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**STUDENTS' CONCEPTIONS OF  
LEARNING AND SELF-ASSESSMENT  
IN CONTEXT**

**A thesis presented in fulfilment of the requirements  
for the degree of Doctor of Philosophy in Education  
at Massey University**

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## Abstract

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This study investigates years 7 and 8 students' conceptions of learning and self-assessment and then examines these conceptions in a number of learning contexts. The study was undertaken in two phases within a sociocultural framework. The first phase used a phenomenographic approach which involved indepth phenomenographic interviews with 26 students from one school. The second phase used ethnographic methods to explore the learning and self-assessment experiences of seven students during learning activities in both school and out-of-school learning settings. Interviews and observations with these students took place over a school year period, and their teachers and parents were interviewed.

The phenomenographic results indicate that students hold a range of conceptions of learning and self-assessment. The less sophisticated conceptions of learning involve learning as a process of gathering facts from the teacher or other sources (books, computers) in order to "fill up the brain". More sophisticated views of learning involve students seeing learning as understanding, identifying different ways of knowing and applying different perspectives when solving a problem. The less sophisticated conceptions of self-assessment involve learners requiring external sources such as teachers, grades, stars, stamps or stickers to confirm learning, while more sophisticated conceptions of self-assessment involve the recognition of learning through pre-established or own identified criteria, and students would measure their performance in relation to these criteria.

The ethnographic phase of the study portrays how students learn and self-assess in a number of different learning contexts and settings. Specifically, the thesis identifies that both the *context* and the *assessment practices* associated with the context, play a major role in identifying how students viewed learning and, ultimately, how they approached learning tasks and the way they self-assessed their work. Out-of-school learning settings established clear guidelines for the activity, identified explicit goals for learning and encouraged a community of practice. School settings tended to encourage fragmented learning and adherence to teacher expectations, rather than students' personal goal setting.

The results from this study offer insights into how students conceptualise learning and self-assessment, and how different settings and contexts impact on the learner. Learners assume different roles and responsibilities according both to the group in which they are participating and to the meaning they attribute to the task.

# Acknowledgments

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*Getting to know something is an adventure in how to account for a great many things that you encounter in as simple and elegant a way as possible. There are lots of different ways of getting to that point, and you don't really ever get there unless you do it, as a learner, on your own terms. All one can do for a learner en route to her forming a view of her own is to aid and abet her on her own voyage. (Bruner, 1996, p. 115).*

This thesis is a celebration of learning, completed with the support and encouragement of many people who have aided and abetted me during this time.

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*Here's to one journey's end!*

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# Chapter 1

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## Introduction

*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, 1996a, p. 565).*

As Pramling (1996a) argued above, we can help students become “better learners” merely by supporting them in becoming more aware of their learning. However, to do this as educators we must first understand how students conceptualise and experience learning. This study, *Students' conceptions of learning and self-assessment in context*, investigates the phenomena of learning and self-assessment. The study examines the variation of meaning given to learning and self-assessment by years 7 and 8 (10.5–12.5 year old) students, and explores this meaning through learning activities in both school and out-of-school settings.

On numerous occasions while working with students as a classroom teacher and later as an educational psychologist, I came across learners who completed tasks for the sole purpose of complying with teacher requests. When asked, “Why are you doing this activity?”, students invariably responded “Because the teacher told me.” As an educator, I became aware that many students found learning activities within a classroom context arduous and irrelevant, yet these same students could talk about their learning in out-of-school contexts with enthusiasm. I became interested in how students defined learning, and more specifically how they knew when they had learned, and how they made decisions about the level of energy they put into their various learning activities.

Twenty years ago, Donaldson (1978) posed questions that are still relevant today. She asked why learners quickly became disillusioned with school and stated that “we are forced to recognize that the promise of the early years frequently remains unfulfilled” (p. 14). When a 5-year-old child enters school for the first time, his or her life changes and the metamorphosis into student life begins. The classroom becomes a world of learning unlike the child's familiar world of learning through play. Increasingly,

throughout their experience of school, students learn that the principal business of school is “work” (Bereiter & Scardamalia, 1989, 1996; Lancy, 1993), which students either dislike or distance themselves from (Woods, 1990). This is important, given that the way a child views the purpose of school directly affects how he or she starts to view learning (Robson, 1993).

However, a different picture of learning emerges outside the classroom. In contrast to many of the learning experiences in the classroom, the activities learners are involved in during out-of-school learning activities are viewed as enjoyable and engaging. One of the reasons for this is that learners associate choice, decision making and personal autonomy with out-of-school learning (Keating, 1996; Moll & Greenberg, 1990; Resnick, 1987, 1989). The freedom to choose learning activities and make decisions about learning is often not a feature of school life. In fact, one of the more prominent activities within a classroom has been described as waiting – not learning (O’Loughlin, 1995; Säljö, 1988).

Vosniadou (1996) referred to the “poverty” of school learning because the content tends to be decontextualised. Vosniadou (1996) argued that “what is learned in the school has little to do with culturally relevant and authentic activity in everyday life” (p. 104). Therefore, as Bereiter and Scardamalia (1989) stated, “an important goal of schooling...should be to upgrade children’s conceptions of what they are doing – from seeing it as work, evaluated according to its execution and its material products, to seeing it as learning, in which they themselves have a major stake” (p. 380).

## **1.1 Background to the study**

Young children in New Zealand start school at the age of 5 years, although education is not compulsory until the age of 6 years. From the ages of 5 to 13 years, children are educated in a primary school. Many students attend an intermediate school for years 7 and 8 of their schooling, before attending secondary school where they spend between 3 and 5 years. Throughout the time that students spend in schools (between 11 to 14 years), they are forming ideas about learning based on their experiences. These views contribute to the way they approach learning and the motivation they bring to it. Furthermore, these students are assessed by teachers in ways that contribute to learners’ ongoing view of learning and of themselves in relation to learning. While teachers are

increasingly aware of the impact of assessment on student learning (Aschbacher, 1994; Pollard, 1997; Pollard, Broadfoot, Croll, Osborn, & Abbott, 1994), there is limited understanding of how students view learning or self-assessment (Pramling, 1996a).

Over the past 10 years, teachers in New Zealand schools have been involved in a turbulent era of curriculum change that has had a marked impact on teaching and assessment practices. A public discussion document, *Education for the 21<sup>st</sup> century* outlined changes to curriculum in primary and secondary schools (Ministry of Education, 1993a), and *The New Zealand Curriculum Framework* (1993b) introduced the first major overhaul of the curriculum in schools since the 1940s. *The New Zealand Curriculum Framework* is “the foundation policy for learning and assessment in schools”, although schools still have “the freedom to develop programmes which are appropriate to the needs of their students” (Ministry of Education, 1993b, p. 1). Each curriculum document introduced seven Essential Learning Areas (Language and Languages, Mathematics, Science, Technology, Social Sciences, The Arts, and Health and Physical Well-Being); and eight Essential Skills (Communication, Numeracy, Information, Problem-solving, Self-management and Competitive Skills, Social and Co-operative Skills, Physical Skills, and Work and Study Skills). Achievement objectives are outlined in each new curriculum statement. As a result of the introduction of the new curriculum and assessment documents, teachers have needed to familiarise themselves with the documents, and incorporate these changes into practice. This has had implications for both their teaching and their assessment practices.

Policy documents in New Zealand that impact on assessment in schools include *The New Zealand Curriculum Framework* (Ministry of Education, 1993b), *Assessment for Better Learning* (Ministry of Education, 1989), *Assessment: Policy to Practice* (Ministry of Education, 1994), and the individual curriculum documents. Before these new curriculum initiatives were introduced, an external auditing agency, the Education Review Office (ERO) was established in 1989 to undertake assurance audits and effectiveness reviews in schools on a 3-yearly cycle. These reviews are linked to teacher and school accountability (Thrupp & Smith, 1999; Wylie, 1997), and have impacted on the type of assessment practices teachers choose (Hill, 1999; Thrupp & Smith, 1999). For example, studies have shown that teachers opted for assessment strategies that were quantitative, which could be transferred into graphs and checklists,

because they felt obligated to *prove* that student learning occurred (Bourke, Poskitt, & McAlpine, 1996; Bourke & Willis, 1998; Thrupp & Smith, 1999).

Every year from 1994, the Ministry of Education commissions teacher development programmes on assessment, *Assessment for Better Learning* (ABLE), to assist schools and teachers with their assessment practices. In 1995, while colleagues and I led one of these ABLE programmes, we noticed that teachers' attempts to incorporate authentic assessment measures such as portfolios and self-assessment strategies in the classroom were hindered by the teachers' simultaneous attempts at meeting the accountability procedures of the external monitoring agency, the Education Review Office (Bourke, Poskitt, & McAlpine, 1996; see also Hill, 1999; Thrupp & Smith, 1999). While attempting to develop authentic assessment practices with the ABLE support, teachers did not create the intended formative assessment strategies for the learner. Although new practices such as self-assessment were trialled and developed, teachers tried to *quantify* the results from the students' self-assessment sheets (Bourke & Willis, 1998). Teachers tended to develop formalised and summative checklists or grids at the end of a piece of work, as suggested in the *Assessment: Policy to Practice* document (Ministry of Education, 1994). Also, at that time, the Education Review Office (ERO) encouraged schools to produce summative outcomes-based assessment measures (Thrupp & Smith, 1999). Therefore teachers became tangled in the dilemma of developing assessment procedures for accountability while at the same time creating assessment tasks to enhance student learning, which is a tension educators grapple with internationally (Black, 1994, 1995, 1998; Gipps, 1994; Nisbet, 1994). Ironically, Crooks (1988) has pointed out that summative assessment tends to have the impact on students of encouraging a surface approach to learning, and therefore, as Pollard (1997) noted, "the direct contribution of formative assessment, at the heart of the teaching-learning process, should never be forgotten. Ultimately, it may be more important in achieving educational quality" (p. 306).

One means of addressing this dilemma is to encourage and support teachers to develop authentic assessment practices, such as self-assessment, to enhance learning, and therefore ultimately increase achievement. In order to do this, we need to first learn about students' conceptions of learning and self-assessment. It is critical to work with children and young people to explore learning and self-assessment from their perspective so that they become more intentional learners (Bereiter & Scardamalia,

1996; Pramling, 1988, 1990, 1995). Furthermore, when teachers understand how students view learning and self-assessment in different contexts, they are in a better position to facilitate learning opportunities for their students. Teachers and students alike can become more aware of the learning process by simply considering what it means to learn, and finding out what variation exists in conceptions of learning and self-assessment. It is also important to ascertain learners' views on learning and self-assessment, because a number of studies involving both tertiary-level and school-aged students have demonstrated that there is often a discrepancy between students' and teachers' goals for learning (Bereiter & Scardamalia, 1989, 1996; Lemos, 1996; Marton & Säljö, 1976). These studies consistently recognised the disparity between what students think they are doing when applying themselves to an assigned activity or task, and what the teacher intends them to be doing.

## **1.2 The preliminary study**

Before the current study, a preliminary study was undertaken to explore students' conceptions of learning and assessment in a school context. Using individual in-depth interviews with students from four class levels (new entrants, year 5 students, year 8 students, and year 12 students), the way students experience and conceptualise learning and assessment was explored.

In the preliminary study, 24 students were interviewed. Six students were selected within each class level, and the participants ranged in age from 5 years 4 months to 17 years old. These students came from four schools including two primary schools, an intermediate school and a secondary school. All interviews were undertaken on an individual basis within the school grounds and took between 15 and 20 minutes with the 5-year-olds, and between 45 and 50 minutes with the older students.

The interview questions explored students' conceptions and experiences of learning and assessment. Results indicated that young children of 5 and 9 years of age held a school bound view of learning and tended to view the learning of school rules and routines as very important. When asked about learning in other settings, common references were television programmes, clubs, hobbies and sport. The learners at secondary school also identified with learning at school, although many of them discussed learning in settings out-of-school particularly in relation to their part-time work. Intermediate school

students referred mainly to school learning but also discussed learning through their clubs, music activities, sports, dancing and other contexts.

Through the preliminary study, several themes about learning and assessment emerged across the age range, described more fully in Bourke, 1996 (see Appendix A). In the preliminary study, the students were asked about “assessment”, rather than “self-assessment”, which is reflected in the paper. However, because the way students conceptualised learning impacted on the way they believed they could measure and identify their learning (self-assessment), the main study focuses on the self-assessment aspect, that is, how students know when they have learned. Therefore, as a result of this preliminary study, the focus on “self-assessment” was adopted for the main study.

The preliminary study identified emerging themes in relation to students’ views and experiences on both learning and assessment. While Bourke (1996) describes the results from the assessment perspective, other associated learning themes were identified:

- Students see learning as occurring within a transmission model where the teacher is the key (although not the only) source of information. Within this model, the students perceive their “job” as being to remember the facts.
- Learning is fun when the students feel they have control over the activity.
- Students who seek understanding also report knowing when they have achieved this. However, students who do not seek understanding in their learning, report knowing when they have achieved only after receiving a teacher’s grade or some other external device, such as a star, stamp or sticker.
- Young children enculturated into school life, view the learning of rules and regulations as being just as important as the learning of reading, writing and mathematics.
- Students see assessment as an external source of control over their learning where the purpose is either to tell them what they have learned, or how much they have learned.
- Assessment is a means to sift out the winners and the losers.
- Assessment is separate from learning, and institutionalised self-assessment is regarded as a waste of time.
- There are times when the learner already knows s/he has learnt something without an external source identifying that the learning has occurred.

- Assessment is a means to different ends.
- Learning in out-of-school contexts was experienced in different ways from learning within a school environment.

The preliminary study helped identify an extension of the focus for the main study to include out-of-school contexts as well as school settings, to extend the methodology to an ethnographic phase which would require indepth observations, and to explore students' conceptions of self-assessment. It also helped refine the sample to concentrate on intermediate school students so that the researcher could enter both school and out-of-school contexts for detailed observations. It was clear that in order to understand students' conceptions of learning and self-assessment, both indepth interviews and detailed observations were required to really appreciate the students' views.

### 1.3 Understanding students' views

In the book, *To Kill a Mockingbird*, Harper Lee emphasises the importance of stepping into another's shoes to understand their position.

“First of all”, he said. “if you can learn a simple trick, Scout, you’ll get along a lot better with all kinds of folks. You never really understand a person until you consider things from his point of view –”.

“Sir?”

“– until you climb into his skin and walk around in it” (Lee, 1960, p. 36).

There has been a call to develop students' theories of learning (Paley, 1979, 1992, 1999; Pollard, 1997; Pramling, 1983, 1990, 1996a), and to listen to the student voice in research (Gipps & Tunstall, 1998; Pollard, 1997; Smith, 1996; Thiessen, 1997). As Bereiter and Scardamalia (1989) stated, “To the extent that students take an active role in learning, their own theories of what knowledge consists of and how it is acquired can be expected to matter” (p. 367).

The current research employs two different methodologies to ensure the student's perspective is represented in the study. First, a phenomenographic approach that formally sets out to describe and understand how people experience phenomena (Dall’Alba, 1994a, 1994b, 1996; Marton, 1981, 1986, 1988; Marton & Booth, 1997); and second an ethnographic approach that identifies and recognises the context within which these phenomena occur (Lave, 1996; Rogoff, 1996, 1998). Both approaches employ qualitative methods because such methods “can be used to uncover and

understand what lies behind any phenomenon about which little is yet known. It can be used to gain novel and fresh slants on things about which quite a bit is already known” (Strauss & Corbin, 1990, p. 19). Pollard (1997) discussed the need to collect data from children on learning activities, and argued that these data are essential to really understand how to motivate learners to become more actively engaged in the learning process. For this to happen, we must look at learning from a new perspective – from the learner’s point of view. This means not only talking with the learner, but also working alongside the learner, and asking ourselves: are we seeing the same thing? This study is an attempt to do just that.

The following chapter reviews the literature on learning in both school and out-of-school settings, examines the impact of assessment and self-assessment practices and students’ roles in research about learning and assessment. Chapter 3 outlines the methodology for the study, which involves an overview of the theoretical influences of the two approaches (phenomenography and ethnography) used. Chapter 4 examines the specific methods in relation to these two approaches. The results are outlined first for the phenomenographic data collected in Phase One (chapter 5) and then for ethnographic data collected in Phase Two (chapter 6). The discussion on both sets of results takes place in chapter 7 followed by an examination of the implications for teachers, learners and policy in the final chapter.

## Chapter 2

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### Review of the Literature

*It grows increasingly clear that knowledge of all types – practical, scientific, theoretical – is always a social and cultural product. As advanced information technologies spread, the social nature of knowledge becomes ever more apparent (Keating, 1996, p. 475).*

This chapter outlines relevant theoretical positions on learning, but two specific theories, the sociocultural theory of learning and a phenomenographic view of learning, will be examined more closely because they underpin the present study. Student approaches to learning, and the role of context in learning will be explored, followed by an examination of school and out-of-school learning. With respect to phenomenography, Marton and Booth (1996) argued that people do not just learn, they always learn “something”. Therefore, the role of assessment and self-assessment in learning is also examined within this chapter, to explore how educators, teachers and learners assess or identify that “something”.

#### 2.1 Theoretical understanding of learning

There are many learning theories that have developed over the centuries to explain what appears to be an elusive phenomenon. Theorists have attempted to explain learning in a number of ways and some have argued that it is merely an abstract concept (Lave, 1993; Neisser, 1982a, 1982b; Säljö, 1988). While Neisser (1982b) argued that “learning in general does not exist” (p. 12), it can be explained in relation to a number of theories and explored empirically within the framework of these theories.

The classical theory of learning suggests that all knowledge is innate and that learning is merely a process of recalling this reality (Plato, 427–347 BC). In a story to explain this theory, Plato told how a young warrior, Er, is taken for dead in a battlefield but wakes 12 days later to describe his experience. His soul departed from him, as did the souls of his dead comrades. His soul, along with the souls of his comrades, have their futures determined. They get to choose what they want to “be” and their decisions are based on their experience of the life they have already lived. All the souls are told to

drink from the river of Forgetfulness. As they drink, they forget everything about this experience and the knowledge they have acquired before being born again. Some drink more than their measure (which presumably explains why some people have difficulty learning because they have “forgotten” too much of their knowledge to recall). However, Er is forbidden to drink from the water, hence his memory of the experience is retained and he is able to relay the story when he wakes from his coma (Plato, *The Republic*). Plato’s point in telling this story was that he viewed learning as the process of recalling what the soul has already seen and absorbed.

In a similar way, the philosopher Locke (1653–1704), believed that the ability to learn was innate, and that the faculties we are born with determine our learning. Locke argued that, the mind is “white paper void of all characters, without any *ideas*” (Locke, 1977, p. 33). Both Plato and Locke took the view that learning is individualistic, but Locke disagreed that knowledge itself was innate (as Plato appeared to claim). He argued that infants come into the world with a mind devoid of content but that learning takes place as a result of certain biologically determined abilities (Locke, 1977). Both these views present a passive picture of the learner especially during the stages of knowledge acquisition (Bigge & Shermis, 1999; Hilgard & Bower, 1975; Winch, 1998).

The behavioural period saw further developments in the understanding of learning. Within the behavioural paradigm, the earlier focus on the individual’s thinking was reduced to studies on animal behaviour. Pavlov (1849–1936, classical conditioning) and E.L Thorndike (1874–1949, operant conditioning) developed two theories that dominated throughout the behavioural period and continue to influence behavioural theories (Bigge & Shermis, 1999). These theories were similar in that they looked at the behaviour of animals to define how they reacted to the environment as a means of survival; the same theories were later used to describe how people reacted to their environment (Pavlov, undated; Thorndike, 1965). Although Pavlov was interested in stimulus and how it could be manipulated to seek a response, Thorndike concentrated on response, that is, he was interested in the effect a response had on altering or manipulating the behaviour of animals, and later people. Skinner developed this theory further in the late 1930s by showing that random rewards were more effective than frequent or systematic rewards in altering a person’s behavioural pattern (Skinner, 1972). Skinner’s (1972) theory was based, in part, on the assumption that “almost all

living things act to free themselves from harmful contacts” (p. 26), and therefore behaviour can be shaped through the introduction of negative reinforcement. The similarities and underlying assumptions of these theories within the behavioural paradigm are that behaviour can be *shaped* and that learning is simply the acquisition of a new behaviour without reference to the mental or cognitive acts (Bigge & Shermis, 1999; Hilgard & Bower, 1975; Winch, 1998).

