assumption is that any student is in the educational setting to learn. This is not to say that they are there to learn the teacher's curriculum. Every student will learn something but it may not be what the teacher anticipates or even desires. The second assumption is that every student deserves respect for and acknowledgement of their presence and their contribution. Research on students' views about learning has shown that students need and value respect, and respond to teachers who treat them as individuals with a contribution to make (Bishop & Berryman, 2006; Cook-Sather, 2006: Thiessen & Cook-Sather, 2007)

This chapter examines a third assumption; one that needs to be actively challenged. The assumption is that as teachers, researchers and educators, we really do listen to the student. Historically the student voice has been silenced in educational research, practice and policy. Recent research has shown that students' perceptions of various reforms, policies and practices are often different to the teachers, but that student contributions to these reforms significantly improve the intended outcomes for students (Cruddas, 2001, Mitra, 2004; Yonezawa & Jones, 2007). Necessarily, when student voice is part of the reforms the students' role in education changes. They become "change makers" (Mitra, 2004, p. 664). In such situations, where student experience and voice is legitimised and understood within a setting, students report feeling more in control, better connected with the institution, and learn to appreciate their teachers' perspectives as part of their own process of being heard as students (Mitra, 2004; Rudduck, Chaplain, & Wallace, 1996). The multi-faceted nature of student voice creates a dynamic

dimension to educational reform because the voice of the student is not homogenous, unified or representative.

Why the student voice?

As a student, the young person challenges teachers' own understandings of learning, teaching, pedagogy and practice. In every classroom, the dominant 'voice' is that of the student, but it is neither the strongest nor the one that is most often listened to or heard (Thiessen, 2006; Cook-Sather, 2006). The student voice and experience has been historically subordinate to the more powerful voices – those of the teacher, the curriculum and the purpose of schooling. However, as students themselves have reported, they are "excited about teachers who want to know what students think" (Fine, Torre, Burns, & Payne, 2007, p. 813).

It is the student's learning that must be understood, acknowledged and captured in order to enthuse, motivate and show the learner a world of learning that can enhance their life and their life chances. Ironically, a recent study showed that poorly achieving students reported experiences of being disadvantaged by schooling infrastructure, high teacher turn-over and teacher expectations. This research identified that "these youth are yearning for schools of intellectual challenge, cultural respect, and a sense of inclusion" (Fine et al., 2007, p. 811).

Students find their own solutions to problems posed to them through schooling via their teachers, peers or the economic situation. The meaning behind their own solutions, when understood, can be used to support student learning. In *Culture Speaks*, Bishop and Berryman (2006) reported the voices of Māori learners within secondary school settings, who gave powerful messages that teachers needed *to care* – about them as individuals, and about them as Māori. Even those students identified as 'non-engaged' reported that they wanted to learn. In another study students reported "it's the way they [the teachers] talk to us. We're not dirt you know" (Cruddas, 2001, p. 63).

The experiences students have through learning contribute to the development of their identity. Peers are also part of this context and can themselves create an atmosphere leading to fear, intimidation or mistrust (see also Chapter 10). For example, in a study where students identified by the schooling system as truant were interviewed in their home settings, one student explained, "the people, the kids that were making fun of me ... there were people who always made fun of me, and they made fun of me just once too often and I decided not to come. I just thought it can't be fixed, just stay away from school" (McAlpine, Bourke, Walker, & McIlroy, 1998). Similarly, other studies illustrate students' strategies to avoid confrontational situations where they experience potential psychological or physical harm; they simply stop attending class (Mitra, 2004; Smyth, 2007). These students too, were labelled truant.

What is student voice?

Research and educational practice involving students' views has developed in three ways: students as sources of data, students as active respondents and students as co-researchers (Fielding, 2004). Therefore, the notion of 'student voice' can mean different aims and practices of student inclusion resulting in varying degrees of learning community development (Macbeath, 2006). As teachers or researchers, student voice can be encouraged through: (1) seeking information from students as a data source; (2) involving students in decision-making and consulting with students over issues related to learning and teaching; and, to a lesser extent, (3) supporting students as researchers, and co-researchers in determining their own agenda for change. Understandably then, the notion of student voice is more complex than merely listening to the student as it requires a shift in role for both teachers and students. While much of the current rhetoric in education about student 'engagement' portrays the will and desire to have

students actively participating as a learner and a member of the educational community, there is little evidence in reality that institutions' and teachers' roles have changed accordingly. Not surprisingly, when accorded a different role, students find it difficult to provide a strong critical voice and act as agents of change, when their role with teachers has traditionally involved a power relationship (Reed, 2005). Even so, students are powerful allies for teachers.