As a reaction against this mechanistic and reductionist approach to learning, and this lack of cognitive considerations, theorists began to move away from describing learning as only that which could be observed. There are various cognitive views on learning but the common assumption underlying these paradigms is that learning is an active, constructive process where the whole is greater than the sum of the parts. This required a shift of thinking from learning that could be broken down into discrete tasks and studied in detail, to a holistic approach where learning is a continuous complex process.

The work of Piaget (1929, 1979) has largely influenced the way learning has been understood. Piaget’s work, while controversial in part, contributed to the knowledge that children’s thinking at any given age reflects a unique way of interpreting the world. For instance, whether the learner is 5, 12 or 16 years old, there are qualitative differences in what and how they know. Piaget developed the notion that learners are not passive individuals waiting to be shaped and moulded by environmental pressures, but are active learners who act on their environment. Piaget (1979) explained that:

knowledge is derived from action...To know an object is to act upon it and transform it...To know is therefore to assimilate reality into structures of transformation and these are the structures that intelligence constructs as a direct extension of our actions (pp. 28–29).

However Piaget did not take account of context when exploring student learning. Rogoff, Mistry, Göncü, & Mosier (1993) noted that Piaget’s work examined the individual development as being general across contexts and that his primary focus “was on the individual rather than on the aspects of the world that the child struggles to understand or on how the social world contributes to individual development” (Rogoff et al., 1993, p. 5). However, Piaget did believe that the social world has an impact on the individual’s development in so far as the individual adapted to the environment (Piaget, 1929, 1979).

While learning can be defined and conceptualised in a number of ways according to the underlying theory, for individual learners, the concept of learning and what it means “to learn something”, is influenced by their *experience* of learning. In order to explore and understand how a student experiences learning from his or her perspective, a research specialisation phenomenography was developed in the 1970s.

### **2.1.1 Phenomenographic view of learning**

Phenomenography is a research approach that describes how people experience phenomena in qualitatively different ways (Dall’Alba, 1996; Marton, 1981, 1986, 1996; Marton & Booth, 1996, 1997). The aim of phenomenography is to describe, analyse and understand experiences through experiential description (Marton, 1981). The basic principle underlying phenomenography is that there is only a relatively limited number of qualitatively different ways in which people experience phenomena or aspects of reality (Marton, 1981; Marton & Booth, 1997; Marton & Säljö, 1976).

Phenomenography originated in Sweden in 1970 when Marton, Svensson, and Säljö began investigating aspects of student learning in the Department of Education and Educational Research at Göteborg University (Marton, 1981; Marton & Svensson, 1979; Marton & Säljö, 1976; Säljö, 1979). In contrast to the dominant paradigm of the time, Marton, Svensson, and Säljö were interested in the relationship between what and how students learn, rather than focussing on the more favoured position of how much a student learned and why (Dall’Alba, 1996). In these early studies the focus was on the relationship between the outcome and process of learning where it was argued that the two were internally related (Marton & Svensson, 1979; Marton & Säljö, 1976). As Dall’Alba (1996) pointed out, “this means that the learning process and outcome are two aspects of the same whole, rather than separate and distinct phases” (p. 7). This is relevant when considering that in educational settings it is the learning outcomes that are formally assessed, without consideration to the process of learning. These studies led to a phenomenographic view of learning that is understood as a change of conception, as a result of interacting with people or other cultural artefacts (such as computers, books).

Phenomenography is an approach that takes a second-order perspective, that is, it examines phenomena from the perspective of the person experiencing that phenomenon

(Marton, 1981, 1986). Marton (1981) differentiated between a first- and second-order perspective by describing a second-order perspective as attempting to understand and describe someone else's *experiences of the world* around them, while a first-order perspective is describing that world from the researcher's point of view. The first-order perspective relies on being able to understand and *interpret* the view of the participant, for example, how students understand and experience learning, while the second-order perspective attempts to explore the experiences directly from the participant's perspective.

### **2.1.2 Sociocultural theory of learning**

Learning occurs in any situation, but different instructional models involve different relations of learners to the information and its uses in sociocultural activities. This view is based on the theoretical position of transformation of participation, which takes as a central premise the idea that learning and development occur as people participate in the sociocultural activities of their community, transforming their understanding, roles, and responsibilities as they participate (Rogoff, Matusov, & White, 1996, p. 390).

As noted by Rogoff et al. (1996) a sociocultural perspective recognises that learners adopt different roles and responsibilities according to the group in which they are participating. Rogoff et al. take the position that all learning occurs in both cultural and social contexts, with the learner an active member of each context. The premise of a sociocultural view of learning is that cognitive change is seen as a social and interpersonal process (Granott & Gardner, 1994), and is a move away from viewing learning as beginning and ending with the individual (Lave, 1996). The theory of the learner as an individual within a wider social context was developed by Vygotsky (1978, 1981, 1987, 1988) to emphasise the importance of the relationship between thinking and the social organization of instruction.

As Vygotskian theory underpins a sociocultural theory of learning, it is important to examine how Vygotsky viewed the relationship between learning and development. While Vygotsky was considered a Marxist methodologist and psychologist because of his interest in activity, and life-as-lived (Newman & Holzman, 1993), he was not considered Marxist in the sense that he did not subscribe to the Marxist notion that viewed people as *products* of history and culture (Bruner, 1973, 1996). This is relevant

because the interaction between people and their tools, and the theory of semiotic mediation is central to his theory (Bruner, 1973, 1996; Wertsch, 1991).

Vygotsky identified three theoretical positions in relation to development and learning but, as he did not agree with these positions, he proposed a fourth position. This fourth position underpins his theoretical and methodological contributions to the field of child development and the acquisition of higher psychological functioning. Vygotsky's first identified theoretical position was that *processes of child development are independent of learning*, which argues that learning is an external process not actively involved in development. The argument from this position is that development is always a prerequisite for learning, and if a child's mental functions (intellectual operations) have not matured to the extent that he or she is capable of learning a particular subject, then no amount of instruction will prove useful.

Vygotsky's second identified theoretical position was that *learning is development*. This position argues that both processes occur simultaneously. Learning and development coincide at all points in the same way that two identical geometrical figures coincide when superimposed. Vygotsky's third identified theoretical position was *a combination of the above two theoretical positions*. This involves the idea that the process of maturation prepares and makes possible a specific process of learning. This in turn stimulates and pushes forward the maturation process. Learning and development therefore occur simultaneously as a result of their impact on one another.

Vygotsky did not adhere to any of the above positions. While he recognised the logic in each case, he disputed them as being useful to examine the relational view of learning and development where learning precedes development. As an alternative to the above positions, Vygotsky developed the *Zone of Proximal Development (ZPD)* to explain his theory. The ZPD is 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 ZPD places an emphasis on the importance of social contexts for intellectual achievements. Moll and Whitmore (1993) noted that Vygotsky used this concept "to emphasise the importance – in fact the inseparability – of sociocultural conditions for

understanding thinking and its development” (p. 19). One definition of the ZPD highlighting the role of culture and community is given by Morss (1996) as “the difference between individual and collective achievement” (p. 22). Other ways to define the ZPD is between some measure of independent achievement and some measure of guided achievement. According to Morss, Vygotsky’s theoretical position can be interpreted as meaning that “personal achievement is always within a collective approach” (Morss, 1996, p. 23) and therefore Vygotsky “denies the reality of independent achievement itself” (Morss, 1996, p. 22). However, this may not be an entirely fair interpretation of Vygotsky’s intention because through his process of internalisation, Vygotsky argued that we go through a process of social construction of an external activity before the process begins to occur internally. He does therefore recognise an internal, or individual reality. For example, Vygotsky states that “every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level; first, *between people (interpsychological)*, and then *inside the child (intrapsychological)*. All the higher functions originate as actual relations between human individuals” (Vygotsky 1978, p. 57). The implications of Vygotsky’s work is that learning theory goes beyond the mere transmission of knowledge from expert to novice, and his theory is used to incorporate both learning and assessment strategies that highlight the centrality of a mediator (teacher, peer) in the process (Kozulin & Presseisen, 1995).

The sociocultural theory of learning is based on the Vygotskian notion that development occurs through sociocultural activity. Heath and McLaughlin (1994) stated that “learners in groups have access to the social distribution of knowledge and skills through personal, interpersonal *and* community working together” (p. 473). This enables learning to take place through collaborative social interaction (Brown, Collins, & Duguid, 1989a). The sociocultural theory of learning therefore is formulated on the understanding that people work and learn collaboratively not individually (Resnick, 1988, 1989; Rogoff, 1995). Rogoff (1996, 1998) argued that sociocultural theory is an approach away from a transmission or acquisition model of learning and development, and influences both ways in which learners are evaluated, and research questions in relation to learning.

Rogoff (1997) identified three ways to examine how learning is achieved. The first two are based on a transmission or acquisition of information model, and the third model is based on a community of learners:

1. Transmission of ideas and information to the brain from the outside world.
2. Acquisition of information and ideas by the brain.
3. Guided participation in practice (apprenticeship model).

Both the transmission and acquisition models are viewed as versions of a one-sided model (Rogoff, 1990, 1997; Rogoff, Baker-Sennett, Lacasa, & Goldsmith, 1995). This means that the world is conceived as active in the former and the individual active in the latter. In contrast, the third model proposes that “people change through transforming their *participation* in sociocultural activities – in which both the individual and the rest of the world are active” (Rogoff, 1997, p. 266). Within this perspective, learning is a shared endeavour where learners’ ideas are built up in the community of learning, and where learning occurs through participating in a number of activities and contexts.

Rogoff (1996) described how the roles of the learner and social partners (adults, peers) are interdependent, active and dynamically changing. The focus is on the changes taking place during an activity, rather than on an individual’s acquisition of knowledge.

Individual, interpersonal and community processes are all developmental. Individuals cannot be excised from their involvement in activities to evaluate individual change; rather, individual change is studied as it constitutes and is constituted by interpersonal and community processes in sociocultural activities (Rogoff, 1996, p. 279).

The three models of learning identified by Rogoff (1997) have implications for the way educators teach students and assess student learning. A transmission model emphasises the teacher-directed model of instruction where assessment of learning is completed through tests with known answers. Rogoff and Toma (1997) give the example of the question “when did Columbus sail?” “1492” (p. 473). This “question-answer” discourse is prevalent in Aotearoa/New Zealand schools, partly because teachers feel the pressure from external Government agencies (such as the Education Review Office) to be accountable for student learning.

One particular model, the guided participation in practice or apprenticeship model, is based on the sociocultural framework. It emphasises “the context-dependent, situated,

and enculturating nature of learning” (Brown et al., 1989a, p. 39), and is based on the theoretical work of Vygotsky, incorporating the notions of authenticity, collaboration and empowerment. The metaphor “scaffolding” has been used to describe the instructional practices that support learning within this Vygotskian framework, which is also based on an apprenticeship model (Wood, Bruner, & Ross, 1976). There are five aspects of teaching that characterise scaffolding. Wood et al. (1976) identified that scaffolding occurs when the teacher: provides a support for the learner; functions as a tool; extends the range of the learner; allows the learner to accomplish a task not otherwise possible; and selectively aids the learner where necessary.

The concept of scaffolding, particularly when peers work together collaboratively, is related to the concept of cooperation, yet it is rather ironic that cooperation between students within a school setting is often called “cheating” (Entwistle, 1987; Matusov, Bell, & Rogoff, 1998). Other researchers have suggested that the literature on scaffolding presents a picture of “willing teachers, eager learners” (Goodnow, 1996, p. 356) that does not question the politics of the teacher-learner relationship. Rogoff (1998) addressed this criticism by claiming that collaboration is neither inherently positive nor negative. In fact, Rogoff (1998) argued that discord is often necessary for learning where, based on Piaget’s theory, conflict contributes to understanding.

Participation in practice is therefore seen as important in understanding learning and development. This has been described as guided participation (Rogoff, 1990); and legitimate peripheral participation (Lave & Wenger, 1991), and to a lesser extent, situated learning. Billett (1996) described situated learning as “learning through goal-directed activity situated in circumstances which are authentic, in terms of the intended application of the learnt knowledge” (p. 263). Lave and Wenger (1991) viewed legitimate peripheral participation as “an evolving form of membership. We conceive of identities as long term, living relations between persons and their place and participation in communities of practice” (p. 53). When examining the teaching and learning process, Entwistle (1987) also placed emphasis on the interaction between learner, teacher and institutional procedures. Entwistle (1987) argued that studies involving students’ cognitive processes and study strategies, that is, their learning, must be undertaken “in relation to the strong environmental pressures created by both teaching and assessment structures and procedures” (p. 13).

In a study that examined collaboration amongst learners, Rogoff and Toma (1997) examined how the cultural contexts of teachers and parents impacted on their models of instruction depending on their different sociocultural settings. For example, students were exposed to both the transmission model and the participation model depending on their parents' and teachers' modes of instruction. The sociocultural setting of the parents and teachers largely influenced these modes of instruction. While Rogoff and Toma (1997) were not arguing for an "either or" approach to assisting learners, they made the point that communities influence the mode of instruction, and that as communities change, so too does the mode. More importantly, a number of researchers (e.g., Boaler, 1993; Rogoff & Toma, 1997) argued that learners operate in more than one system and that this requires a change in roles for the learners. As Rogoff and Toma (1997) pointed out "flexibility is likely to be useful or even necessary in the complexity of everyday life in today's world" (p. 492).

## **2.2 Approaches to learning**

Conceptions of learning have been identified through phenomenographic studies of early childhood learners (Pramling, 1988) and adult learners (Säljö, 1979; Marton, Dall'Alba, & Beaty, 1993). In a study of young children, Pramling (1988) identified three conceptions of learning that impacted on the way they learned. The children identified learning as: learning to do; learning to know the world; and learning to understand. In relation to these conceptions, the children identified the *how* of learning as: learning as doing; learning by growing older; and learning by experience.

Säljö (1979) and Marton et al. (1993) explored how adults conceptualised learning. Initially Säljö identified five qualitatively different conceptions of learning by tertiary 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).

The views on learning in both Pramling's (1988) study and the studies with adult learners are seen as hierarchical in the sense that they move from the least sophisticated and least inclusive, to the more inclusive and therefore sophisticated conception of learning. The six categories for the conceptions in adults learners are outlined in Figure 2.1. from the least sophisticated and least inclusive (A), to the more inclusive and therefore sophisticated (F).

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

Figure 2.1. Conceptions of learning in adult learners (based on empirical data from Marton, Dall'Alba, & Beaty, 1993; Säljö, 1979)

The conceptions of learning identified within the adult learners have been linked to the student's approach to learning. For example, Säljö (1979) identified conceptions A, B, and C as the most common among students adopting a surface approach to learning, whereas the students adopting a deep approach tend to conceptualise learning as D or E. Marton and Säljö (1976) investigated approaches to learning, and differentiated between a surface and a deep approach. Further research in this area carried out between 1968 and 1981 identified another approach, a strategic approach, to learning (Entwistle, 1987). These three types of learning approaches are believed to be linked to learning outcomes, although the learner's *intention* regarding the learning activity defines the type of approach taken (Entwistle, 1987; Marton & Säljö, 1976).

The deep approach to learning is associated with the learner's intention to seek understanding of the text or activity. The learner interacts with the content of the material, and relations are made between the content and past experiences and prior knowledge. However, although the employment of a deep approach to learning is dependent on prior knowledge of the topic involved, Entwistle (1987) argued that it might also depend on general intellectual ability and therefore the mere *intention* to employ a deep approach does not necessarily mean it would be carried out as described.

When adopting a surface approach to learning, the learner's intention is to complete the assigned task. The task is an end in itself rather than a means to an end. Therefore the learner usually employs strategies such as rote learning, memorisation and focussing on discrete elements rather than the whole. Surface learning tends to be unreflective, which leads to learning outcomes that are based on a reproduction of text or lesson rather than an interpretation or understanding of the communicative intent of the author (Ramsden, 1988; Schmeck, 1988). In other studies that have not been undertaken within a phenomenographic framework, a similar concept to surface learning has been identified.

For example, Gipps (1994) referred to “shallow learning” but it is essentially the same concept as surface learning. She defined shallow learning as “the acquisition of principles, from a teacher or other instructor without commitment or deep consideration” (p. 23).

Students learn to cope with school through strategies that subvert learning and encourage a surface approach to learning (Bereiter & Scardamalia, 1989, 1996). As Bereiter and Scardamalia (1989) pointed out:

These strategies meet the short-term goals of school activities (producing a summary, completing a writing assignment, preparing to answer comprehension questions) but fail to address long-term goals (learning to integrate information in reading and writing or to build knowledge of long-term value) (p. 367).

The strategic approach to learning, identified by Entwistle (1987), is associated with the learner’s intention to maximise grades. The learner has a motivation to achieve a desired outcome – for instance higher grades – rather than to understand the content. The strategic approach is characterised by strategies to promote learning. These include: organising time, materials and conditions for studying that are conducive to learning; using strategies such as examining past examination papers for cues as to content and format of examinations; and generally being alert to cues about marking and assessment schemes.

Students’ approaches to learning are also influenced by teaching and assessment practices as shown in a study of year 12 students’ understanding of “understanding” in chemistry undertaken by Burns, Clift, and Duncan (1991). While Burns et al. (1991) identified that teaching for understanding was necessary for students to learn with understanding, some students were observed to become disillusioned or hindered in their attempts at understanding (through asking the teacher questions), because teacher behaviour discouraged such responses. Burns et al. also found that students assessed their understanding differently according to their conceptions of understanding.

The studies that explored the approaches to learning were conducted in the context of formal tertiary learning settings and secondary schools. It is perhaps not surprising then, that many of the students within these studies tended to employ a surface or strategic approach to learning to maximize their chances for a passing grade (Bereiter & Scardamalia, 1989; Burns et al., 1991; Gipps, 1994; Ramsden, 1988; Schmeck,

1988). Context can therefore be considered to influence the way students approach learning.

The way students perceive a task also influences the way they approach learning, and the tasks presented to them. Their perceptions of the tasks are often different from both their peers, and the teacher. Ames (1992) pointed out that “students’ perceptions of tasks and activities not only influence how they approach learning: these perceptions also have important consequences for how they use available time” (p. 263). In addition to this, there is likely to be variation in the way students understand the concepts and principles presented by the teacher or by the author of a textbook (Marton, 1981). In a similar way, it has also been shown that when presented with the same activity, such as hearing a story, learners have different ways of recalling and understanding the story. Pramling, Asplund Carlsson, and Klerfelt (1993) described their study of ninety-six 6-year-old children, who were read a story and were interviewed about what they remembered. Some children focussed on recall while others focussed on understanding. The point being that learning involves individual interpretations both on the nature of learning per se, and on the objective of the actual task. As Nuthall (1999) identified in a study with years 7 and 8 learners, there was remarkable variation in “how” and “what” they learned, and even when they were “engaged in virtually identical activities, they learned different things in different ways” (p. 305).

Woods (1986, 1990) identified a marked difference between teachers’ and school pupils’ perceptions of work, which necessitated a high level of negotiation in teacher-pupil interactions. Consistent with this view, Ramsden (1988) observed that tertiary students “often react to educational situations differently from the ways teachers or experimenters predict. This is because they react to the requirements *they* perceive, not always the ones we define” (p. 24). The following section looks at the relationship between context and learning, and identifies the impact of different settings on student learning.

### **2.3 Learning and context**

There have been numerous studies that highlight the effects of context on student learning and development. It is argued that contextual features play an important role in determining an individual’s ability to accomplish tasks, and that the setting or context

can either facilitate or hinder an individual's performance (Boaler, 1993; Ceci & Roazzi, 1994; Lave, 1988, 1996; Rogoff, 1984, 1995; Wertsch, Minick, & Arns, 1984).

There is evidence that the setting or context for learning has a marked impact on both the way students learn, and their performance on an activity. Ceci and Roazzi (1994) illustrated this through one of Roazzi's earlier studies on Brazilian street-vendor children. These children were assessed on a number of Piagetian tasks in two contexts. One involved the street, which was an authentic context for the children while selling their wares, and the other a formalised testing situation on Piagetian tasks that corresponded to those asked within the vendor context. The children were more successful in their responses within the authentic context than the formalised, superficial setting. Ceci and Roazzi (1994) argued that "the context in which learning occurs has an enormous influence on cognition, by serving to instantiate specific knowledge structures, by activating content-specific strategies, and by influencing the subject's interpretation of the task itself" (p. 98). This is consistent with earlier research findings that identified that Piagetian stages (sensory motor, pre operational, concrete operational) are both content and context dependent (Donaldson, 1978; Marton, 1981; Pramling, 1983, 1990).

An example by Lave, Murtaugh, and de la Rocha (1984) illustrates this point further. Within their study of adult shoppers they observed "virtually error free arithmetic performance" by people when acting as shoppers but frequent errors in parallel problems in the formal testing situation (p. 83). A 98% correction rate was achieved by the shoppers for solving arithmetic problems within the supermarket setting as opposed to a 59% success rate with similar problems in an arithmetic test. In a similar way Boaler (1993) argued that the context in which mathematics takes place is a factor in determining both approach to the task and therefore the outcome generated from that approach.

Learning is therefore considered to be closely linked to the circumstances of its acquisition (Billett, 1996). Säljö and Wyndhamn (1993) completed a study that examined contextual issues by using the same problem in a mathematics and social studies class. The "problem" was working out postal rates for sending a letter, and the students were presented with both the problem and the postal rate table. Some students

were given it within the context of a mathematics class, while other students were presented it within the context of a social studies class. Säljö and Wyndhamn noted that the sense of the task as students see it, *influences* the way they approach the problem. When the problem was presented within a mathematics context, 57.4% interpreted it as a mathematical task and engaged in some kind of calculation. However, when the same task was presented in a social studies context, only 29.3% of the students used mathematics operations to arrive at an answer.

A study that illustrates this point further was undertaken by Miller and Gildea (1987, cited in Brown et al., 1989a, p. 32) who compared the way students learned words within a school setting (through the use of dictionary work), with the way in which they learned words as part of everyday conversation. Their study found that students' ability to learn words within authentic contexts, that is, conversations, far exceeded the ability to learn words through contrived contexts such as reading dictionary definitions.

Matusov, Bell, and Rogoff (1998) studied collaborative problem solving with young children (9–11 year olds) in out-of-school contexts. The students were from two different schools – one where collaboration was encouraged and part of the school culture, while the other school was based on a traditional individual learner model where there was minimal emphasis on collaboration. The researchers involved the children working in dyads, with each pair consisting of students from the same school – either the collaborative school or the traditional school. One child from each dyad was given a task to teach the other child. Results showed that there were differences in how these children interacted with each other. The children from the collaborative school used strategies such as collaboration, consensus decision making and building on each other's ideas to achieve their goals. However, these strategies were not observed in the children from the traditional school, who employed more didactic approaches with their peers. This study suggests that the school environment and structures, impact on how children work with each other in out-of-school settings.

School learning is different from learning through everyday activities (Lave, 1988). In fact it has been argued that the way we learn in everyday settings is quite removed from the type of learning encouraged in school settings (Gardner, 1991; Lave, 1988; Rogoff & Lave, 1984), which is influenced by factors such as student numbers, curriculum requirements and societal expectations (Harris, 1994). A school setting has been

described as “a highly controlled environment structured around the management of the student population” (Harris, 1994, p. 59). The type of learning encouraged in school settings is explored in the following section.

## 2.4 School learning

Säljö and Wyndhamn (1993) argued that schools “provide external conditions or learning activities that differ from those that exist when these activities are embedded in the routines of activities in other social settings” (p. 328). Learning within school systems and out-of-school settings is structured differently, which impacts on the learner’s view on the *why* and *how* of learning (Marton & Booth, 1996, 1997). Learning at school involves cultural practices that “are institutionalized with traditions that are somewhat set and predictable, normative, and structural” (Matusov et al., 1998, p. 4).

Matusov et al. (1998) outlined the predominant classroom discourse in many American schools. These included:

1. A prohibition against students informally helping other students or even speaking with each other without teacher permission (often considered cheating);
2. The format of “quizzing” sequences in which the teachers asks a known-answer question, a student responds with a simple answer, and the teacher evaluates the correctness of the answer; and
3. The use of directive guidance in which teachers ask children to produce actions without explaining their meaning or providing a rationale for the requests. (p. 4).

Foucault (1977) maintained schools are institutions set up to formalise the process of learning and cultural reproduction, and Moll and Whitmore (1993) argued schools provide rote-like and intellectually limiting instruction. Furthermore, as Matusov et al. (1998) argued, schools in general provide contexts where structure, rules and systematised activity constitute learning.

However, as Garrison (1997) pointed out, even within a school situation the activities of teaching and learning are not predictable because the process of teaching is itself under constant transformation.

The context of teaching is always vague, inexact, and changing. The classroom is not the same in the fall as it is in the spring, or in the morning as it is in the afternoon. Students’ and teachers’ moods change throughout the day. Students become and cease being discipline problems, but exactly when it is sometimes

difficult to say. The effect of our teaching cannot be determined. We may have taught well, but the results will not reveal themselves until next year in Mr. Robb's class. Above all, students grow. If they did not, then there would be no reason to teach (Garrison, 1997, p. 5).

School learning has been described as involving pupils in repetition and “surface mental attention” (Woods, 1990, p. 174), and Bruner (1973) observed:

By school age, children have come to expect quite arbitrary and, from their point of view, meaningless demands to be made upon them by adults – the results, most likely, of the fact that adults often fail to recognise the task of conversion necessary to give their questions some intrinsic significance for the child (p. 62).

It is of great concern, that 23 years later, Berry and Sahlberg (1996) made similar claims. In a study that investigated students' views of learning, Berry and Sahlberg (1996) concluded that students view transmission of information as the primary function of school, and in the preliminary study that preceded the present study, students viewed assessment as measuring that transmission (Bourke, 1996).

From an early age, children are forming beliefs, conceptions and ideas about school and about learning. Lampert, Rittenhouse, and Crumbaugh (1996) stated that “all students have beliefs about what to do in school in order to learn. These beliefs – their ‘folk learning theories’ – are an expression of what our culture believes about school knowledge and how it is acquired” (p. 731). As Gardner (1991) noted somewhat cynically, it does not take long for the child to realise school is about the acquisition of knowledge and skills, and about determining whether she or he has the ability to attain these skills or not.

The young child is already developing incipient theories of himself [sic] as an agent in the realms of learning and thinking. He forgets things, to his annoyance; he remembers other things easily; if he practices an activity, he expects to get better at it, although he considers other activities ‘just too hard’ for him. Often included in his theory is a perception of how learning occurs: You go to school, a smart person tells you something, and you are expected to learn it and remember it, and if you don't, you are stupid. *Rarely is there any conception of learning as a long process of experimentation, reflection, and self improvement; rather, learning depends upon having certain abilities or, more broadly, having a good mind* (Gardner, 1991, p. 94). [emphasis added]

The way students approach and engage in a learning activity within a school setting is influenced by the messages portrayed about learning through the school culture and system. If school activity exists in a culture of its own (Brown et al., 1989a; Lave, 1988), and recognising that there are many aspects of that culture (Alton-Lee &

Nuthall, 1992), then teachers need to recognise this culture to facilitate student learning. One aspect of the school culture is the role peers play in the learning process.

#### **2.4.1 The role of peers in the learning process**

Within a school setting, students learn alongside their peers which creates a unique student culture. The positive effect of peers on the learning process is enhanced when these peers are also friends (Berndt & Keefe, 1992; Zajac & Hartup, 1997). Vygotsky's notion of "another" in the mediation of learning is important, but the *quality* of the relationship the child has with the social agent makes a difference (St. George & Cullen, 1999; Zajac & Hartup, 1997). As Cullingford (1997) observed "partnerships are as important in the classroom as in the playground" (p. 55). In one study that examined the effects of children working on learning tasks with friends as compared with non-friends, Zajac and Hartup (1997) concluded that when working cooperatively, friends worked better together because cooperation and reciprocity favours collaborative learning situations.

The benefits of friends working together include the following: children know their friends better and therefore the suggestions, explanations and comments made by friends are more likely to be accurate; friends generally have a strong commitment to each other that facilitates learning; friends feel more secure with each other and the affective climate is more favourable for task exploration and problem solving; and children manage conflicts more effectively with their friends (Cullingford, 1997; Zajac & Hartup, 1997).

However, as Berndt and Keefe (1992) point out, friendship is not always based on positive interaction but can also result in negative features such as rivalry, conflict and argument. Through arguments, young children and adolescents learn to understand their own position better, and to self-assess or develop an awareness of their own beliefs and understanding of the situation. This has the potential to enhance their learning.

Peers can influence the way students *approach* a learning task (Filer, 1997; Nuthall, 1997). For example, when Filer (1997) examined the way children gave their "news" in class, she reported that students experienced a tension between either giving "deviant

comedy” to please their peers and avoid being identified by their peers as “boring”, or providing a news story that was more acceptable and would “please” the teacher.

Students develop their own culture within the classroom setting and within a school. This is often quite distinct from any formalised “school culture”, and is a means to establish identity and status between peers (Woods, 1990), and a means to reject adult culture (Metcalf & Hunt, 1974). This is achieved in various ways, which includes the use of nicknames, humour and telling of jokes. As Woods (1990) noted:

To be member of a group, a child must have a nickname, usually ‘short and snappy’ and ‘playfully affectionate’, and their use helps to cement the bonds of the group. Those with no nicknames are social outcasts. Those with nasty nicknames, like some of the teachers, are members of opposing groups (p. 197).

## **2.5 Out-of-school learning**

Learning does not take place exclusively within a school setting. Moll and Greenberg (1990) argued that every household is “an educational setting in which the major function is to transmit knowledge that enhances the survival of its dependents” (p. 320). Resnick (1987) differentiated between school and out-of-school learning by the focus of the learning. She stated that “schooling focuses on the individual’s performance, whereas out-of-school mental work is often socially shared” (p. 84).

Sutton and Tomley (1980) questioned how the knowledge gained from out-of-school experiences can be transformed profitably for both learner and teacher into a school context. They asked the following questions:

That school knowledge can enlighten out-of-school experiences, and that the latter can broaden the former, we ourselves no longer question. But what can we do to make it more likely that there is this reciprocity? How can we ensure that it is manifest to the learners themselves, and to more teachers? (p. 151).

Resnick (1987) cautioned against making assumptions that being an effective learner in a school context will equip children with essential learning skills in out-of-school contexts. This is because the type of skills, knowledge and attitudes encouraged in a typical school situation, reflect the nature of schooling and what is valued in that school.

As long as school focuses mainly on individual forms of competence, on tool-free performance, and on decontextualised skills, educating people to be good learners in school settings alone may not be sufficient to help them become strong out-of-school learners (Resnick, 1987, p. 86).

Some studies have examined whether school learning is used by students out-of-school. For example, Jarman and McAleese (1996) surveyed 116 students (15–16 year olds) on their perceptions of science, and how they used it in their everyday lives. The researchers used the following question as their lead, “Can you tell me about an occasion when you used the science you learnt in your everyday life?” (Jarman & McAleese, 1996, p. 3). The majority of the students interviewed attributed the science they learnt in schools as being accessible and useable in contexts beyond the classroom. This has been discussed in relation to science (Jarman & McAleese, 1996), and biology (Sutton & Tomley, 1980).

Sutton and Tomley (1980) have argued for the recognition of out-of-school knowledge. They noted that it should not be isolated from school learning, and state that “teaching for action beyond school seems an exciting possibility” (p. 157). This is particularly important as some student “voices” are not heard in a school context (Johnston & Nicholls, 1995; Jones, 1991). In a New Zealand study of female secondary school students, Jones (1991) observed that the way the girls talked about school and their role within school were quite different from their lives and roles outside school. Jones noted that the girls viewed out-of-school experiences as irrelevant to school, and that the two contexts were quite separate. Johnston and Nicholls (1995) later drew on this work in relation to students’ voices because they believed that students have many “voices” some of which are silenced in a school setting.

The way parents teach their children contributes to out-of-school learning. The home culture can be a factor in determining how a subject, such as science, is taught to children in the home by parents and caregivers (Solomon, 1994). The concept of “home culture” is in part influenced by parental conceptualisations of science and education.

In another study, Chavajay and Rogoff (1999) explored the cultural variation of how parents or caregivers and 14–20 month old toddlers in a Guatemalan Mayan community and a European community in the United States manage their attention when there are various activities going on around them. While Chavajay and Rogoff (1999) were examining specifically how the adults and toddlers attend to a variety of tasks and activities around them, they distinguished between simultaneous attention and alternating attention. Simultaneous attention involves the child or adult being able to respond to a number of different things at once, whereas alternating attention involves

changing the attention or becoming distracted and attending to only one thing at a time. Chavajay and Rogoff found that Mayan parents and their toddlers, were more likely to attend simultaneously to competing events, whereas the European families tended to alternate their attention between competing events. One of the implications of their findings, was that the differences in how people respond to a number of tasks is related to the community in which they are raised (Chavajay & Rogoff, 1999).

## **2.6 Assessment and learning**

Learning is undoubtedly a phenomenon embedded in the cultural, historical and social world of the learner and the community. While learning is a natural activity that occurs throughout our lives, it is a phenomenon that can be experienced differently for the same learner depending on context. As a concept, learning is understood individually and differently through a cultural and socially mediated process (Chavajay & Rogoff, 1999; Rogoff, 1998; Rogoff et al., 1995; Rogoff, Matusov, & White, 1996; Rogoff et al., 1993). Therefore, although there is an individual and cultural explanation of what learning is, there is not a single unitary definition to describe when, how or why learning takes place. For example, a formal school setting and an out-of school setting can provide different experiences for the same learner. However, although both experiences may be described as “learning”, there is only one form of learning that is measured and rewarded through the school system. Learning that can be readily identified, measured and graded and therefore differentiate students, is valued more highly within educational settings. There is also empirical evidence to suggest that “most students try to deliver what they predict the teachers will reward” (Ramsden, 1988, p. 21). Therefore the role of assessment needs to be considered in any discussion associated with learning.

The three broad functions of assessment practice as outlined by Black (1993) are: “(a) direct assistance to learning; (b) the certification of individual students; and (c) public accountability of institutions and the teachers within them” (Black, 1993, p. 50). These functions influence teacher assessments in the classroom, which in turn influence student learning. Nisbet (1993, 1994) claimed that tensions exist between assessment for learning and assessment for accountability.

As Crooks outlined in his seminal review of classroom evaluation practices, assessment in school has a profound effect on student learning (Crooks, 1988). While Crooks argued that the assessment of student learning is critical to student learning and development, he cautioned that some assessment practices encourage students to approach learning in a superficial way. In a similar manner, Entwistle and Ramsden (1983) argued strongly that assessment processes often have the “unintended consequence of inhibiting rather than facilitating learning” (p. 116). When assessment practices inhibit or suppress student learning, the very nature of assessment becomes part of a culture of oppression. These systematic learning and assessment systems can become *dividing practices* (Foucault, 1977), because they essentially create a line between winners and losers (Hanson, 1993).

It has been acknowledged that the use of tests can have a demotivating effect on learners where students do not succeed (Crooks, 1988; Gipps, 1994; Pollard et al., 1994), and when students believe there is only one “correct” answer (Eisner, 1994).

The ease with which control processes, such as tests and examinations can be systematised assists with the ongoing legitimisation of defining learning as static and individual. However, in addition to this, the results from standardised and classroom tests define the learner. As Hanson (1993) cautioned:

In a very real sense, tests have invented all of us. They play an important role in determining what opportunities are offered to or withheld from us, they mould the expectations and evaluations that others form of us, and they heavily influence our assessments of our own abilities and worth (p. 4).

While formative and summative assessment methods are both used in classrooms, they hold different functions and necessitate different relationships with the teacher (Black, 1993, 1998; Gipps, 1994). Summative assessment occurs at the end of an activity, module or term to evaluate whether learning had occurred and is often associated with high-stakes testing, whereas formative assessment is ongoing and assists with decisions about the teaching programme to facilitate student learning. Gipps (1994) referred to “trickle up testing” (p. 13) in her reference to formative assessment that uses a wide range of activities to collect information about the learner and his or her learning in conjunction with the learner.

In Aotearoa/New Zealand, however, while both formative and summative assessments occur, it is the assessment data from summative assessments that receive the attention of the Education Review Office (ERO). It has been documented that many New Zealand schools' assessment practices are influenced by ERO (Bourke, Poskitt, & McAlpine, 1996; Hill, 1999; Thrupp & Smith, 1999). As Thrupp and Smith (1999) noted, "ERO's assessment requirements mean teacher practices are becoming often shaped by the touchstone 'This will be good for ERO!'" (Thrupp & Smith, 1999, p. 195). Therefore, within the New Zealand context, the constraints on teachers and schools (perceived or otherwise) placed on them by the Ministry of Education and ERO regarding assessment policy and procedures, influence the practice of teachers. Hence, with summative assessment it is often the evaluator (teacher) who is invariably more motivated in the assessment process than the learner.

These assessment practices encourage the student towards both a surface and atomistic approach to learning (Crooks, 1988; Ramsden, 1988). In New Zealand schools, the threat of ERO visits can inhibit teacher creativity in assessment (Bourke & Willis, 1998; Hill, 1999; Lovegrove, 1997). In an editorial in the *New Zealand Principal*, Lovegrove (1997) pointed out:

The learning process involves pushing the limits, extending the boundaries. Teachers need to be encouraged, *urged*, to take risks, to go beyond the safe, conservative practices of the norm, the status quo. The saddest effect of the work and style of ERO is that risk-taking has almost disappeared (p. 3).

Educational reform within a number of countries including France, Germany, the Netherlands, Spain, Sweden, Britain, the United States of America and New Zealand has focussed on assessment as a cornerstone for change (Holloway, 2000; Nisbet, 1994). In the early 1990s the rationale to "raise National standards" underpinned much of the reform, but these reforms took two directions (Nisbet 1993, 1994).

Nisbet (1994) identified these directions as assessment for accountability, and assessment for enhancing learning.

National testing is a new political imperative in what was formerly seen as primarily a professional and pedagogical concern: the use of assessment for monitoring and accountability in national systems, especially in terms of nationwide testing of students' achievement in basic skills or core subjects.

The other strategy, new approaches to assessment, represents a paradigm shift towards integrating assessment with learning: continuous assessment using students' regular work rather than formal examinations or standardised tests,

records of achievement, school-based assessment, self-assessment by students, using the results formatively as feedback and diagnostically for guidance to reinforce learning, to help define objectives and to encourage learners to take greater responsibility for their own learning (Nisbet, 1994, p. 165).

While these tensions exist, there is a responsibility for educators to develop assessment strategies that can meet both aims (Hall, 1994; Irving, 1993). Even though Hall (1994) argued that aggregation of student data is “a positive step in reconciling the dichotomy between the accountability and formative dimensions of assessment” (p. 31), the way teachers assess students is a critical factor in determining whether assessment facilitates learning. Both assessment policy and teacher choice of assessment practices are political choices that can effectively isolate some learners from the learning process (Broadfoot, 1996; Shor, 1992). As Shor (1992) noted, we demonstrate this in the choice of whether to use “student centred, multi-cultural, and portfolio assessments, or to use teacher centred tests or standardised exams in which women and minorities have traditionally scored lower than men and whites” (p. 15).

The rationale for making decisions about assessment practices is important because such decisions ultimately affect student learning. More recently, there has also been discussion in both Britain and the United States to link the results of student assessments to performance-based pay for the educators (Gleason, 2000). Bruner (1996) expressed concern that the focus on raising standards and increasing performance has been at the expense of looking more carefully at the core of the classroom business: that is, learning and teaching. While lately there has been a resurgence of efforts to look at alternative forms of assessment in the way of rubrics (Andrade, 2000), and learning records (Barr, 2000), there are also examples where alternative forms of assessment are introduced into schools to increase student test grades (Benson, 2000; Cawelti, 2000).

Caution has already been made about the inherent danger of choosing assessment practices such as testing (Gipps, 1994; Nicholls & Hazzard, 1993). As Nicholls and Hazzard (1993) pointed out, tests:

...cannot help teachers discern what a child understands about addition of two digit numbers, the nature of sentences, the source of rain, how to tell how long it will be until lunchtime, or any of the myriad topics that will come up in the next few days...Children's knowledge changes rapidly...the collation on paper of so much detailed information by the teacher would leave little time and energy for the process of education. This psychometric enterprise has nothing to do with the

delicate, idiosyncratic, evolving, forward looking, creative process of teaching (p. 42).

Marzano, Pickering, and McTighe (1993) recognised the need to change assessment practices “so they mirror the learning process” (p. 11). They believed enough evidence has been collected to acknowledge that assessment and learning are inextricably linked. However, the need to adapt and change assessment practices presupposes that the learning process is clearly understood by parents, students and administrators. Some researchers argue that it is not just the assessment practices that need to be reviewed, but consideration should be given to the way in which teachers *conduct* these assessments and the socio-cultural environment in which these assessments take place (Filer, 1993; Filer & Pollard, 1996; Willis, 1994).