Student involvement should not be limited to hearing their perspective, but should also involve working on behalf of, and with, students (Fielding, 2004; Thiessen, 2007). It is now recognised that talking with students and consulting with them enhances their self-esteem and, *when* it creates an agenda for change, leads to increased student commitment and motivation in an educational setting (Bishop & Berryman, 2006; Rudduck, 2007; Mitra, 2004).

For Fielding (2004), the necessity of dialogue is foregrounded; student voice means speaking with students (rather than for them), and involving students as co-researchers (rather than being researched). This avoids the possibility of student voice becoming faddism, leading to unrealistic expectations for the students, or 'manipulative incorporation' where student voice is used in a cosmetic way without any real desire to use that voice as an agent of change. Fielding argues that student involvement should be based on democratic and transformative intentions, that is, with the aim of incorporating students' aspirations as part of the educational reform agenda. When the question is posed whether students 'know what is good for them', the response depends on the theoretical position given for including student voice. Irrespective of their age, students do have a view on any area of learning and a motivation to feel that in some way they contribute to their own agenda for learning.

Student as ally

The greatest ally for any teacher is the student. Students also provide the teacher with their greatest accountability measure, for it is through their students that the teacher is most challenged, most confronted with everyday problems, and most often provided with those moments of joy and illumination about what it means to learn, and what it means to teach. Building learning communities within the classroom means listening and learning to understand students; although this is often difficult for teachers when young people themselves at times do not listen to, or care for, each other. For example, Martino and Pullotta-Chiarolli (2007) highlighted the peer pressures associated with being a young person in a high school where peers invisibly and, in some cases, quite openly have systems that marginalise, exclude and denigrate each other. Such gender-based harassment, social relations and power relations are part of the student experience, which affect their learning and their identity.

The way learners develop an understanding of themselves, their skills and their successes at school and in life, create their identity and their belief in themselves. The subtle messages they receive in feedback from others (parents, aunties, uncles, grandparents, friends, and teachers) all form part of this understanding of themselves as a learner, and as a person. We all hold multiple identities across different learning and social contexts and therefore, the teacher only knows a learner in so far as they know a few of these contexts for the learner. As a consequence, contemporary educational research is increasingly exploring the need to "address the dynamic complexity of the many sides of students' identities and how schools play a part in this development (Thiessen & Cook-Sather, 2007, p. 315).

Teachers' and students' views about the same reform can differ. For example, in a recent school reform initiative in California, teachers' and students' perceptions of the process and outcomes of the reforms markedly differed. The key initiatives were around 'personalisation' and 'rigour' of learning. Students reported a lack of connection between what they meant by personalisation and the way the district and schools operationalised this reform (Yonezawa & Jones, 2007). Teachers initiated personalised learning with additional support through peer-mentoring programmes and

structures that occurred out of the classroom yet, the students reported that this did not help their learning. Rather it was the in-class day-to-day teacher-student relationship that they considered key to personalised learning.

The New Zealand Curriculum (Ministry of Education, 2007) states that students will be supported "to learn and achieve personal excellence, regardless of their individual circumstances" (p. 9). Therefore, teachers and researchers alike have a responsibility to discover how an individual student's 'personal excellence' is conceptualised *from the student's view*. Given that the notion of personal excellence is bound by culture, context, and the knowledge of the learner, the student's view is paramount for the successful implementation of this principle. For example, Ingrid Pramling (1996), an educator and researcher in early childhood education, argues that:

> If we want to know what characterises children's learning, we must know how they see it from their own perspective. And if our knowledge about children's learning should make children better "learners", we must develop their understanding of their own learning. (Pramling, 1996, p. 565)

Students' conceptions of learning

We need the student voice to understand their views on learning and assessment because the way learners view learning impacts on how they approach the learning task. Research has shown that the *range of conceptions* of learning, in children and adults is not markedly different, but we cannot assume that for each individual student, we know what it means, from their perspective, to learn. For example, Säljö (1979, 1996) identified five qualitatively different conceptions of learning by adult learners. In a further study of tertiary students, a sixth conception of learning was identified. This was 'changing as a person' (Marton, Dall'Alba, & Beaty, 1993). These views on learning are seen as hierarchical in the sense that they move from the least sophisticated and least inclusive, to the most inclusive and sophisticated conceptions of learning (see Table 15.1).

Table 15.1: Conceptions of learning in adult learners
Note: Based on empirical data from Marton, Dall'Alba, & Beaty (1993), Säljö (1979).