The preliminary study that preceded the present study indicated that students’ conceptions of learning do not reflect a constructivist view of *school-based* learning, nor do they see assessment practices reflect a holistic approach to learning (Bourke, 1996; see Appendix A). The younger students viewed assessment and learning within a behavioural paradigm, as did the older students who also believed assessment practices were a social engineering process to sift out the winners from the losers. While some students (9 years, 12 years, 17 years) reported a move towards more authentic assessment practices in schools including self-assessment, their views reflected a scepticism and recognition of conflicting messages about learning, and about their role in the process (Bourke, 1996). These findings are consistent with the work of Harris (1994) who, through a British study, identified that schools were actively encouraging student self-assessment as a means to involve them more actively in the learning process. However, Harris (1994) noted, that even with these deliberate attempts to include the student, “the student voice remains peripheral – they are essentially observers rather than participants in their own development” (p. 63).

While Nicholls and Hazzard (1993) identified concerns regarding the evaluation of learning, assessment can be a constructive and positive process when assessment practices are more closely linked to learning. It is critically important therefore, to acknowledge the learner when researching either learning or assessment, and in the process of adopting alternative practices. Nisbet (1994) stated that:

We should be more concerned with the interests of the group with least power, the learners. In designing the future pattern of assessment, the prime

consideration should be the effect on learning, and decisions about assessment should be made as close as possible to the learners (p. 168).

### **2.6.1 Self-Assessment**

Self-assessment is part of an international move in education towards authentic assessment strategies, and is usually identified as a formative assessment process (Boekaerts, 1991; Broadfoot, Murphy, & Torrance, 1990; Race, 1991; Stipek, Recchia, & McClintic, 1992; Zessoules & Gardner, 1991). Along with profiling, records of achievements, portfolios, and projects, self-assessment contributes to the philosophy of including the learner in the assessment and learning processes.

The aim of incorporating self-assessment into the evaluation of student learning is to encourage independent learners, and to develop metacognitive strategies (Boekaerts, 1991; Pramling, 1996a; Stobart & Gipps, 1997). Stipek, Recchia, and McClintic (1992) believed that self-assessment is “undoubtedly one of the most important milestones in children’s development” (p. 1). Through exercises in self-assessment, students find meaning and relevance in their learning and therefore their engagement and motivation are likely to increase (Kusnic & Finley, 1993).

Race (1991) identified two important aspects to the self-assessment process. These include involving learners in identifying standards and criteria, or both to apply to their work, and allowing learners to make judgements about the extent to which they have met these standards and criteria (Race, 1991). Boekaerts (1991) argued that perceptions of the self and perceptions of the environment are integral to the self-assessment process, which is a critical component of independent learning. She stated that “self-assessment is a form of appraisal that involves a comparison between one’s behavioural outcomes and an internal or external standard” (Boekaerts, 1991, p. 11). The assumption is made that the student is already aware of, and recognises an internal or external standard. Boekaerts (1991) believed that teachers assist students’ use of an external standard by providing clear criteria of what constitutes success, such as a checklist, to assist the students to measure their performance against the established criteria. In contrast, an internal standard of performance is more a personal judgement and is “more or less conscious, more or less habitual, more or less deliberate” (Boekaerts 1991, p. 12).

In some cases, the teachers can facilitate the process for learners to understand and use their knowledge by making explicit the criteria for assessment in relation to performance goals (Race, 1991; Simmons, 1994). However, through providing an external source of measure, Boekaerts (1991) warned that the students might be hindered in identifying their progress because they view only the absolute “correct” or “incorrect” aspects of the assessment. This may be reinforced by the evaluation of others. Gipps and Tunstall (1998) stated that “children’s self-evaluations are to a large extent a reflection of significant others’ evaluations, i.e., parents, teachers and peers” (p. 150).

Self-assessment strategies have been used at early childhood level (Pramling, 1996a; Stipek, Recchia, & McClintic, 1992), primary school level (Forster & Masters, 1996a, 1996b, 1996c; Herman, Aschbacher, & Winters, 1992; Masters & Forster, 1996; Stobart & Gipps, 1997); secondary school level (Burns et al., 1991); and tertiary level (Boud & Griffin, 1987; Fraser, 1997; Gibbs, 1991; Moore & Hunter, 1993; Race, 1991). Self-assessment techniques have also been employed within special education in some schools in Britain where the “involvement of pupils with special educational needs in the assessment and management of their own learning needs is an area of development which has seen considerable progress in a number of innovative schools” (Rose, McNamara, & O’Neil, 1996, p. 166).

Stipek, Recchia, and McClintic (1992) explored young children’s (1–5 year olds) emotional self-evaluations and reactions in achievement or outcome based contexts. In addition to this, they also looked at whether adult evaluations through the form of praise impacted on the way the child self-assessed. The conclusion that Stipek et al. (1992) drew was that while adult feedback impacted on learners’ assessments of their self-worth (as linked to notions of rejection and acceptance), it had less impact on the children’s self-assessment of their performance level.

### **2.6.2 Benefits and implications of self-assessment on teaching and learning**

Self-assessment is viewed as a central element of a learning activity (Kozulin & Presseisen, 1995). Research into self-assessment shows that learners become better able to self-regulate further learning, develop a greater sense of control over their learning and are more likely to accept responsibility for their learning (Barnes, 1997; Eaton &

Pougiales, 1993; van Kraayenoord & Paris, 1997), develop reflective thinking skills (Kusnic & Finley, 1993), and apply more metacognitive strategies (Pramling, 1996a). Intentional learning can occur if the students know what they *do not know* and it is through self-assessment that they can establish the boundary between knowing and not knowing (Bereiter & Scardamalia, 1996).

Self-assessment practices have been attributed to increasing student motivation for learning (Broadfoot, 1979; Ralph, 1995). Broadfoot (1979) examined how self-assessment could be a means both to increase pupil motivation, and to facilitate better communication in the classroom. For example, Broadfoot (1979) argued that self-assessment can:

- Encourage pupil motivation by improving communication in the classroom, thereby counteracting to some extent the impersonality of the school.
- Help pupils to become more personally involved in and to take more responsibility for that learning.
- Implicitly raise pupil status because the students' opinions are valued (p. 8).

The teacher-pupil relationship changes when self-assessment is implemented purposefully. The traditional role of the teacher is challenged, because the power of the teacher in the learning and assessment processes is shared with the student. The assessment process becomes demystified as criteria for assessment is made explicit. Therefore, the teacher needs to be confident in releasing some of the traditional power and have good classroom management (Rose et al., 1996).

While there are documented cases of successful self-assessment practices occurring within classroom assessments at tertiary level (Angelo, 1991; Angelo & Cross, 1993), other educators at tertiary level have outlined a rather less convincing argument for self-assessment, where it was argued that as a result of the increase in the number of students attending higher education, without the associated increase in teaching staff, self-assessment was a means to reduce workload (Gentle, 1991; Race, 1991). When implementing self-assessment at the tertiary level, Moore and Hunter (1993) suggested that not only the teacher-student role needs to be examined, but the institution itself, requires change. They argued that "student self-evaluation...is situated in a larger context of educational reform, emphasizing 'improving' as much if not more than 'proving'" (p. 79). In summary, the reasons why educators promote the use of self-assessment in their educational programmes are outlined in Figure 2.2.

<b>BENEFITS OF SELF-ASSESSMENT</b>	<b>TYPE OF STUDENTS</b>	<b>SOURCE</b>
Decision making	Special education	Rose, McNamara, & O'Neil (1996)
Accept Responsibility	Special education	Rose et al. (1996)
Active participant in learning process	Pre-service teachers Years 4,5,6 students 10-year-old students	Ralph (1995) van Kraayenoord & Paris (1997) Barnes (1997)
Student part of the change process	Pre-service teachers Years 4,5,6 students	Ralph (1995) van Kraayenoord & Paris (1997)
Develops independent learners	All students	Stobart & Gipps (1997)
Develops the intentional learner	6 <sup>th</sup> grade students	Bereiter & Scardamalia (1989, 1996)
Students gain a sense of control over their own learning	Years 4,5,6 students 10-year-old students High school students	van Kraayenoord & Paris (1997) Barnes (1997) Simmons (1994)
Provides triangulation of data	Pre-service teachers	Ralph (1995)
Negotiation skills	Special education	Rose et al. (1996)
Develops self-regulation of future learning	Years 4,5,6 students College graduates	van Kraayenoord & Paris (1997) Eaton & Pougiales (1993) Stobart & Gipps (1997) Gipps (1994)
Develops self-reflective learner	Pre-service teachers Years 4,5,6 students 10-year-old students	Ralph (1995) van Kraayenoord & Paris (1997) Barnes (1997)
Self-esteem, teamwork and community building	Tertiary students	Moore & Hunter (1993)
Skills for becoming life-long learners	Tertiary students	Moore & Hunter (1993)
Motivating for student	Pre-service teachers Early childhood	Ralph (1995) Stipek, Recchia, & McClintic (1992) Gipps (1994)
Developing criteria	Tertiary students	Moore & Hunter (1993)
Negotiation skills	Special education	Rose et al. (1996)

Figure 2.2. Benefits gained from using self-assessment techniques

## 2.7 Students' roles in research about learning and assessment

Studying pupils' views of classroom life is a useful and valid research activity (Dahl, 1995; Delamont, 1992; Paley, 1981, 1992, 1999), and educational researchers are increasingly interested in listening to the student's perspective (Johnston & Nicolls, 1995; Lincoln, 1995; Pollard, 1996, 1997; Pramling, 1996a; Thiessen, 1997). Examples of work utilising learners' viewpoints in both student learning and research about student learning have been demonstrated by a number of educators and researchers (Alton-Lee, Densem, & Nuthall, 1991; Dahl, 1995; Gipps & Tunstall, 1998; Jones, 1991; Paley, 1992, 1999; Pollard, 1997; Smith, 1996). Smith and Taylor (2000) argued that, through seeking, understanding and using children's perspectives of their experiences, improved conditions for their living and learning can be facilitated. Cullen (1992) argued for increased teacher-student dialogue to promote students' awareness of their learning, and stated that "talking with children about their learning is one approach which teachers can use to promote strategic learning" (p. 120).

Gipps and Tunstall (1998) stated that "the pupil's voice has come to be seen as crucially important to understanding the complexities of learning in school. Naturalistic research approaches which are grounded in pupils' accounts are needed to probe this" (p. 149). In addition to including student voice, the students' understandings of their own role in the learning process has become an area of study in Britain (Gipps & Tunstall, 1998; Pollard, 1997). Paley (1979, 1999) also argued that educators have much to learn from children, but while there is a strong call for involving the student voice in research and in learning, students are often left out of the dialogue (Landsdown, 1994; Oldfather, 1995; Smith, 1998).

While much research has been completed *about* children, it has been argued that there has been little attempt to include children's voice in the research process (Smith, 1996, 1998). Oakley (1994) has drawn a parallel between the lack of visibility of women's experiences in social science research 20 years ago, and the now invisible and excluded group – children. As Smith (1996) has argued "even where people claim to be working on children's behalf there is little attempt to understand their ways of seeing the world" (p. 10). More recently within New Zealand, however, there are increasing attempts to seek children's views in social and educational research (Carr, 2000; Jamison & Gilbert, 2000; Taylor, Gollop, & Smith, 2000; Taylor & Smith, 2000).

Some studies have explored students' experiences of learning in early childhood settings (Pramling, 1983, 1988, 1990, 1996a; St. George & Cullen, 1999), school settings (Burns, 1994; Nuthall, 1996a, 1996b, 1997; Nuthall & Alton-Lee, 1997; Pollard, 1996), and with tertiary level students (Entwistle, 1987; Entwistle & Ramsden, 1983; Marton, Dall'Alba, & Beaty, 1993; Prosser, 1994b; Ramsden, 1988; Säljö, 1979). However, there have been few studies undertaken involving school-aged students' *conceptions of learning or self-assessment*. One study, undertaken by Berry and Sahlberg (1996), looked at pupils' ideas on learning. In their study, Berry and Sahlberg involved 14- and 15-year-old students in an open-ended writing task, with the question "what is learning?" While they came up with interesting conclusions, such as that students viewed classroom learning as involving the reproduction of information, there were limitations to the study. The students were given the question in test like conditions and students were not interviewed, nor were they asked about their views on learning outside school. In other research, Bereiter and Scardamalia (1989) completed a number of studies that identified Grade 6 students' view of knowledge. Their research highlights the distinction students make between procedural knowledge (knowing how), and declarative knowledge (knowing that). However, their work did not look specifically at how students conceptualised learning per se.

The use of phenomenography in research with young learners allows the researcher to come to a closer understanding of a variety of phenomena from the child's perspective. There have been attempts by phenomenographic researchers to explore children's conceptions in a number of areas. For example, learning (Doverborg & Pramling, 1993; Marton, Dall'Alba, & Beaty, 1993; Pramling, 1988; Säljö, 1979); conceptions of understanding (Burns, 1994; Burns et al., 1991; Helmstad, 1999; Helmstad & Marton, 1992); and conceptions of a tale (Pramling et al., 1993).

## **2.8 Summary**

Student learning is a complex phenomenon. The way we conceptualise learning has a powerful impact on both approaches to learning and outcome of learning. Learning is a social and cultural process which occurs within a community of practice. While formalised learning occurs predominantly in a school setting, learning occurs in diverse everyday settings. It is the way the setting impacts on the learner, that determines his or her response to the learning activity (Lave, 1996; Matusov, Bell, & Rogoff, 1998).

Therefore, within this framework, it is necessary to acknowledge that context plays a key role in the way students conceptualise and approach learning and self-assessment.

Current research on learning places an emphasis on the student's role in the learning process (Lave, 1996; Marton & Booth, 1997; Rogoff, 1998). As noted earlier, Pramling (1996a) has argued that to understand the learning process better it is imperative to understand students' conceptions of learning and explore how these students become aware of the nature and purpose of what they are learning. Furthermore, she also believed it is important to assist children develop an understanding of their own learning, in order to improve their learning.

Research that has explored students' conceptualisation of learning shows that the way students view learning affects the way they approach the learning activity (Biggs, 1979; Marton, 1981; Säljö & Wyndhamn, 1993), and the way they view assessment also affects the way they approach learning (Burns, 1994; Ramsden, 1988).

New Zealand schools have institutionalised assessment programmes that impact on how students view learning, and therefore approach their learning tasks (Burns, 1994). Disconcertingly, Burns (1994) noted that in order to meet assessment requirements in the schools, students "often gave away achieving their 'best understanding'" (p. 481). In contrast, in out-of-school learning situations where learning is not "measured" in the same way, students approach learning in a different way (Boaler, 1993; Ceci & Roazzi, 1994; Lave, 1988, 1996; Rogoff, 1984, 1995). In out-of-school contexts, learning occurs in authentic and natural settings where it has been shown that students often perform tasks better than when undertaking similar tasks in a school setting (Ceci & Roazzi, 1994; Donaldson, 1978; Pramling, 1983; Säljö & Wyndhamn, 1993). Interestingly, this learning is not readily acknowledged in a school setting, yet students approach learning in school with this vast background of experience. To develop effective teaching and assessment systems in schools it is important, therefore, to explore how students conceptualise learning and self-assessment, and how the settings in which these occur contribute to the way students approach such tasks.

## 2.9 Research aim

It is clear that for children, school-based learning is only one facet of their learning experiences. Learning takes place in a multitude of settings apart from school, and the contexts in which that learning occurs provide unique experiences and opportunities. Given that the experiences of learning are as diverse as the contexts in which they occur, and that research has indicated learners achieve more understanding and increased skills in out-of-school settings than in school settings, the relationship between out-of-school learning and school learning needs further exploration.

The link between learning and assessment is an interesting one. At one level, assessment, particularly in the form of self-assessment, can facilitate student learning, while at another level, assessment has been shown to hinder learning and can be a demotivating experience for the student. What then, can be learned from the way learner's use self-assessment for their own learning in a range of settings, to develop more effective practices in school-based self-assessment systems?

While there has been research into children's learning at various age levels such as the early years (5–8 year olds) (Pramling 1983, 1988, 1990, 1996a; St. George & Cullen, 1999), over 12-year-olds (Berry & Sahlberg, 1996; Helmstad, 1999; Helmstad & Marton, 1992), and secondary school students (Burns, 1994; Nash, 1997), there has not been research into students' conceptions of learning or self-assessment at years 7 and 8 level (10.5–12.5 year olds). In New Zealand, years 7 and 8 students are in the final years of their primary schooling and are preparing to enter secondary school education. The majority of years 7 and 8 students attend either a full primary school (years 1–8), or an intermediate school (years 7 and 8). However in rural areas, some years 7 and 8 students attend an Area school (years 1–13). According to Ministry of Education (MoE) statistics, 49% of all years 7 and 8 students in New Zealand attend a designated intermediate school (MoE, personal communication, October 25, 2000).

Some research within New Zealand that has explored learning with students in years 7 and 8 within an intermediate school setting showed interesting results (Nuthall, 1996a, 1996b, 1997; Nuthall & Alton-Lee, 1997). While these studies highlighted the variation in the way students approached learning tasks within an integrated science and social studies unit, and explored the realities of the classroom experience, the studies did not

explore how students conceptualised learning or self-assessment, nor did they examine how students learned in out-of-school contexts. However, these studies highlighted the complexities of student learning, and debunked the notion that there is a direct link between teaching and learning. As Nuthall (1996b) identified, “it is the ability of students to make use of, and create, learning opportunities in classrooms that determines what they learn” (p. 35).

It is timely then to seek students’ views about learning and to use their experiences of school and out-of-school contexts to explore students’ conceptions of learning and self-assessment. In this way, through the research, these students can inform practice on strategies that facilitate intentional student learning.

## **2.10 Research questions**

This study sets out to explore students’ conceptions of learning and self-assessment, and then to examine these in relation to each other and in relation to different learning contexts. In the list below, the first two questions relate to students’ conceptions, the following two pertain to the context, and the final two pertain to the relationship between the conceptions of learning and self-assessment, and between the conceptions and context.

- *What are year 7 students’ conceptions of learning?*
- *What are year 7 students’ conceptions of self-assessment?*
- *What is the nature of the learning context within a school setting for years 7 and 8 students?*
- *What is the nature of some of the learning contexts within out-of-school learning settings for years 7 and 8 students?*
- *How are students’ conceptions of learning and self-assessment related?*
- *How are students’ conceptions of learning and self-assessment mediated by context?*

The study is conducted in two phases. During Phase One the orientation of the study is towards students’ experiences and conceptions of learning and self-assessment. This necessitates taking a second-order perspective using phenomenography, which describes learning and self-assessment from learners’ experiences, rather than attempting to describe and define learning and self-assessment per se. During Phase Two of the study, an ethnographic method is employed that primarily utilises observation and interview techniques to examine students’ experiences and conceptions

of learning and self-assessment in context. Phase Two takes a first-order perspective that complements the second-order perspective taken in Phase One (Marton & Booth, 1997). Data collected from both a first-order perspective and second-order perspective can be used together to gain a greater understanding and insight into the phenomena of learning and self-assessment.



## Chapter 3

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### Methodology: Theoretical Influences

*No single method can grasp the subtle variations in ongoing human experience....qualitative researchers deploy a wide range of interconnected interpretive methods, always seeking better ways to make more understandable the worlds of experience that have been studied (Denzin & Lincoln, 1994, p. 12).*

This study seeks to explore, on the one hand, students' conceptions of learning and self-assessment and, on the other hand, the context within which that learning takes place. Therefore two specific methods in two phases over a 2-year period were used. Denzin and Lincoln (1994) argued that qualitative researchers require multiple methods within their paradigms to appreciate fully the complexity of the phenomena under investigation. While both approaches use qualitative methods and are situated within an interpretivist paradigm, Phase One uses a phenomenographic method and Phase Two uses an ethnographic method. The rationale and implications for using these approaches will be explored in this chapter.

This chapter focuses on the methodology or theoretical framework underpinning the methods used in this study, while the following chapter looks specifically at the techniques and procedures applied in the two phases of the research. Harding (1987) differentiated between methodology and methods in her definition that "method refers to techniques for gathering empirical evidence; methodology is the theory of knowledge and the interpretative framework that guides a particular research project" (p. 2). As both phases of this study are qualitative, consideration will firstly be given to the essence of qualitative research, followed by an examination of phenomenography as a research approach, and then specifically phenomenographic research methods. Ethnography will then be examined, particularly in relation to the work of Rogoff (1995, 1996, 1997, 1998) that influenced the study, and then specifically the methods used to collect data during the second phase. A brief discussion on the ethical considerations that were integral to both phases of the research will conclude this chapter.