Conceptions of Learning in Adult Learners	
A	Increasing knowledge
B	Memorising and reproducing
C	Applying knowledge
D	Abstracting meaning
E	Seeing something in a different way
F	Changing as a person

In a New Zealand study involving Years 7 and 8 students, students reported a range of conceptions of learning and self-assessment, that, while similar to those identified above, they did show a difference between school and out-of-school settings. Conceptions of learning were actually more sophisticated in out-of-school contexts. These conceptions were influenced by both the context for learning, and the assessment activities that evaluated their efforts (Bourke, 2000), and ranged from students wanting to 'fill their brain' to more sophisticated views of wanting to understand and make connections with their knowledge and to see things, or come to know, in a different way (see Table 15.2).

Table 15.2: Categories of description for students' conceptions of learning (Bourke, 2000)

Students Conceptions of Learning	
Getting to know	Learning is about gathering facts from the teacher or other sources (books, computers) to "fill up the brain". The learner relies on the teacher to present learning material. This category is characterised by students asking *What do I need to know?*
Getting better	Learning is seen as a collation of facts to be recalled at a later date. The student uses repetitive techniques to practise skills acquired. Learners believe there is only one solution to a problem. The regurgitation of facts is seen as an indicator of learning, and this is achieved through constant practice (rote learning). This category is characterised by students asking *What do I need to remember?*
Using your knowledge	Learning is viewed as the ability of applying knowledge in increasing degrees of speed and accuracy. The ability to complete work is seen as an aspect of learning. Improvement in learning is viewed as being able to complete work faster and more accurately. This category is characterised by students asking *How do I do this?*
Understanding and knowing	Learning is viewed as understanding the problem. Students use prior learning to problem solve and see learning connections rather than activities in isolation. Students have knowledge of what they want to achieve and repetition of similar work is seen as unnecessary and boring. Peers are used to facilitate understanding. This category is characterised by students asking *How do I use this information?*
Different ways of knowing	Learning is viewed as hypothesising. The student believes there are multiple solutions to a problem. Learning is exciting. This category is characterised by students asking *What ways can I solve this problem?*

These conceptions of learning are also broadly hierarchical, in the sense that 'getting to know' is the least sophisticated view of learning where students see learning as mainly remembering facts, figures and knowing 'more'. In contrast, a more sophisticated view, such as 'different ways of knowing', portrays the learner as more active in the process of choosing learning goals, intentions, and criteria for learning. Those students with more sophisticated views still hold the earlier views when required, but they also hold a deeper sense of what knowledge and learning are. However, if a learner conceptualises learning only as getting to know, or getting better, their experiences in learning contexts will remain largely unfulfilled because they will not see a sense of agency in their own learning, or realise that knowledge is not something 'out there'.

For example, for students who largely held the conception that learning is 'getting to know', their view of learning was largely defined as acquiring facts and specific knowledge. For example, phrases such as 'empty brain' and 'filling up your brain' were used by students to describe the reason for learning. That is, they felt learning enabled them to fill their brain in order to progress. As the student in the following extract explains (Bourke, 2000), her brain was empty when born and learning was the process required to fill it up. However, interestingly, she differentiated between two sections of her brain and nominated one side for learning and the other for movement.

> S: When we're born we have a brain and all it does is make our body move and it's kind of empty and we need something to fill it up, so they teach us skills of learning and then we can go out and get a job and we know how to do things like that.
> R: So ... can you tell me more about the brain that's empty?
> S: Oh there's two halves, one half is used for moving your body and then the other half is for your learning. It's kind of empty until you fill it up. (p. 109)

This student later reported her brain was currently only one eighth full. She described how her brain was filling up. When asked how 'full' her brain presently was, she explained:

> Probably about half full, no it's probably about an eighth full probably because I've already just starting kind of learning. Through high school it might be just about a quarter or half full and then you get your job and it's half full and you keep learning and it gets to full almost and then it starts going down again when you get old. It probably still holds all that information but you just don't use it as much because you don't have a job anymore, you retire. (p. 110)

For students who want to 'fill their brain', they generally believe that others hold certain knowledge and therefore their role, as a student, is to access this knowledge. However, for other students, where learning is conceptualised as understanding and knowing, they reported intentional and active application of their own knowledge *in order to learn*.

The role of context

Working with students through teaching and research does enable educators to identify some understandings around school reform, learning and assessment that can not be obtained through other means. As with any area of education, the student behind the voice inhabits a social, cultural, political and economic context that shapes and defines their thinking. Correspondingly, there are diverse student 'voices' representing their ethnicity and gendered differences which means, when reporting on student voice, we need to ask "which students are representing the student voice of their school?" (Silva, 2001, p. 98).