The choice of method, whether in teaching or research, is essentially a political undertaking (Gitlin, 1994) because, as Eisner (1991) argued, the researcher or teacher has an agenda or purpose when undertaking the research or teaching. The motivation behind the research or teaching is driven by the researcher's or teacher's intentions and interests, which in the former case are inherent in the type of research questions asked, the methods chosen and the techniques used for gathering data. Therefore, research is not value free. The present study is influenced by the researcher's personal experience as a teacher, educational psychologist, and teacher facilitator, and is driven by the belief that hearing, describing and understanding the learner's voice is paramount in all educational endeavours such as teaching, assessment and research which involve learners. By employing an interpretivist paradigm, a number of assumptions and beliefs also underpin the research. Within an interpretivist paradigm the researcher is looking for "understanding meaning, for grasping the actor's definition of a situation, for Verstehen" (Schwandt, 1994, p. 118). If both phases of this research are to represent the learner's viewpoint, and assist educators to facilitate student learning, it is necessary for both Phase One and Phase Two of the current research to employ methods within the interpretivist paradigm. In this way, the meaning attributed to learning and self-assessment by students, can be identified to generate further insight into what students think they are doing when they learn, and when they self-assess their own learning.

### **3.1 Paradigm influences**

A paradigm represents a way of viewing the world, and influences the research questions and methodological approach used. Guba and Lincoln (1994) suggested that both the research questions and methods are influenced by the researcher's paradigm, because it is "the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways" (p. 105). The researchers' paradigm impacts on the type of research questions formulated, the methodology underpinning the research, the type of methods chosen and even issues inherent within the research such as values, ethics, criteria for rigour, trustworthiness and research-related objectives. The researchers' experiences are interwoven in the research paradigm because their ontological and epistemological beliefs are tied into the particular research paradigm. Therefore, within this present study, an interpretivist paradigm is used to meet this researcher's objectives to

understand the phenomena of learning and self-assessment from the student's viewpoint.

The interpretivist approach employed in this study is symbolic interactionism, which is based on the fundamental belief that in order to understand the world around us, we need to explain how people interpret their experiences. Therefore, central to a study on human experience are the perspectives, viewpoints, and meanings people place on symbols, objects and events. The ontological assumptions of such an approach are that there are multiple realities and that the epistemology underlying this is that we come to know these realities through the knower and the subject creating understandings. As a researcher, it becomes possible to understand these realities through using a methodology that takes a second-order perspective (phenomenography) and complementing this with a first-order perspective (through ethnography). Ultimately however, this present study represents the meaning that the researcher has constructed as a result of the interactions with the students and their learning communities. It is related to the meaning that the researcher attributes to these events, and therefore becomes eventually a first-order account.

### 3.1.1 Symbolic interactionism

Both phases of this research are undertaken within a symbolic interactionist approach, as the researcher is interested in the impact of the *meanings* of events rather than the impact of those particular events on the person. This requires a shift in thinking from viewing external factors such as attitudes, stimuli, social position, social status and so on, as influencing a person's behaviour, to one of understanding the meaning that the person attributes to these factors which influence behaviour (Bogdan & Biklen, 1998).

Blumer (1969) first coined the term *symbolic interactionism* as a research approach in the study of human life in 1937. Symbolic interaction is sympathetic to the phenomenological perspective of understanding the meaning people attribute to events and situations (Bogdan & Biklen, 1998). The concept is built around three premises that are described by Blumer (1969) as:

- Human beings act toward things on the basis of the meanings that the things have for them.
- The meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows.

- These meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he [sic] encounters (Blumer, 1969, p. 2).

Denzin (1994) argued that the researcher “fashions meaning and interpretation out of ongoing experience” (p. 501), and this belief is derived from the work of Mead and later Blumer (1969). Blumer (1969) drew on the work of Mead (1934), whose seminal work influenced the symbolic interactionism movement. Much of what Mead (1934) examined, is the structure of the self (the “I” and “me”), and the self in relation to society. He believed that the self can be both object and subject, and that what goes into the self is influenced by the social experiences encountered. As Mead<sup>1</sup> explained:

We realise in everyday conduct and experience that an individual does not mean a great deal of what he is doing and saying. We frequently say that such an individual is not himself. We come away from an interview with a realisation that we have left out important things, that there are parts of the self that did not get into what was said. What determines the amount of the self that gets into communication is the social experience itself. Of course, a great deal of the self does not need to get expression. We carry on a whole series of different relationships to different people. We are one thing to one man and another thing to another. There are parts of the self which exist only for the self in relationship to itself. We divide ourselves up in all sorts of different selves with reference to our acquaintances. We discuss politics with one and religion with another. There are all sorts of different selves answering to all sorts of different social reactions. It is the social process itself that is responsible for the appearance of the self; it is not there as a self apart from this type of experience (Mead, 1934, p. 142).

An integral aspect of symbolic interactionism derived from Mead’s work is the notion of the self, where Mead distinguished between the “me” and “I” aspect of the self. Mead identified the “me” as the member of a social group that represents the values associated with that group, whereas the “I” is the part of the self that holds particular values or beliefs that reconstitute the group or society. The “I” affects his or her environment and by doing so changes the self, and the group. Mead (1934) argued that when people adjust to different environments or communities they change themselves and, in doing so, they ultimately influence the community in which they live, which in turn changes. This is an important point because studies in student learning need to be mindful of the influence that individuals have on different contexts and groups, as well as the influence these contexts and groups have on the individual; that is, to take into account the different selves.

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<sup>1</sup> Mead’s gender specific reference is consistent with the social-historical context of writing at that time.

Sociocultural theory, ethnography, phenomenology and phenomenography all have the aim of seeking and interpreting meaning in context. Therefore, through the symbolic interactionist paradigm such work with learners can be undertaken. In order to implement an interpretivist approach, the use of qualitative methods, particularly phenomenography and ethnography, are utilised in the present study. Before discussing the specific attributes of phenomenography and ethnography, the broad picture of qualitative research will be examined.

### 3.2 Qualitative research

Qualitative research in education developed in the late 1960s and early 1970s (Atkinson, Delamont, & Hammersley, 1993), and addresses questions concerned with matters of meaning. The nature of qualitative research emphasises the process, meaning and understanding of the phenomena studied (Merriam, 1998). Eisner (1991) described the hallmarks of qualitative research as flexibility, adjustment and iterativity. These are important as the inquiry participates in a paradigm that aims to highlight parts of an evolving complex world, rather than aiming to control variables in a laboratory-type setting. This enables the researcher to penetrate through the surface of the phenomenon.

Although qualitative research has a number of meanings, it is generally identified both by the way in which data are collected and in the way they are analysed. While Strauss and Corbin (1990) defined qualitative research as “any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification” (p. 17), there can be some quantification of data collected through qualitative work. However, while some of the data may be quantified, the analysis undertaken is generally qualitative.

The drive for *meaning* rather than *measuring* is one of the key differences between a qualitative and quantitative approach, and as Strauss and Corbin (1990) pointed out, qualitative methods allow the researcher to explore the intricacies of a phenomenon that is not always possible using quantitative approaches. To achieve this, different types of qualitative research can be employed including ethnography, the phenomenological approach, sociological studies, life histories, naturalistic inquiry, participant observation, case study, interpretive research, and conversational analysis (Merriam, 1998; Neuman, 1997; Strauss & Corbin, 1990). In the case of the present study, the

meaning students ascribe to learning and self-assessment is sought firstly through a phenomenographic approach and secondly through an ethnographic approach.

Qualitative research methodologies make the assumption that such approaches rely on an interaction between the researcher and participant. This interaction is both a personal and political event because the researcher usually takes a dominant role from the start by asking the research questions and defining the methodology (Eisner, 1991). Through research within an interpretivist paradigm, however, while the researcher defines the questions, the basic principle of understanding the participant’s viewpoint remains paramount.

Merriam (1998) differentiated qualitative research from quantitative research in a number of ways including the mode of analysis and the findings (see Figure 3.1). The features outlined by Merriam for *qualitative* research highlight important aspects in studying student learning and determined the type of research used in the present study.

<b>Points of Comparison</b>	<b>Qualitative research</b>	<b>Quantitative research</b>
<b>Focus of research</b>	Quality (nature, essence)	Quantity (how much, how many)
<b>Philosophical roots</b>	Phenomenology, symbolic interactionism	Positivism, logical empiricism
<b>Associated phrases</b>	Fieldwork, ethnographic, naturalistic grounded, constructivist	Experimental, empirical, statistical
<b>Goal of investigation</b>	Understanding, description, discovery, meaning, hypothesis generating	Prediction, control, description, confirmation, hypothesis testing
<b>Design characteristics</b>	Flexible, evolving, emergent	Predetermined, structured
<b>Sample</b>	Small, non random, purposeful, theoretical	Large, random, representative
<b>Data collection</b>	Researcher as primary instrument, interviews, observations, documents	Inanimate instruments (scales, tests, surveys, questionnaires, computers)
<b>Mode of analysis</b>	Inductive (by researcher)	Deductive (by statistical methods)
<b>Findings</b>	Comprehensive, holistic, expansive, richly descriptive	Precise, numerical

Figure 3.1. Characteristics of Qualitative and Quantitative research (Merriam, 1998, p. 9)

Research that sets out to understand the world of the participant requires a qualitative approach that allows the researcher into another cultural world. It is for this reason that qualitative methods are used in both phases of this study. Qualitative research is a

useful vehicle with which to enter into another world because the meaning the participants bring to the phenomenon may be explored through a variety of techniques. These can include observations, in-depth interviews, field notes and visual data such as video recording or photographs (Punch, 1994).

In order to address the current research questions in a meaningful way for both the participants and the researcher, a qualitative design is integral in achieving comprehensive and descriptive findings. An essential aspect of qualitative work was described by Geertz (1973) when he introduced the notion of “thick description” to explain the importance of moving away from *describing* to *understanding* the deeper issues. The use of thick description encapsulates the notion of meaning, and while the initial use of thick description was used to focus on the nature of method and aims of ethnography (Geertz, 1973), it is a term used by many qualitative researchers to describe the way in which attempts are made to produce full descriptions of the context, setting, content and interactions of the participants and their environment. Eisner (1991) described thick description as an “effort aimed at interpretation, at getting below the surface to that most enigmatic aspect of the human condition: the construction of meaning” (p. 15).

A number of researchers have identified a range of characteristics considered to be fundamental aspects of qualitative research (Bogdan & Biklen, 1982, 1998; Eisner, 1991; Merriam, 1998; Taylor & Bogdan, 1998). Bogdan and Biklen (1982) outlined five characteristics associated with qualitative research, which included that the research is undertaken in natural settings, the data are descriptive, there is a concern with process, the analysis of data is largely inductive, and meaning is the primary concern for the researchers. These characteristics were recognised as still current 16 years later (Bogdan & Biklen, 1998).

While the characteristics described by Bogdan and Biklen highlight the naturalistic setting and the aim of qualitative research, the essential aspect of exploring the meaning that *people* attribute to events and objects is not featured. Taylor and Bogdan (1998) identified that qualitative researchers were concerned with the meanings people attach to things in their lives; and also noted that in qualitative research there is a holistic analysis of people and settings; more specifically, they suggested that all perspectives are worthy of study. Merriam (1998) identified features of qualitative research that are

consistent with the work of other qualitative researchers (Bogdan & Biklen, 1998; Eisner, 1991; Taylor & Bogdan, 1998).

For this study, Eisner (1991) provides the more useful framework for discussing the critical features of qualitative work because his list identified both researcher and paradigm influences. While his list is similar to Bogdan and Biklen (1998) and Taylor and Bogdan (1998), Eisner identified the presence of voice in text, as well as the importance of detail. The characteristics Eisner (1991) identified as playing an inherent part in qualitative research are: that qualitative studies tend to be field focussed; that the self is an instrument; that qualitative studies are interpretive in character; that the use of expressive language and the presence of voice is in text; that attention is given to particulars; and that the study has coherence, insight and instrumental utility. In the sections below, the aspects of qualitative research identified by Merriam (1998) and Bogdan and Biklen (1998), will be explored within the features identified by Eisner because Eisner encapsulates both researcher and paradigm characteristics.

*Qualitative studies tend to be field focussed:* Most qualitative research involves the researcher entering the world of the participant. In order to do this effectively, such research is undertaken within the usual setting of the participant, as distinct from either a controlled laboratory setting, or an environment that the participant is less familiar with (Newman, Griffin, & Cole, 1989; Strauss & Corbin, 1990). As the context is usually an integral part of the study, the research generally takes place within the setting (Merriam, 1998). Therefore, researchers within the qualitative paradigm usually enter the field by physically going to the site or setting where the people work, learn, or live. This enables the researcher to study the participants in their natural setting within a familiar context. In the present study, the second phase took place within a number of learning contexts involving both school and out-of-school settings.

*The self is an instrument:* Within qualitative research, the researcher is the principal instrument for collection of data and subsequent analysis (Guba & Lincoln, 1981; Kvale, 1996; Neuman, 1997). Often the data collection and analysis phase are inextricably linked within the research process and can, at times, occur simultaneously.

The rationale for identifying the researcher as the key research instrument has been outlined by Merriam (1998).

The researcher is responsive to the context; he or she can adapt techniques to the circumstances; the total context can be considered; what is known about the situation can be expanded through sensitivity to nonverbal aspects; the researcher can process data immediately, can clarify and summarise as the study evolves, and can explore anomalous responses (Merriam, 1998, p. 7).

Given that the researcher is the key instrument, essential tools of qualitative research are personal qualities, such as communication skills, empathy, sensitivity (Merriam, 1998) and the power of listening (Kvale, 1996; Woods, 1986).

*Qualitative studies are interpretative in character:* The meanings people have constructed are the underlying focus in qualitative work (Bogdan & Biklen, 1998; Merriam, 1998). This is a key feature that differentiates qualitative work from quantitative work. It is through identifying the meaning constructed by the participant that the phenomena come to be understood in qualitative research. The ability to interpret the significance of the whole in relation to its parts is a factor of qualitative research. In comparison, quantitative research sets out to measure aspects of the phenomenon and looks at component parts that make up the whole, rather than attempting to see the interrelatedness of the whole. While all interpretivist inquiries are largely based on the ability to “watch, listen, record and examine” (Schwandt, 1994, p. 119), the interview is seen as the most powerful tool used in attempts to understand people (Fontana & Frey, 1994).

*The use of expressive language and the presence of voice in text:* The written reports and use of expressive language to acknowledge the researcher’s role in the process is a feature of qualitative work. There are fewer attempts to achieve objectivity or neutrality in the writing (Eisner, 1973, 1991; Strauss & Corbin, 1990). Eisner (1991) referred to the “presence of voice” in text to describe the importance of identifying the participant’s views through their language, as well as writing in a more personal way as a researcher. However, while Eisner argued clearly for the “presence of voice” in text, Strauss and Corbin (1990) believed it is dependent on the audience and scientific journal for which the work is intended. Regardless of how it is expressed through language, the end product is “richly descriptive” (Merriam, 1998, p. 8). Through employing both phenomenographic and ethnographic methods, the current study acknowledges that the inclusion of student voice is an integral component of both the

data collection and description of results. Lancy (1993) stated that “every aspect of one’s work as a qualitative researcher demands more writing than would be the case for a quantitative scholar. Writing is to qualitative research what mathematics is to quantitative research” (p. 234). Within the present study, the presence of student voice is dominant in the presentation of results.

*Attention to particulars:* Eisner (1991) discussed the importance of not losing the meaning and relevancy of the phenomena in qualitative research. He argued that through other methods of research within a quantitative paradigm, meaning is lost in the management and treatment of numerical data. In this study, the use of phenomenography (Phase One) ensures that the meaning of the phenomenon is identified and developed, and ethnography (Phase Two) allows this meaning to be explored in a number of contexts.

*It has coherence, insight and instrumental utility:* Eisner (1991) believed that qualitative inquiry is about persuasion because the data and analysis are about abstracting meaning in a certain way to determine what counts. As Eisner (1991) stated “in qualitative research there is no statistical test of significance to determine if results ‘count’; in the end, what counts is a matter of judgement” (p. 39). This is perceived as both a strength and weakness of qualitative research. For example, one of the cautions of interpretive work is that the researcher can extract meaning to illustrate a point, and can influence the results through the interpretation (Stronach & MacLure, 1997). Stronach and MacLure (1997) raised concerns that researchers can lead others to a meaning through the interpretation and analysis of data, and that there are often a variety of ways of interpreting the data. Within this study the collection of data and subsequent analysis occurred over two phases to ensure greater reliability of results and insight into the phenomena of learning and self-assessment. The benefits of employing two different methods over two phases give greater confidence to the data because the conceptions of learning and self-assessment are first looked at from the student’s point of view (phenomenographic phase), and second within the context of student learning (ethnographic phase).

### 3.3 Phenomenography

An exploration of learning and self-assessment from the learner's perspective involves taking a fresh look at the phenomenon of learning and setting aside preconceived ideas of what learning might look like from such a perspective (Crotty, 1998). Therefore, phenomenology allows new meanings of a phenomenon to emerge, and what may have been taken for granted about a phenomenon, can be questioned and examined in a new way. As the current research aims to understand learning and self-assessment from the students' perspective, the use of phenomenography, which has links to phenomenology, is used to provide another perspective on learning and self-assessment. Psathas (1973) noted that "phenomenological inquiry begins with silence" (p. 000). Within the present study, in order to understand the phenomena of learning and self-assessment, it was therefore critical to listen to the student.

To explore peoples' experiences, understanding, interpretations, or conceptualisation of a phenomenon, the use of interviewing is the most feasible way to collect data. However, while the predominant collection technique employed within a phenomenographic study is the indepth individual semi-structured interview (Marton, 1981; Walsh, 1994), there have been other mediums used to explore peoples' conceptions of a phenomenon. For example, collecting written data from students on "when I understood..." (Helmstad & Marton, 1992); map reading with 12-year-olds (Kwan & Gerber, 1994); and drawings and surveys (Russell & Massey, 1994). In the present study, interviewing young learners was considered most useful to address the aims of the research because other means such as writing or drawing relied on the students having the necessary skills to express their understanding.

The results of phenomenography are seen in the conceptions of the phenomenon derived from the pool of meanings identified through the transcripts. These make up a set of categories of description. It is these categories that map the phenomenon and are seen as the results of phenomenography. However, some early phenomenographic studies failed to show how educators or researchers could use these categories of description in practical ways. This failure to relate outcomes of the research to educational practice is one of the criticisms of the phenomenographic approach (Hasselgren, 1996; Säljö, 1996), although Marton (1996) called such claims "untrue and outrageous" (p. 170). While these researchers made an important point about the

relationship between the research and educational practice, there are examples where phenomenographic work is used in practical ways. For example phenomenographic methods and results have been used in naturalistic settings to improve early childhood education (Pramling 1996b, 1988), and phenomenographic research has influenced decisions about curriculum and teaching methods (Burns, 1997; Entwistle & Ramsden, 1983; Marton & Ramsden, 1988; Thomas, 1994).

Bowden (1994b, 1996) stipulated the importance of being able to use the research results to assist with student learning. He believed that this move towards practical application of the results demonstrates a shift from “pure” phenomenography to what he terms “developmental” phenomenography. Bowden’s earlier work demonstrated how tertiary teachers can be taught the ideas of phenomenography to apply to their own teaching for the benefit of their students (Bowden, 1988). As one example of practical applications, Pramling’s work (1988, 1996a, 1996b) has identified that phenomenographic research in early childhood education can create change within the learning environment through changing teaching practice, which creates situations where learners develop an awareness of their learning.

Another criticism of phenomenography is that through the process of categorising individual’s ideas into conceptions and categories of description, the individual’s thoughts are decontextualised, which removes the social and historical context to that thinking (Uljens, 1993, 1996; Webb, 1996). To address these concerns, Säljö (1996) argued that the context of the discourse from which conceptions were derived be considered in phenomenographic work. This can be addressed through incorporating other methods (such as ethnographic approaches) to complement the outcomes of the phenomenographic study. In one example, Lindberg-Sand (1996) incorporated both phenomenographic and ethnographic approaches, which allowed her to examine nurses’ conceptions of health and then examine these conceptions through fieldwork within the nurses’ working environment. In view of these suggestions, the present study uses both phenomenographic and ethnographic approaches that involve working within the naturalistic setting of the participants after establishing their conceptions of a phenomenon. The intention is to provide a more holistic and integrative approach to address some of the concerns about decontextualising the phenomenon.