Similarly, Connolly (2007) showed how socioeconomic status can affect students' future aspirations. He examined five and six year old boys' views about school, and asked them what they would like to do when they grew up. The results indicate how class location can make a difference to students' aspirations and expectations for the future. For example, students in a low socioeconomic and deprived area with high levels of unemployment gave responses such as: 'fix cars', 'kill rats and get a gun', 'join the army', 'clean carpets' and 'just go to work'. In contrast, students of the same age from an affluent area and higher socioeconomic group from the same city wanted to be 'a doctor', 'jet pilot', 'racing car man', 'scientist', 'artist', 'professional skateboarder' (Connolly, 2007). The point that Connolly makes is that these young students, in the poorly resourced school who form low expectations for themselves and their future, demonstrate "the imprint of social class on their lives" (p. 323). This is consistent with a broader contextual argument that improving socioeconomic status is a critical component of addressing inequities in outcomes. In other words, where a child lives, as distinct from who teaches that child, matters (Nash, 2004, 2005).

When participating in everyday learning activities in the classroom and beyond, every student brings his or her special lens incorporating experience, culture, background, interests and motivations to their learning. While teachers can never be expected to know everything about the student, awareness that there are these multiple learning contexts is essential. So too, is knowing that students bring to a learning activity or assessment more than they can ever demonstrate within the constraints of what is often the less authentic learning setting of a classroom. In the contemporary New Zealand context, this message is an important one for teachers. Bishop and Berryman (2006), for example, reported how Māori students respected teachers who knew about Māori life, customs, and "let Māori students be Māori" (p. 76). These young people called for teachers who could walk alongside them and understand "being in our shoes" (p. 77).

The conceptions of learning held by students influence the way they approach a learning task, what they hope to achieve through the activity, and their motivation to learn. When teachers take into account the way their learners think about, and actively undertake a learning activity, there is a greater likelihood of being able to partner with the learner and personalise learning in a way not possible through other means. One simple example is the use of teacher talk in a classroom. Studies consistently show students reporting that teachers talk too much, can be long-winded in their explanations and subsequently lose the connectedness with their students (Bishop & Berryman, 2006; Kane, Maw, & Chimwayange, 2006; Rudduck, 2007).

The teacher is only part of the context. *Where* learning occurs also plays an important role in how students view and approach learning. The setting can facilitate or hinder an individual's performance and to a greater or less extent determine an individual's ability to accomplish tasks. When students think learning is exciting and fun, their approaches are generally more positive and they are likely to engage more with the content. When the context is an authentic setting, success rates are also likely to be higher. In a study with Brazilian street-vendor children, Ceci and Roazzi (1994) showed that context makes a difference in how students demonstrate learning and understanding. Children in their study were assessed on a number of Piagetian tasks in two contexts. One was the street, which was an authentic context for the children while selling their wares, and the other a formalised testing situation. The children were more successful in their responses within the authentic context than the formalised, inauthentic setting. The context in which learning occurs provides students with cues as to what knowledge is valued, who values it, and therefore largely influences how students interpret a task and go about their learning. Bourke's (2000) New Zealand research also showed that students viewed, approached and assessed their learning differently depending on whether the activity was in or out of school.

Students show increased motivation and participation in learning when their views are sought (Rudduck, 2007). They can become key players in their own learning, and usually determine and interpret their own rules and self-assessment for this learning. On the basis of this argument, the teachers' role is to legitimise and authorise such involvement. The recently introduced *The New Zealand Curriculum* (Ministry of Education, 2007) supports this move with a change in the explicit focus of the purpose of assessment from improving a learning programme to improving teaching. The statement from the original curriculum framework document stated that "the primary purpose of school-based assessment is to improve students' learning and the quality of the learning programme" (Ministry of Education, 1993, p. 24). This has now been updated to read "the primary purpose of assessment is to improve students' learning and teachers' teaching as both student and teacher respond to the information that it provides" (Ministry of Education, 2007, p. 39). Consistent with the Ministry's Best Evidence Synthesis on quality teaching (Alton-Lee, 2003), the role of the teacher is seen as increasingly important in determining the quality of learning. This suggests that both teacher and learner have a role to play in the *use of* assessment data. Encouraging "students' capacity for self- and peer assessment, which leads in turn to increased self-direction" (Ministry of Education, 2007, p. 30) does acknowledge the use of student voice for greater self-determination.

Black and Wiliam (2005), in their review of assessment practice and policy in four countries, highlighted the disparity between formative assessment practices where student involvement is most likely (for example, self-assessment) and summative assessment where results are determined through testing and external assessment usually by the teacher (see Chapter 5). Paradoxically, they observe, "the better the teacher knows her or his students, through processes of formative assessment, the less likely it is that the information is used to inform judgments made about the student" (p. 260).

The argument that student engagement requires "inquiring into different ways of envisioning curriculum" is highly relevant here (Butler-Kisber & Portelli, 2003, p. 220). While essentially surface change to teaching approaches have been shown to make a difference for including student voice, for example, increasing group work, student-centred themes (Payne, Monk-Turner, Smith, & Sunter, 2006), it is claimed that deep-seated change will only arise through recognising democratic values and social justice (Rudduck, 2007). Further, it is argued that this can only happen in institutions that are prepared to reappraise their own identity and the role of students within this (Macbeath, 2006). Schools themselves, though, are caught in a political agenda that is relentless in its pursuit of 'standards', where teacher accountability and raising 'student outcomes' requires compliance and associated measurement. The aim is that student achievement scores can be compared at local, national and international levels (e.g., the high-profile monitoring and assessment exercises administered by the Organisation for Economic Co-operation and Development (OECD), Programme for International Student Assessment (PISA). Progress in

International Reading Literacy Study (PIRLS) and The Trends in International Mathematics and Science Study (TIMS). On this argument, student engagement is viewed as a necessary mechanism to increase participation in learning, that will translate into better results from schools. It is rather ironic then, that the *disengagement* of students from their own learning has been attributed by some researchers to the increased focus on standards and the associated pressures on both teachers and students (e.g., Smyth, 2006).

Implications for teachers

The involvement of students in educational institutions is a powerful means to support their learning. The voice of the student can have a positive impact on the educational institutions within which they learn. As discussed, there are three key roles students can play: informants around policy and practice, decision makers, and co-inquirers or co-researchers. The logic of changes in student roles is changes in teacher roles. While all such roles will change through the inclusion of student voice, those in educational leadership roles also need to work to ensure democratic values in curriculum and leadership are recognised. Smyth (2006) argues that "when students feel that their lives, experiences, cultures, and aspirations are ignored, trivialized, or denigrated, they develop a hostility to the institution of school" (p. 285). Educational leaders thus play a key role in developing a culture where student voice is actively sought, legitimized and included.

Martino and Pullotta-Chiarolli (2007) highlight the importance of difference and diversity as a starting point for creating communities that identify and celebrate diversity, where teachers' and students' understanding and acceptance of difference is an integral part of hearing the learner's voice. They argue that:

> such a commitment constitutes a threshold for developing a pedagogy of difference that starts with building knowledge about students' lives and incorporates this knowledge into developing an intellectually demanding and relevant curriculum where teachers feel a deep sense of responsibility for ensuring the safety and learning of all students. (p. 370)

Through identifying the students' views about learning, and identifying the multiple contexts of learning that take place, we are better able to understand students. This knowledge can be used to facilitate teaching in the classroom by helping teachers "to see teaching as a process of changing student conceptions" (Ramsden, 1988, p. 21). In classrooms where teachers can talk with students about their learning, students will become more aware of their own learning (Pramling, 1995). Encouraging teachers to develop strategies that involve learners in decision making, goal setting and self-assessment facilitates general student learning and develop students' conceptions of learning and self-assessment.

Teachers have to balance complex responsibilities to their students, their colleagues and themselves. As discussed in this chapter, student voice helps support teachers to understand learning. It also contributes to students' sense of self and to feeling valued. In a secondary school setting (described by Mitra, 2003, 2004), student forums, where students develop a sense of agency over decisions in schools, have been shown to increase student self-worth. As one student in the project stated, "I can really do something. I'm just not an ordinary guy. I have a voice ... My opinion counts and people need to really respect my opinion, to value it" (Mitra, 2004, p. 662). Other studies have shown similar results (e.g., de la Ossa, 2005; Jocson, 2006).

Through talking with students we can negotiate a closer understanding, especially as teachers are not expected to know 'everything'. Thiessen (2006) refers to student voice as the "clarion call for change in how we understand, respond to, and work with students" (p. 352). Therefore, when a student says "If I actually really, really, really want to do it then I set that goal and, like, I usually get, I usually am able to do that by the date that I set" (Bourke, 2000, p. 154), the best we can hope for, is that more students 'really, really, want to' achieve their goals, and more teachers want to help them get there. It is getting to the shared understanding of what this means for the learner that will make the difference.

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