While phenomenography arose through empirical studies on learning during the 1970s, it was not until 1981 that Marton named the research programme phenomenography. It was at this time that interest arose between the connections with phenomenology. While Marton (1981) argued that a distinction could be made between phenomenography and phenomenology, there are links between the philosophy of the two approaches. There is evidence to suggest that phenomenography draws on the phenomenology tradition. For example, Spinelli (1989) identified a key principle in phenomenology as being that “consciousness is always consciousness of some thing...” (p. 11), while Marton and Booth (1997) argued that in phenomenography, experience is always an experience of some thing. Therefore, both research approaches have the “object” as the focus of research, and at times Marton himself does acknowledge and address these connections. Marton and Booth (1997) pointed out that one similarity between phenomenography and phenomenology (as undertaken within the Edmund Husserl tradition) is that both approaches “share the object of their research, inasmuch as both aim to reveal the nature of human experience and awareness” (p. 117). The position taken for the present study is that there is a phenomenological influence underpinning phenomenographic research that, while not explicit, is inherent in the quest for understanding the meaning attributed to objects by subjects.

### **3.3.1 Conceptions**

Phenomenography focuses on variation, and the objective of the study is to reveal that variation. This variation is demonstrated through categories of description that are developed through the students’ conceptions as identified through the indepth interviews (Marton & Booth, 1997). Säljö (1996) noted that “the idea of conceptions can be seen as a core element of phenomenography” (p. 27). It is through the conceptions of the phenomenon, as expressed by the participants in the interviews, that the researcher can later establish categories of description. Through the interview process, the researcher provides, or suggests the participant select, a context for the participant to reflect on experiences of a phenomenon. The researcher’s task is to ensure these conceptions are representative and true to the individual’s learning experience (Francis, 1996), with the aim being “to gather faithful descriptions in order to categorise them” (Francis, 1993, p. 69). Through identifying the conceptions, and then creating a structure to categorise them, different aspects of the same phenomenon are identified. As Dall’Alba (1994a) explained “within phenomenographic research the

conceptions identified are regarded as qualitatively different but related to each other by virtue of the fact that they are different conceptions of the same phenomenon” (p. 38).

The descriptions of conceptions are developed through analysis of the transcripts (Svensson, 1984, 1994a). The nature of a conception is that it represents a relation between an individual and a part of the world. There is a belief that the same categories of description appear in different situations and that the set of categories are stable between situations, but that the individual can and does move from one category to another on different occasions (Marton & Booth, 1997; Trigwell, 1994). As Bowden (1994a) stated, “the person’s conceptions of the phenomenon is unlikely to be stable with time or context” (p. 15). Therefore, these are not categories for classifying individuals, but categories for describing ways of perceiving the world around us.

While the main analysis phase takes place after the interview process, the data collection and analysis in phenomenographic research are inextricably linked because the researcher is analysing data throughout the interview process in order to create probe questions carefully for further explanations from the participant (Marton & Booth, 1997). Therefore, the researcher analyses responses from the participant while collecting data through the interview, which influences the next questions used in the interview.

The transcribed interviews form the basis of the data for further analysis. These transcripts, as a whole, form the pool of meaning. This pool of meaning contains two sorts of data – one in relation to the individual and the other in relation to the collective. While it is essentially the same material, it can be viewed from two perspectives with the context being either the individual transcript or the collective understandings. The analysis of the data begins with the researcher identifying a perspective and then analysing the perspective in relation to these two contexts – the individual and the collective.

### 3.3.2 Categories of description

Phenomenographic research is based on the premise that there is a limited number of qualitatively different ways of experiencing a phenomenon and therefore the categories of description are usually formed with between 5–6 conceptions (Hasselgren, 1996; Trigwell, 1994). The categories of description represent the collective experiences, and are considered to be the most important result of phenomenographic work (Marton, 1981, 1988).

The relationship between the identified conceptions and the categories of description is both integral and dialectical (Svensson, 1984, 1994a; Marton & Booth, 1997; Prosser, 1994a). This means that there is never a clear distinction between categories of description and conceptions because each relies on the other. The categories are formulated on the basis of the collective pool of the transcripts, and the conceptions can be understood only in relation to the entire pool, that is, in relation to the categories of description. It is therefore important when describing a conception held by a participant, to examine it in the context of the category of description.

### 3.3.3 Structural and referential aspects

The way we experience phenomena occurs with a “what” and “how” aspect. Marton and Booth (1997) argued that all experiences have a structural aspect and a referential (meaning) aspect. The structural aspect of experience was described as being twofold. It involves “discernment of the whole from the context on the one hand and discernment of the parts and their relationship within the whole on the other” (Marton & Booth, 1997, p. 87). This relates to what an individual holds in focus and thereby gives attention to, and what the individual allows to be placed in the background. The *whole* is still present, but the individual only attends to one aspect of it, and by doing so, places the rest of the activity, context or event to the background.

The referential aspect of an experience that is inextricably intertwined with the structural aspect, refers to the *meaning* assigned to the experience. In seeing the parts and the whole of an experience, and the relationship between them (the structural aspect), the meaning of the experience is given clarity. However, the literature on phenomenographic studies reveals neither theoretical examples nor practical

demonstrations of the use of structural or referential aspects of phenomena. Marton and Booth (1997) have also suggested that an examination of structural or referential aspects is not always relevant in phenomenographic studies.

### **3.3.4 Data Analysis**

The process of establishing categories of descriptions occurs with an analysis of the interview data. Interviews are transcribed verbatim, and are read and reread until emergent qualities of students' experiences are consistently identified and justified (Entwistle & Ramsden, 1983). As noted earlier, the conceptions are established through the whole interview data pool, rather than through individual transcripts. Once these collective findings have been established, they form the set of the categories of description. The conceptions are the individual participant's response and the categories of description are derived from these conceptions. These categories are therefore derived totally from the interview data and are not based on the researcher's preconceived ideas of the phenomena. There is no predetermined classification system that has been established before the analysis phase. The analysis phase is an iterative process where the researcher constantly works with the data to create and recreate the conceptions that form the categories of description (Bowden, 1994b; Prosser, 1994a; Trigwell, 1994).

The conceptions of a phenomenon based on individuals' experiences have been determined through all the interviews, and are therefore decontextualised from the individual source. The conceptions form the collective experience, which form the categories of description. The categories of description form a hierarchy (Marton & Booth, 1997). This hierarchy depicts the increasing complexity and inclusivity of the different ways of experiencing the phenomenon. Marton and Booth (1997) argued that the less sophisticated conceptions should be seen as representing an earlier phase of a more highly evolved way of experiencing a phenomenon.

Marton and Booth (1997) identified three factors that should be taken into consideration when developing categories of description. These criteria ensure quality when developing conceptions and subsequent categories of description from a data set.

- The individual categories should each stand in clear relation to the phenomenon of the investigation so that each category tells us something distinct about a particular way of experiencing the phenomenon.

- Categories have to stand in a logical relationship with one another, a relationship that is frequently hierarchical.
- The system should be parsimonious, which is to say that as few categories should be explicated as is feasible and reasonable, for capturing the critical variation in the data (Marton & Booth, 1997, p. 125).

The entire group of categories form the outcome space that has been described as “the complex of categories of description comprising distinct groupings of aspects of the phenomenon and the relationships between them” (Marton & Booth, 1997, p. 125). Through exploring the relationships between the categories of description as derived from the conceptions, different ways of experiencing the phenomenon can be described and understood. The outcome space represents the totality of the phenomenon with all aspects and variation of the phenomenon as experienced, and this is encapsulated through the categories of description. Therefore “the different ways of experiencing a phenomenon reflect different combinations of the aspects that we are focally aware of at a particular point in time” (Marton & Booth, 1997, p. 126). Through examining the outcome space, it is possible to identify students’ variation in how they experience learning and self-assessment.

### **3.4 Phenomenography: Data collection – Phase One**

The first phase of the present study examines year 7 students’ conceptions of learning and self-assessment to address the first two research questions: *What are year 7 students’ conceptions of learning? What are year 7 students’ conceptions of self-assessment?*

The main phenomenographic method involves semi-structured interviews that will be discussed in section 3.4.1. Before this, however, an overview of interviews as a research tool will be briefly considered to provide the backdrop for the more specific nature of phenomenographic interviews.

Interviews can take a number of forms and have been described as structured, unstructured and open-ended (Denzin & Lincoln, 1994), or as semi-structured, structured and unstructured (Fontana & Frey, 1994). The type and format for interviews in research vary, and include face-to-face one on one interviews, group interviews, focus group interviews, and one-to-one telephone interviews. Whatever the format, the interview is used as a specific tool that attempts to elicit understandings from the

participant, and is viewed by researchers as a “specific form of conversation” (Kvale, 1996, p. 19). Denzin and Lincoln (1994) described an interview as:

a conversation, the art of asking questions and listening. It is not a neutral tool, for the interviewer creates the reality of the interview situation...This method is influenced by personal characteristics of the interviewer, including race, colour, class, ethnicity and gender (p. 353).

Interview questions need to be considered both before and during the interview process. In a semi-structured interview schedule, some questions within main themes are predetermined but there are many questions posed throughout the interview that are based on the participant’s response. These questions are intended to probe for meaning and to assist the reliability of the researcher’s interpretation. While the intention in this type of research is to avoid leading questions that presuppose an answer, or to assume an understanding of a concept without checking it with the participant, subtle lead questions are sometimes unavoidable. This happens when the researcher is unaware of the subtle form of feedback communicated through gestures, phrases, or follow-up questions to the participant. However, the types of questions that can be avoided fall into three categories: multiple questions, leading questions, and yes-no questions. Figure 3.2 has been adapted from Merriam (1998) using questions associated with the current research.

Type of Question	Example
Multiple Questions	How does the teacher assess your work and do you know you have learned something before you get the test results back?
Leading Questions	Can you explain how tests make you anxious or worried?
Yes-or-No Questions	Do you like school? Have you learned much this year?

Figure 3.2. Questions to avoid during the interview process (based on and adapted from a model by Merriam, 1998, p. 79)

Kvale (1996) advised that during the interview process, the provision of judgemental feedback should be avoided. While most researchers would avoid making a statement such as “Wrong. What else could it be?”, it is harder to avoid statements such as “good” “great” or “yes, that’s right”. When interviewing children in particular, where they are used to having feedback as to the nature of their answers, it becomes even more difficult for the researcher to appear neutral to their responses. Also to be avoided

are the use of jargon and any technical terms associated with the phenomenon, such as “self-assessment” within the present study, as the interviewee may have preconceived and school-bound ideas with regards to the concept.

### **3.4.1 Phenomenographic interviews**

While the interview is the most favoured tool in qualitative research, the phenomenographic interview is a specialised process and one that has been described as being similar to Piaget’s clinical interview method (Marton, 1981; Pramling, 1983). Piaget’s clinical interview method was based on the premise that learners’ views were considered paramount and no “one” correct answer was sought (Piaget, 1929; see also Ginsburg, 1997; Ginsburg, Jacobs, & Lopez, 1993; Pramling, 1983, 1990).

Piaget’s clinical interviews were developed as a reaction against standardised testing that provided little insight into children’s thinking (Ginsburg, 1997; Ginsburg, Jacobs, & Lopez, 1993). As with the clinical interview, phenomenographic interviews are flexible, and focus on eliciting the child’s viewpoints through probing and questions developed through the child’s responses. In contrast to other researcher’s claims that the research interview is a type of conversation (Denzin & Lincoln, 1994; Kvale, 1996), it has been argued that a phenomenographic interview is not a usual conversation (Svensson, 1994b). Svensson (1994b) suggested that participants should be told before an interview that it is not an ordinary conversation because in phenomenographic interviews the researcher does not provide the usual signs of approval or disapproval associated with a conversation. The researcher is attempting to understand the viewpoint of the participant without providing clues as to his or her own understanding or beliefs about the phenomenon in question. This is one of the reasons why the art of listening is so critical to the interview process within a phenomenographic approach. Listening is fundamental to the interview because it is related to the aim of the research process, which is to understand how the interviewee thinks about and experiences the phenomenon in question (Kvale, 1996; Svensson, 1994b).

Interviews within phenomenographic research are generally semi-structured and undertaken individually, with non-technical lead questions (Entwistle & Ramsden, 1983). The initial question should not be too open-ended because the researcher has already identified the phenomenon under investigation. Within the present study, a

semi-structured interview schedule was used with additional questions generated on the basis of the responses provided by the students. Therefore, while there was a predetermined structure within each interview, no two interviews were the same. Within the present study a careful and systematic use of probe questions were used to help students clarify, elaborate or explain their responses. While probe questions do not necessarily contain much in their structure or content, they are used to elicit further explication of meaning from the participant. Examples that have been used in other phenomenographic research that were incorporated in interviews during the present study include:

- Would you say something more about...? (Dahlgren, 1995).
- What do you mean by that? (Dahlgren, 1995; Svensson, 1994b).
- Can you give me an example? (Dahlgren, 1995).
- Could you clarify what you mean? (Svensson, 1994b).

The relationship between the researcher and participant is an important one and needs to become a two-way process (Gitlin, 1994; Gitlin & Russell, 1994). Generally, the notion of partnership is essential when undertaking research within an interpretivist paradigm because while the researcher has a certain knowledge of their research, she or he is reliant on the participants to assist in understanding and learning about the phenomenon from the participant's experiences. This has resulted in the breakdown of the "researcher as expert" model and has questioned the "hierarchy of credibility" (Bogdan & Biklen, 1998). Within phenomenographic research, the power balance between the researcher and interviewee can distort the interview data (Kvale, 1996; Taylor & Bogdan, 1998). This can occur in situations where the researcher pushes "too hard or not hard enough, or by getting too close, or not close enough. In contrast, the interviewee always has the power to refuse, to deny the interviewer access to thoughts and reflections, or even to mislead" (Marton & Booth, 1997, p. 131).

The responsibility for developing, enhancing and nurturing the relationship between interviewer and interviewee, to promote an effective and insightful interview lies with the researcher. The researcher needs to be sensitive to the participant's responses, views and needs. In general, if the interview process is approached with sensitivity and care by the researcher, most participants are comfortable about talking to researchers. As Eisner (1991) noted, "it is surprising how much people are willing to say to those whom they believe are really willing to listen" (p. 183).

In order to determine the number of students to participate in the present study, consideration needed to be given to the research questions and the method used. Phenomenographic studies generally derive the descriptions from relatively small groups of people (between 20 and 30) from a particular population (e.g., students at year 7 level of schooling). The number of participants who are interviewed usually range in numbers but are generally no more than 30. Reports vary from between 20 and 30 (Dahlgren, 1995; Svensson, 1994b), between 15 and 30 (Prosser, 1994b), and between 15 and 20 (Trigwell, 1994). It is important to interview “as many subjects as necessary to find out what you need to know” (Kvale, 1996, p. 101). Kvale (1996) noted that  $15 \pm 10$  participants are common among current interview studies, although this depends upon the purpose of the research. Obviously an interview study designed to predict an election outcome would require thousands of participants in order to achieve a representative sample across a country (Kvale, 1996). Within a phenomenographic study, a specific population is identified for the specific purpose of the study, and the notion that there are limited ways of experiencing the phenomena is *only* in relation to that specific population (Marton, 1981; Marton & Booth, 1997). So while the categories of description presented can never claim to be an exhaustive system, the goal is that they should be complete for that population chosen.

### **3.4.2 Considerations when interviewing children**

There are many factors that need to be considered when interviewing young learners (Doverborg & Pramling, 1993). These include the structure of the interviews, types of questions, time given to participants to respond, and general interview techniques.

In a study on children’s conceptions of society involving 5- to 11-year-old children, Furth (1980) noted that a relaxed interview required several factors. These factors included the following: that the interview should be in dialogue form as distinct from reading questions and writing out answers; that semi-structured interviews are used that follow the child’s reasoning; that questions that elicit direct yes or no answers are avoided; and that the interview is not set up as giving the impression of being a test. Furth (1980) also argued that interest in the child’s view is made explicit by comments from the researcher such as “tell me what you think...” or “I am interested in your view...”. These were all considered and adapted in the interviews with the students in this study.

In the same way that the interview process is different when working with children, so too is the analysis phase when dealing with the transcripts. As Furth (1980) noted when analysing data from children's interviews "the conversational language of the children had characteristics one expects of their ordinary spoken language" (Furth, 1980, p. 21). The focus of analysis needs to be on the meaning portrayed in the children's language, rather than on the language itself.

### **3.4.3 Validity and reliability issues in phenomenographic research**

When employing qualitative research methods, the criterion on which research is judged has predominantly centred on issues regarding validity and reliability (Gitlin & Russell, 1994). Validity refers to the "truthfulness" of the research, while reliability issues have largely been concerned with stability and replication.

Validity within educational research is often discussed in terms of the procedural difficulties that occur when undertaking research, and of technical problems associated with the data collection rather than as a complex theoretical issue (Gitlin & Russell, 1994; Lather, 1994). Within qualitative research, issues of validity have increasingly included the nature of the relationship between the participants and researcher, and the actual aim and process of the research. Importance is now placed on validating the research for the participants in collaboration with the researcher's aims.

Reliability issues within Phase One were considered within a qualitative research design and phenomenographic approach. Historically, issues of reliability within a quantitative paradigm were established so that other researchers could replicate the study across time, culture and gender. The sense of "objectivity" was important because it was through holding an objective view of truth that researchers felt confident in being able to replicate findings which confirmed their hypothesis. However, reliability within qualitative research has developed a different interpretation because qualitative research has different epistemological and ontological assumptions from quantitative research. Within the qualitative research paradigm the concern is with meaning, understanding and description, rather than discovering an objective truth.

Reliability within phenomenographic research has been considered in the phenomenographic literature at both the data collection and the analysis phases.

Dahlgren (1995) argued that reliability is enhanced when the researcher uses a semi-structured interview schedule, which should be adhered to, even when the researcher is extremely familiar with the questions. This helps maintain integrity across the interviews, and ensures that similar issues are addressed with all participants. During the data analysis phase, interjudge reliability of the categories of description is considered important by some phenomenographic researchers (Dahlgren, 1995; Marton, 1996; Pramling, 1988). This refers to the extent to which another person identifies the same categories as the researcher. Dahlgren (1995) urged researchers to work in partnerships or with a group when analysing data, and in doctoral work he emphasised the importance of supervisors who provide another analytical eye over the categories determined by the doctoral candidate. In previous phenomenographic studies where interjudge reliability has been examined, it was reported that there was between 93% and 98% agreement (Pramling, 1988).

However, Sandberg (1996) argued that interjudge reliability should not be a criterion for reliability in phenomenographic research, but that emphasis should be placed on *interpretive awareness* instead. This is described by Sandberg as being “to acknowledge and explicitly deal with our subjectivity throughout the research process instead of overlooking it” (p. 137). He believed that through this acknowledgment, researchers become more aware of their interpretations and become more sensitive to how they might influence the research process. While some phenomenographic researchers support Sandberg’s idea (e.g., Bowden, 1996), Marton (1996) continued to believe in the usefulness of and necessity for interjudge reliability. Marton (1996) argued that while it should not be the only criterion used in determining the quality of the research, it serves a useful purpose in reflecting “the extent to which two comparatively competent people make use of categories of description originating from a phenomenographic study in the same way” (p. 169).

Within the present study, reliability and validity within Phase One were addressed. The data were examined on a number of occasions across time, and consistent findings were made. For example, after the categories of description were first identified through the analysis process, at the completion of the fieldwork one year later, the researcher went back to the phenomenographic data source (the interview transcripts), selected interview transcripts at random and examined the conceptions contained in them. The

results were then compared with the initial findings, and these were consistently the same.

### 3.5 Ethnography

Having identified students' conceptions of learning and self-assessment through phenomenography, the context in which these students learn needs to be examined to explore the environments and influences of learning and self-assessment. As Lave (1996) has argued, ethnography is useful to "understand learning as part of practice" (p. 162). While the first phase required an approach that allowed individual learners to be interviewed in some depth with regards to learning and self-assessment, the second phase required the researcher to enter the complex and rich culture of student learning where the dynamics of the various environments impact on both learner and researcher. This primarily involves participant observation and fieldwork (Neuman, 1997). The researcher actively enters the world of the participant in order to see the situation:

as it is seen by the actor, observing what the actor takes into account, observing how he [sic] interprets what is taken into account, noting the alternative minds of acts that are mapped out in advance, and seeking to follow the interpretation that led to the selection and execution of these prefigured acts (Blumer, 1969, p. 56).

The cultural aspect of the various settings within which learning and self-assessment occur in the present study is understood as "the acquired knowledge people use to interpret, experience and generate behaviour" (Spradley, 1980, p. 6). The understanding and appreciation of the cultural aspects of an activity and setting is what provides the means for people to act together as community of learners.

Phase Two of the present study requires an examination of student learning and self-assessment in a number of contexts, and ethnographic techniques provide a way to achieve this. In this way, the participation of learners in a community of practice is highlighted (Lave, 1996; Rogoff, 1996, 1998). The notion of a "community of practice" is based on the belief that all people are learners within their own learning communities and that each contributes to the learning of others. This describes a sociocultural belief that individuals learn through participating in different practices with others (Lave, 1996; Rogoff, 1996; Wertsch, del Río, & Alvarez, 1995). The point of analysis is neither the individual nor the environment but the dialogical relationship between the two, because underpinning sociocultural research is the *relationship* between learning

processes and sociocultural setting (Wertsch, 1985, 1995). The use of ethnographic research is “useful for trying to focus on the specifics of changing participation in changing practices, most especially on learners’ changing conditions and ways of participating” (Lave, 1996, p. 162).

Key considerations when undertaking ethnographic work have been identified (Bogdan & Biklen, 1998; Woods, 1986). These include: that the research must be grounded in empirical work within natural settings; that openness of mind is integral to understanding the complexity of perceptions; that entering the life of the participants is integral to the success of the study; that effort is made to understand the participant’s viewpoint; that the researcher identifies and appreciates the unique culture of the group; that the symbolic language of the group is examined; and that there is an appreciation of the whole in order to understand the parts (Bogdan & Biklen, 1998; Woods, 1986). The ethnographic researcher develops a special rapport and alliance with the participants, and to reflect this relationship, the people taking part in the research are not described as subjects, but rather participants (Merriam, 1998) or informants (Delamont, 1992).

Rogoff (1995, 1996) developed three planes of analysis within sociocultural research – community (apprenticeship), interpersonal (guided participation), and personal (participatory appropriation) – as means to emphasise the:

similarities and differences across varying sociocultural activities, as well as tracking the relations among aspects of events viewed in different planes of analysis. Such a sociocultural analysis requires considering how individuals, groups and communities transform as they together constitute and are constituted by sociocultural activity (Rogoff, 1995, p. 161).

These planes of analysis will be explored in the next section. As Rogoff (1996) stated, “the three planes cannot be isolated, and none is primary except with regard to being the current focus of attention when we can focus on one or another, keeping the others in the background for our analysis” (Rogoff, 1996, p. 279).

### **3.5.1 Planes of analysis**

Rogoff (1997) took the position that when studying learning, the individual cannot be dissected from the activity, and that learning and development is a process of transformation through participating in cultural activities (Rogoff, Baker-Sennett,

Lacasa, & Goldsmith, 1995). An implication is that different cultural institutions impact on how children work together, which means that, as Matusov, Bell and Rogoff (1998) suggested, “children may be learning more than curriculum content in their involvement in the teaching and learning practices of their school” (p. 1). This means that to analyse learning and self-assessment, it is important to focus on the context of that learning, that is, where that learning takes place, with whom, and in what way.

The analysis for the second phase of the present study involved contextual analysis using the framework developed by Rogoff (1995, 1996, 1998). Rogoff (1995) believed that within a setting the researcher could view activity through three planes or lenses:

- The *community plane* that is also referred to as apprenticeship involves community activity whereby individuals participate “with others in culturally organised activity that has as part of its purpose the development of mature participation in the activity by the less experienced people” (Rogoff, 1995, p. 142).
- The *interpersonal plane*, also referred to as guided participation, involves “the processes and systems of involvement between people as they communicate and coordinate efforts while participating in culturally valued activity” (ibid, p. 142).
- The *personal plane*, also referred to as participatory appropriation, involves “how individuals change through their involvement in one or another activity, in the process becoming prepared for subsequent involvement in related activities” (ibid, p. 142).

While the context remains an integral part of the activity, what is taken to the fore, and what is taken to the background is dependent on which plane or lens is used to examine the activity. This complements phenomenography and is consistent with Marton’s views that awareness is a culmination of our experiences. Marton argued that it is not possible to be simultaneously aware of everything in the same way (Marton, 1988, 1996; Marton & Booth, 1997). The three planes of analysis will be examined further.

The community plane focuses on people participating in an activity. It encompasses the culturally organised activity and the people interacting with each other. One example was illustrated by Rogoff et al. (1995), who examined the sales and delivery of Girl Scout cookies within the States. They examined this as a culturally organised practice, and looked at how this affected a group of young girls (10–11 year olds) in their local community. By using the community plane of analysis, Rogoff et al. (1995) examined the institutionalised practice of cookie selling through the individual practices and participation of the girls. Through this analysis, the authors identified how over time

this practice of selling cookies had transformed as a result of changing communities, and community structures, and through the impact of technological change. For example, as more parents assisted with sales through their work environment, door-to-door selling was less dominant as a means of selling. Therefore the community plane explored the way the practice had changed and transformed over the years through the interaction with those involved and the artefacts (such as phone, faxes, computers) that impacted on the practice. Not only was the community plane of analysis employed to understand the historical and institutional context of the activity, but also the personal and interpersonal planes were used to help describe and understand the process of transformation through the girls' participation.

The interpersonal plane looks at how individuals communicate and work together on activities. Using Vygotsky's theory that emphasised the social environment for learning and that demonstrated learning preceded development (Newman & Holzman, 1993; Vygotsky, 1978, 1987), cognitive change is seen as part of the social environment rather than as "an unanalysed force impinging on the individual organism" (Newman, Griffin, & Cole, 1989, p. 59). This reinforces the inseparability of the individual and the context (Lave, 1988, 1996; Rogoff, 1984, 1998). Using the earlier example of the Girl Scouts, Rogoff et al. (1995) noted that the girls' roles in selling their cookies varied according to their interaction with buyers of the cookies, and with their support people such as their friends, family and Scout leaders. The girls developed responsibility through their participation with others, but some girls were given more responsibility than others because of family situations. For example, one girl completed all the sales on her own because her parents were not available to help, while another girl had her mother with her during all selling transactions. The roles these girls took were quite different because of the nature of the interactions.

Finally, the third plane, the personal plane, focuses on the individual response to the activity and their interactions with other people. This plane of analysis focuses on how individuals change as a result of their interaction with other people and with the activity. It is consistent with Vygotsky's (1988) concept of the internalisation of social relations where learners develop as a result of their interaction with others. Taking the Girl Scout cookie example, within the personal plane Rogoff et al. (1995) observed that young Girl Scouts changed through participating in the traditional activity of selling cookies. These children were observed learning to solve complex problems through

their sales and delivery jobs that required systematic planning, mathematical calculations and logistical preparation in supplying the orders. As the children learned more skills and became more confident, their roles as sellers changed, which in turn changed their participation. As Rogoff et al. (1995) stated, “individuals transform their understanding of and responsibility for activities through their own participation, and in the process they become prepared to engage in similar subsequent activities” (p. 53).

### 3.5.2 Culture

It is important to acknowledge that schooling is a cultural practice (Matusov, Bell, & Rogoff, 1998), while also acknowledging the many other facets to culture when examining student learning. Brown, Collins, and Duguid (1989a) took the position that “everyone participates in multiple cultures, each of which frames its own culturally appropriate activity” (p. 10). In line with this view, Brown, Collins, and Duguid (1989b) stated, “students already have a culture or belief system when they arrive at school – the belief system of *just plain folks* (JPFs), developed out of their own learning experiences” (p. 11). In ethnographic research, attempts to understand aspects of the culture are important (Bogdan & Biklen, 1998; Jacobs, 1992).

Whenever groups work or live together in communities, shared symbols and meanings come to constitute a culture or subculture (Woods, 1992). In the present study, where research takes place within a classroom, the culture is inherent in various aspects of school life (Alton-Lee & Nuthall, 1992; Metcalf & Hunt, 1974; Woods, 1990).

As Spindler and Spindler (1992) stated:

For every social setting (i.e., classroom) in which various scenes (e.g., reading, ‘meddlin’, going to the bathroom) are studied, there is the prior (native) cultural knowledge held by each of the various actors, the action itself, and the emerging, stabilizing rules, expectations, and some understandings that are tacit. Together these constitute a ‘classroom’ or ‘school’ culture (p. 70).

Alton-Lee and Nuthall (1992) provided a framework that identified five forms of culture that could be considered when looking at student learning in a variety of settings. These are the classroom culture, the wider society in which the students belong, the peer sub-cultures, the teachers’ culture and beliefs, and the cultural background of the families based on ethnic differences (Alton-Lee & Nuthall, 1992).

The researcher is privy to student culture within a school setting either through eavesdropping or after developing trust with the participants (Delamont, 1992). Whether the information takes the form of student jokes or even insults, these are all considered key to understanding the culture of the participants (Delamont, 1992). This culture is specific to the school setting, which does not take into account other settings in the learner's life, for example, home, community, sports or other contexts. Given that formal learning takes place mainly within a school context, it is important to appreciate this context through the students' eyes.

The quest for understanding and description of the cultural context surrounding student learning can best be carried out through ethnographic research that allows for deep exploration of facets associated with student learning without creating an experimental focus. The researcher does not create artificial settings to examine student learning, but rather enters into the world of the learner to identify what the learner experiences. While the culture can be examined and described, it belongs specifically to the group of students in the present study. However, Cohen and Manion (1994) argued that it can be possible to generalise the type of culture to wider populations to which group belongs (in this case other years 7 and 8 students). Eisner (1991) also argued that ethnographic research "can provide the double advantage of learning about schools and classrooms in ways that are useful for understanding other schools and classrooms and learning about individual classrooms and particular teachers in ways that are useful to them" (p. 12).

### **3.5.3 Data analysis**

In ethnographic research, field notes are recorded and coded throughout the research process (Taylor & Bogdan, 1998). The analysis involves an ongoing, formative process that occurs throughout the research process, not as a summative process at the end of the data collection phase. As Glaser (1978) stated:

While in the field, the researcher continually asks questions as to fit, relevance, and workability about the emerging categories and relationships between them. By raising questions at this point in time the researcher checks those issues while he [sic] still has access to data. As a result, he continually fits his analysis to the data by checking as he proceeds (p. 39).

Delamont (1992) reported that the analysis of the data sets generated from interviews and from fieldnotes is an essentially time-consuming task with no short cuts. The second phase of the current research followed from the phenomenographic phase,

where the conceptions of learning and self-assessment had already been established. The analysis of this phase concentrated on examining these conceptions in relation to the contexts of learning using the three planes of analysis (Rogoff, 1995, 1996).

### **3.6 Ethnography: Data collection – Phase Two**

The second phase of this study enters the world of the student through learning activities at school and beyond, to address the second set of research questions:

- *What is the nature of the learning context within a school setting for years 7 and 8 students?*
- *What is the nature of some of the learning contexts within out-of-school learning settings for years 7 and 8 students?*
- *How are students' conceptions of learning and self-assessment related?*
- *How are students' conceptions of learning and self-assessment mediated by context?*

While this phase still aims to understand learning through the eyes of the learner, the intention is to make first-order claims; that is, describe the contextual aspects of learning as experienced by the learner, which impacts on their conceptions of learning and self-assessment. In order to gain access to the student's world of learning, the researcher needs to become familiar with the various settings, contexts and cultures that embody learning experiences for the student. This section describes the methodology and methods underpinning Phase Two of the present study.

This phase of the study relied primarily on observations and interviews and, as with any ethnographic study, access to a natural setting is the first stage of the process. The process of entering into a setting is dependent on the role the researcher wants to assume, and on the research aims. However, regardless of the way in which the researcher aims to carry out the fieldwork, there is a general consensus among ethnographic researchers that entry requires skill, diplomacy, gaining the confidence of the participants and those in authority, and knowing the "gatekeepers" (Bogdan & Biklen, 1998; Merriam, 1998). This access phase involves much time, and includes supplying information about the research to the participants and the organisation.

Once entry is gained, there are levels of access throughout the research process to which the researcher may or may not be permitted entry. Depending on the trust gained, the

researcher can access increasingly sensitive information. As Neuman (1997) illustrated in the following diagram of the Access Ladder (Figure 3.3), the greater the amount of time in the field, and the greater level of trust achieved, the more the researcher can access sensitive information. The first few days in the field are critical to establishing rapport and a sense of the setting. Bogdan and Biklen (1982, 1998) offer suggestions to assist the process of becoming familiar with the setting, such as taking a slow watchful approach. This is important because familiarisation with the setting needs to be established before systematic recording can begin (Merriam, 1998).

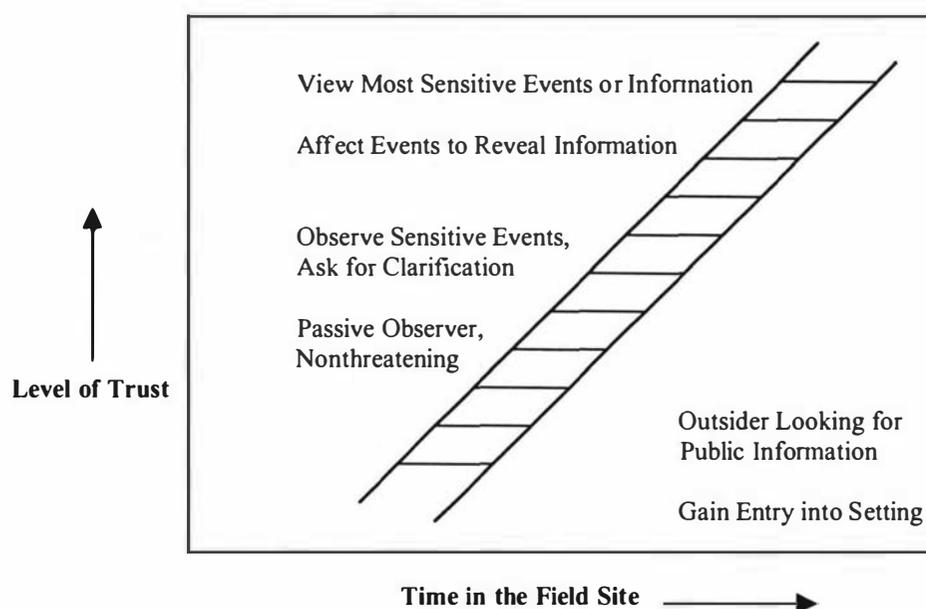


Figure 3.3. The Access Ladder (Neuman, 1997, p. 352)

### 3.6.1 Observations

The use of observation is critical to an ethnographic study, and has been described as the central plank (Delamont, 1992) and the “guts” of the ethnographic approach (Spindler & Spindler, 1992). Woods (1992) identified two important aspects of an observation – one of vision and the other discernment. Vision refers to the seeing and scanning of a wide range of activities occurring within the setting, whereas discernment involves selecting the aspects that require further scrutiny and exploration. This shift of focus is similar to Rogoff’s work involving three planes of analysis, where what the researcher views and discerns depends on what lens is being used, or what is placed to the fore and what is left in the background (Rogoff, 1995, 1996).

Observations within a case study can involve either structured or unstructured, participant or non-participant observations. While it is difficult to separate these two roles in a dynamic classroom setting, the essential difference between the two approaches rests in the role of the researcher when entering the natural setting (Cohen & Manion, 1994). This role is also usually determined by the nature of the research question because participating with the participants may either hinder or assist the research endeavour. A participant observation involves the researcher engaging with the participants at various times during the observation, whereas the non-participant observation involves the researcher taking a less involved role. At the one extreme, the researcher becomes an *insider* and *belongs* to the set of people being observed, whereas at the other end of the continuum, the researcher is an interested person who can neither identify with, nor belong to that specific set of individuals. When the researcher assumes the role of the insider, it is known as “going native”. Woods (1986) argued though, that in a school setting it is neither feasible nor possible for a “weathered” ethnographer to go native.

The non-participant observer is the most common role adopted by researchers when studying children’s activities in the classrooms and playground, where it is acknowledged that an adult may find it particularly difficult participating as, or assuming the role of a child (Spindler & Spindler, 1992). Woods (1986) believed that non-participant observation is the most common form of observation in ethnographic research used in British educational research, and this is the preferred mode of observation techniques used in this study. Regardless of the role the researcher plays in the observations, the technique of observing becomes a research tool only when certain conditions apply. These have been outlined by Kidder (1981) who argued that observation is a research tool when it: serves a formulated research purpose; is planned deliberately; is recorded systemically; and is subjected to checks and controls on validity and reliability.

Interpersonal skills are essential throughout the research process from the stage of entry to the moment of exiting. These include social skills, charm and personal skills to build rapport (Neuman, 1997), and empathy and sensitivity (Merriam, 1998). Ethnographic research is a people-orientated research process, where natural settings are dynamic and changing. The researcher becomes part of this atmosphere and often observations do not proceed in the way the researcher may anticipate. Therefore, the researcher is advised to

be persistent, flexible and creative (Bogdan & Biklen, 1998); and show sensitivity, tolerance for ambiguity, and be a good communicator (Merriam, 1998). Delamont (1978, 1992) believed that the most important attribute of an ethnographic researcher is a degree of reflexivity or self-awareness.

The researcher needs to blend into the setting as much as possible so that throughout the research process the researcher can access information without intrusion. This was the consideration taken in the present study when undertaking observations, because, as Spindler and Spindler (1992) argued, the main requirement of the researcher is that she or he observes directly. As Spindler and Spindler (1992) concluded:

No matter what instruments, coding devices, recording devices or techniques are used, the primary obligation is for the ethnographer to be there when the action takes place and to change that action as little as possible by his or her presence (Spindler & Spindler, 1992, p. 64).

The appearance and dress of the researcher becomes an important component of ethnographic research. The image created through the clothing worn by the researcher, and other aspects of the researcher's demeanour communicates to the participants information about how the researcher fits in to the cultural context of the setting (Bogdan & Biklen, 1998; Delamont, 1992).

The amount of time spent in a setting is another important consideration. While observations within a setting can range from as little as 2 weeks, a year is seen as more reasonable (Spindler & Spindler, 1992; Woods, 1992), but decisions regarding this may be driven by pragmatic issues such as research resources, including time and money (Merriam, 1998). However, as Eisner (1991) observed, "the major issue is not time per se, but the quality of the evidence needed to support observations" (p. 192). Therefore, the question associated with length of time in the field is not as important as "the quality of evidence the researcher has to support descriptions, interpretations, and appraisals" (Eisner, 1991, p. 192).

The recording of observational data is generally undertaken through some form of fieldnotes. However, other means to record observations can include videotaping, audio recording and photography. One of the key considerations when deciding on forms of recording, is that there is minimal intrusion for the participants, and that the activity is not disturbed (Woods, 1992).

Ethnographic researchers use some form of fieldwork journal (Merriam, 1998), or a field diary (Bogdan & Biklen, 1998). Merriam (1998) suggested they contain:

- Verbal descriptions of the setting, the people and activities;
- Direct quotations or at least the substance of what people said; and
- Observer's comments – put in the margins or in the running narrative and identified by underlining, bracketing, and initials 'OC' (Merriam, 1998, p. 106).

These were used in the present study, and fieldnotes were typed into the computer after each observation.

### **3.6.2 Interviews**

Observations alone will not necessarily ensure that the interpretation of events represents the learner's view. As Nicholls (1992) pointed out, "what can appear irrational to an observer will, if considered in the light of the individual's purposes or intentions, appear rational" (p. 269). Interviews as a research tool have already been discussed. In Phase Two interviews were undertaken as part of the ongoing conversations with the students and teachers. While the use of interviews varies in ethnographic research, they are a research tool used when behaviour cannot be observed or when information on the participant's feelings or interpretation of events is required (Kvale, 1996; Merriam, 1998). It is a particularly effective form of data gathering within educational contexts such as schools (Pollard, 1997), and with young children in early childhood settings (Cullen, 1992; Pramling, 1983, 1990).

The interviews in ethnographic research tend to be open-ended and semi- or unstructured, and while they are considered a separate aspect from the observation, they can also be informal and occur as part of, or during, a field observation (Pollard, 1997). Usually the informal on-the-run interviews are not taped, and information is recorded through notetaking that is of a general nature, with specific quotes from the participants where applicable. Both formal interviews (using a semi-structured interview format), and informal conversations (that took place on the run, and in response to the current activity) were used throughout Phase Two. These formal and informal interviews included interviews with students, parents and teachers.

### **3.6.3 Photographs**

Photographs are useful in ethnographic research for both documentation and examination during analysis (Pollard, 1997; Spindler & Spindler, 1992; Taylor & Bogdan, 1998). While it has been argued that this procedure is non-intrusive (Spindler & Spindler, 1992), as with all research techniques the researcher needs to have a specific purpose for using photography in the research process (Bogdan & Biklen, 1998).

There are two main types of photographs used in ethnographic research. These are photos already taken by others, and photos taken in the course of the observations. Photos can be used to assist with stimulated recall interviews, as recorded data of a product or event observed by the researcher, as a means to recall or reflect on information, places or events, and as a means to describe the activity observed and its setting (Pollard, 1997).

### **3.6.4 Documentary data**

Atkinson, Delamont, & Hammersley (1993) identified a number of different types of documentation the ethnographic researcher can access during the course of fieldwork. These have been summarised by Delamont (1992) as involving:

- Published sources about the fieldsite (e.g., school histories, school magazines);
- Mass media sources (local newspapers, student newspapers);
- Public documents inside the institution (notices pinned up, booklets for students or their parents);
- Semi-public documents (minutes of union meetings, records of student clubs);
- Semi-private (students' written work, designed for one teacher to see);
- Private documents (letters from the head teacher to a parent); and
- Documents that the researcher has asked for, such as diaries kept by informants, essays written by students, or autobiographies. (Delamont, 1992, p. 105).

Within Phase Two, the main forms of documentation used were students' written work samples and notices within the classroom and school.

### 3.6.5 Validity and reliability issues in ethnographic research

As the validity of an ethnographic study is often dependent on the amount of time in the field, Spindler and Spindler (1992) believed that validity must be questioned in short term projects, especially those of 2-week duration. Validity was strengthened in the second phase of the current research by ensuring the interviews took place over a number of occasions, and the observations took place over time, settings and contexts across the school year. These are consistent with the suggestions put forward by Carspecken (1996) to increase validity and reliability during ethnographic research.

Possible threats to validity and reliability in Phase Two of the present study were minimised by spending one school year in the field; by interviewing and observing participants over a number of sessions and across contexts; by validating data and interpretations with the learners and with the teacher; by enabling the learners to explain the language they used during activities; and by using multiple sources of data (interviews, observations, work samples).

However, rather than issues of validity and reliability, Guba and Lincoln (1994) argued that an important consideration in research is the *trustworthiness* of the data in relation to the credibility and dependability of the research. Credibility in the present study was enhanced by the prolonged experience in the school and classroom.

An outline for determining criteria to develop effective ethnographic studies was presented by Spindler and Spindler (1992) and has been adopted in this study. These criteria also ensure a higher degree of validity and reliability of results, and Figure 3.4 outlines these criteria in relation to decisions made for the current study.

<b>Criteria for developing effective ethnographic studies</b> (Spindler and Spindler 1992, p. 72)	<b>Strategies used in the present study to meet the criteria for an effective ethnographic phase</b>
Observations are contextualized, both in the immediate setting in which behaviour is observed and in further contexts beyond that setting as relevant.	Observations took place in a number of settings specific to the students. The observations on learning took place in both school and out-of-school learning contexts.
Hypotheses emerge within the context of the study.	The analysis was inductive, which allowed for the hypotheses to emerge within the context of the study.
The observations are taken over time, are prolonged and repetitive.	Observations took place on a weekly basis over a school year and across multiple settings.
The view of participants is explored through a variety of procedures such as interviews, work samples etc.	The participants' views were sought during Phase One of the study, and continued during Phase Two through interviews and the collection of work samples.
Elicit the knowledge of the participants to understand the sociocultural knowledge they hold to make sense of the behaviour and communication.	Informal conversations were carried out with the students during learning tasks to gain an appreciation of what they thought they were doing at the time when <u>engaging in learning activities</u> .
Instruments, codes, schedules, interview schedules and so on should be generated <i>in situ</i> as a result of observation and ethnographic inquiry.	Interview questions were often recorded during observation periods to use in subsequent interviews with either the students or the teacher.
To make the implicit and tacit knowledge of the informants explicit to the reader.	This is attempted through a description of the results and discussion using multiple data sources.
Within interview situations, the interviewer should not predetermine responses. Therefore interviews need to be largely unstructured.	Interviews were unstructured or semi-structured, and categories were not predefined.
Technical devices can be employed to collect live data.	This was not attempted. Photographs were taken throughout the year but the use of video recording was not considered appropriate for this study.
The presence of the ethnographer should be acknowledged.	The presence of the researcher is acknowledged throughout the data collection and reporting of results.

Figure 3.4. Strategies used in the present study to address the criteria identified by Spindler and Spindler (1992)

### 3.7 Overview of the present study

In order to address the research questions, this study employed phenomenographic and ethnographic approaches. There were associated techniques with each phase (outlined in Figure 3.5). Each section will be elaborated on in the following chapter, along with the rationale and justification for decisions made about specific details such as sample size.

The phases of the research move from the general to the specific, or from the decontextualised to the contextualised. For example, Phase One involves a larger number of learners than in Phase Two, and identifies students' conceptions of learning and self-assessment, while Phase Two focuses specifically on seven learners in order to examine the context of learning and self-assessment.

Phase One used a cohort of 26 students in year 7 of their schooling who were interviewed about their learning and self-assessment experiences using in-depth semi-structured interviews. Students talked about self-selected occasions in which they had learned something using both school and out-of-school examples. These interviews were audiotaped and transcribed for analysis. The outcomes of this phase form the basis of Phase Two, which looks at these conceptions in context through an ethnographic study.

Phase Two identifies learning in context through the examination of a number of learning activities that students participated in. Some of these learning activities were self-selected both in school and out-of-school. However, in general, the teacher selected learning activities within the school context. An ethnographic method within a sociocultural framework was employed. Seven students from the same classroom, who had taken part in the phenomenographic phase, were observed for half a day each week during the school year in school and out-of-school learning settings. The students were also formally interviewed, as were their teachers and parents.

<b>OVERVIEW OF STUDY: PHASES ONE AND TWO</b>		
	<b>PHASE ONE</b>	<b>PHASE TWO</b>
<b>Object of research</b>	Students' experiences and conceptions of learning and self-assessment.	Sociocultural context of learning.
<b>Paradigm</b>	<i>Symbolic Interactionism Interpretivist</i>	<i>Symbolic Interactionism Interpretivist</i>
<b>Methodology</b>	Phenomenography	Ethnography
<b>Method</b>	Indepth semi-structured interviews	Observations Interviews – semi-structured and unstructured Focus group interviews Record and document collection
<b>Participants</b>	Students n=26 (F=11 M=15) Year 7 (Form 1) Age range 10.3–12.3 years	Students n=7 (F=4 M=3) Year 8 (Form 2) Age range 11.8–12.8 years Class teacher Students' parents (n=11) Other teachers, tutors
<b>Setting of study</b>	School	School: classrooms, school grounds, library, swimming pool. Museum. Outdoor education camp. Student's home. <b>Community settings.</b>
<b>Length of study</b>	Average time of interview 45 mins (Range 35–60 mins). Student interviewed once. Interviews took place over three school terms (1996).	Weekly observations over one school year (1997). The length of time for each observation ranged between 1 and 5 hours.

Figure 3.5. Overview of study: Phases One and Two

### **3.8 Ethical considerations**

As with any participants, the students' role in research leaves them particularly vulnerable because they have the least power in the research process (Gitlin, 1994; Gitlin & Russell, 1994). In research involving school-aged participants, ethical considerations are very important. The issues outlined in this section pertain equally to phenomenographic and ethnographic work. The guiding principles for ethical consideration are described by Bogdan and Biklen (1998) as being:

- Subjects enter research projects voluntarily, understanding the nature of the study and the dangers and obligations that are involved.
- Subjects are not exposed to risks that are greater than the gains they might derive (p. 43).

To ensure the two main points of consideration raised by Bogdan and Biklen were considered, the current study sought and received approval from the Massey University Ethics Committee. However, even when such approval was gained, there was a need for sensitivity and truthfulness throughout the research process, and therefore clear guidelines were established in this research to ensure students were familiar with the aims and objectives of the research in order to make informed consent about participating in either Phase One or Phase Two. To ensure the students were protected, informed consent was gained from both the teachers and parents of the participating children.

#### **3.8.1 Informed consent**

Informed consent is an ethical issue and an integral and essential principle in any research endeavour (Bogdan & Biklen, 1998; Cohen & Manion, 1994; Eisner, 1991). As Cohen and Manion (1994) stated, "the principle of informed consent arises from the subject's right to freedom and self-determination" (p. 350).

Within longitudinal fieldwork it is particularly critical to gain informed consent because the participants are exposed to the research process over an extended period of time. Punch (1994) believed that informed consent is "unworkable in some sorts of observational research" (p. 90). Some of these include covert observation, experimental research involving deception, and where participants provided informed consent to take

part but where they were not always aware of what data were being collected (Cohen & Manion, 1994).

Frankfort-Nachmias and Nachmias (1996) described four elements of informed consent: competence, voluntarism, full information and comprehension. *Competence* refers to how capable the individual is in making the decision whether to take part in the research. Where someone is not considered competent, such as people with intellectual disabilities or very young children, Frankfort-Nachmias and Nachmias (1996) argued that it is appropriate for parents or guardians to provide the consent if the research is considered in the interests of the participants. *Voluntarism* refers to the freedom of participants to participate. In this study in particular, which primarily involved a school setting, it was important that neither teachers nor students felt coercion to participate because of higher authorities, such as the principal. It was clearly stated to the principal that both teachers and students needed to volunteer to participate willingly. As this school had been involved in previous research activities, the senior management in the school understood this key principle of voluntarism. Within the present study, all consideration was given to ensuring participants (teachers, students and parents) had *full information* and understood what the research involved. Therefore, comprehensive information sheets were developed for all participants, which meant information provided through personal meeting or information sheets, or both, included details about the research aims, research questions and the research process, as well as ethical issues such as confidentiality and right to privacy. Finally, *comprehension* is essential for informed consent because it assumes that the participants comprehend the information provided and the subsequent implications for taking part.

Within the present study, after the parent and student consent forms for Phase Two had been returned and signed, an additional need for consent emerged during the early stage of this second phase. During the first few observations, it became evident to the researcher that photographs of students engaged in activities would facilitate discussion with the students at a later stage, and would be an invaluable tool for understanding the data as they emerged. As consent for taking the student's photographs had not been obtained through the formal consent procedures, the parents were contacted by phone and asked for permission to take photographs of the children working. Global consent

was also sought from the students, and every subsequent time that a photograph was taken the student's permission was requested.

Some researchers have raised issues related to whether informed consent (as opposed to consent) can really be gained. For example, Eisner (1991) questioned the whole area of informed consent in research, particularly in the field of social sciences. Eisner argued that consent can probably never be informed, because the researcher can never really know the outcomes of research or its effect on participants. Furthermore, he argued that:

The notion of informed consent implies that researchers are able to anticipate the events that will emerge in the field about which those to be observed are to be informed. This is hardly a characteristic feature of field research. Researchers usually do not know what will emerge, except perhaps general themes, and therefore are not in a good position to inform those to be observed about what to expect (Eisner, 1991, p. 215).

In the present study therefore, procedures were set in place to minimise this issue. These procedures included developing clear information sheets to inform parents and students about the research and ensuring that students felt comfortable enough to ask questions throughout the research process, either during the interviews or during the observations. As this study involved young learners, the notions of confidentiality and informed consent were introduced to the students using children's language and were simplified to facilitate meaning (Gollop, 2000). For example, the use of the word "private" was used to help explain the notion of "confidentiality".

### **3.8.2 Confidentiality and Right to Privacy**

There are ethical and political issues associated with fieldwork (Punch, 1994). It has been argued that to learn about fieldwork the researcher needs to "get out there and do it" (Punch, 1994; Woods, 1992). The impact of the researcher on the context, the participants and the other members of the setting needs to be carefully considered. The ethics of fieldwork primarily involves the issues surrounding the researcher when *in* the field, and later when using, interpreting and publishing the data collected. These issues include the relationship the researcher has with participants and others, access to information and how this information is used, and associated issues of friendship, betrayal, confidence, trust and discretion. Within this study, a good working

relationship was established with the classroom teacher, and the other teachers within the syndicate. A positive and trusting relationship was developed with the students.

Ethical issues in fieldwork include anonymity, confidentiality and the participants' rights to withdraw from the study at any time (Frankfort-Nachmias & Nachmias, 1996; Kvale, 1996). The identity of the participants can be protected in a number of ways. In the present study, the data were stored in a locked and secure location, all participants were given codes for the storage of data, and pseudonyms were used in reporting the results. As this study was longitudinal, the students were continually made aware of their right to withdraw or their right to decline to take part in any portion of the research. This was achieved through always asking student permission before collecting any samples of work, asking students for permission before taking a photograph, and requesting their permission (after receiving teacher permission) before any interview taking place with them during classtime. In addition to this, consistent with Kvale's (1996) recommendation, the students were informed that the informal interviewing that took place during fieldwork was confidential.

At no time did the researcher become complacent or assume "rights" over the student involvement in any way. The students themselves became increasingly confident and trusting of the researcher and were able to make comments such as "*don't photograph me on this side as I have a coldsore*". In another example, the student (Peter) notes his right to confidentiality when he was asked by the researcher for a piece of his work. Peter's response was given in a lighthearted manner "*they're confidential, right?*" before handing over the work. Other examples involved a student requesting a portion of his taped interview to be deleted, and another student requested the tape be turned off during his interview for a few minutes while he spoke "off the record". Throughout the observations within the current research, the researcher came to know the students and therefore developed awareness of their needs. For example, during observations that involved groups of students, the researcher became sensitive to when it was appropriate to leave the setting, particularly if a student appeared reluctant to participate because of the researcher's presence.

One ethical issue inherent in ethnographic research, is determining what level of intrusion and influence in the lives of the participants is acceptable. While the objective is to be as least intrusive as possible, situations can arise where the researcher could

inadvertently alter the course of a day for a participant. It happened in the present study when the researcher had gone into a student council meeting because one of the target students (John) was a school counsellor. These meetings were held once a week and John had indicated he attended regularly. However, at this particular meeting John was not in attendance and the teacher, who knew John was a target student, suggested that he was collected from his class. However, as this fieldwork took place in the student's natural school setting, the researcher decided not to have John summoned, as this would influence the natural flow of John's day, and would be an example where the researcher influenced the outcomes for John.

When working in a school situation, the ethnographic researcher comes into contact with a number of people on the school staff. These can include librarians, administration staff, teacher-aides, caretakers, art teachers and teachers from other classes. Interactions occur with people during times when the researcher is in the staffroom, hallway, library, playground and when accompanying students from class to class. A variety of ethical issues are raised through the general interchange of ideas and greetings with these people. Are these conversations considered data? Have these people given consent for their thoughts to be used and analysed? Through gaining an insight into how these people think about the school, can these be used to formulate ideas about a school culture? From the early stages of this research undertaking, it became clear that information would be available to the researcher from more avenues than expected. These informal conversations were not used as a data source, but provided a general context to help the researcher understand more about the general school culture. As the fieldwork progressed, the researcher became increasingly known within the school, which had the corresponding effect as the level of trust increased of providing further information or access to data (Neuman, 1997). As Neuman's Access Ladder indicates, the more time in the field, and the greater level of trust developed between researcher and participants, the greater the access to sensitive information.

While this chapter has explored the theoretical framework for the study, and the ethical considerations of involving students, the following chapter outlines more specifically the methods taken across the two phases.

## Chapter 4

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### Methods: Techniques and Procedures

*Not only are methods the most unremarkable aspect of interpretive work, but a focus on methods (techniques for gathering data and analyzing data) often masks a full understanding of the relationship between method and inquiry purpose (Schwandt, 1994, p. 119).*

As Schwandt (1994) points out, discussion on methods masks the deeper issues inherent in the relationship between method and inquiry purpose. Within the present study, the research approach (i.e., phenomenographic or ethnographic) is defined by the purpose of inquiry, which influences the techniques used. For example, an interview in the first phase that uses phenomenography, is quite different from an interview in the second phase that employs ethnography. Therefore, this chapter will explore the techniques and procedures used in relation to the methodology adopted for each phase. The techniques associated with the first phase using phenomenography will be outlined, followed by the techniques and procedures for the ethnographic work undertaken during the second phase.

#### 4.1 Phenomenographic methods – Phase One

As the aim of the first phase involved identifying and exploring the phenomena of learning and self-assessment, phenomenographic interviews were used. This involved individual indepth interviews with learners of a similar age cohort. However, before any interview took place, ethical approval, entry into a school and the selection of students were required. The following sections will outline the procedures taken to get entry into the school, to select the students and to gain informed consent from participants, their teachers, and their parents. The development of the research instruments (interview schedule) and the interview process will then be discussed.

#### 4.1.1 Entry into the school

An intermediate school in a provincial city with a roll of over 600 students (years 7 and 8 students) was chosen to be approached for this study. This school was selected because it is large and draws on a number of primary schools from different socio-economic areas in the geographical region. As the school had a large roll, it enabled the researcher to interview students from a range of ethnic groups, ability levels, who had experienced a range of teachers within the school.

In New Zealand, all schools have a decile ranking intended to represent the socio-economic status of the school's community, and range from 1 (very low socio-economic status) to 10 (high socio-economic status). The selected school had a decile ranking of 9, although the students came from a large catchment area and therefore a high decile ranking of the school does not necessarily reflect the economic status of individual families within the school. The school had a mixed ethnic group of students, although they were predominantly New Zealand/European (78%), with 10% Maori learners (Maori are the indigenous people in New Zealand), and 12% consisted of a range of ethnic groups including Pacific Islanders, other European, Indian, Chinese and Asian.

The Massey University Ethics Committee approved the research proposal before the research started. When approval was gained, an interview took place between the researcher, the principal and the deputy principal of the school to discuss the research questions and methodology. While senior management agreed with the research in principle, both the principal and deputy principal discussed the research with the school Board of Trustees, and with the teachers, before confirming that the research could take place in the school. After the ethical considerations and management considerations were approved (by both the Massey University Ethics Committee, and the school management), the researcher talked to the teachers at a staff meeting and explained the process. This enabled the whole school to have information about the research and to feel satisfied as a staff that it was an appropriate study to take place within their school. As teachers were required to help with student selection, it was necessary for them to believe that the study was worthwhile.

Between 25 and 30 students were required to be interviewed, to fully explore the conceptions of learning and self-assessment. This number would allow confidence that the conceptions were representative of this group of students, and that this number of participants was consistent with other phenomenographic studies (Dahlgren, 1995; Prosser, 1994b; Svensson, 1994b; Trigwell, 1994). To achieve this number it was decided that the students should come from three classrooms, as each classroom had between 30 and 35 students and it could not be guaranteed that if only one classroom was chosen, all students would want to take part. It was decided that three classrooms would participate to spread the number of students across the classrooms, which would make it more likely that the students would be representative of a range of abilities and interests (the classes were not streamed). This would also ensure that there was a spread of students who had experienced a number of different teachers within the school. Therefore, only three teachers were needed to help with the process of student invitation, and they volunteered willingly.

A general information sheet (Appendix B) and a letter to parents (Appendix C) were given to the three teachers assisting with the dissemination of information. The teachers gave the students a package to take home that included: the information sheets, the letter, the consent forms for the parents/caregivers (Appendix D), and the consent form for the student (Appendix E). All interviews were to be taped and transcribed, so this information was outlined to parents and students to help them decide whether to participate or not. Those that did not agree to having their interviews tape-recorded would not have been chosen to participate, as it was an essential part of the research methodology. As all parents and students readily agreed to the recording, this did not become an issue. Both parents and their children needed to provide consent before the interview took place. Before each interview the researcher accessed both parent and student consent forms, and at the time of the interview asked the student if s/he was happy to go ahead with the interview. The researcher demonstrated the recording equipment with each individual student before beginning the interview.

The second phase of the study, discussed later in this chapter, required further consent from the school, teachers, parents, and students, and these issues will be addressed separately.

#### 4.1.2 The participants

A sample of 26 students from three different classrooms (11 female and 15 male) in year 7 of their schooling were interviewed. The selection of participants in Phase One was determined by the research question and associated methodology, in that it needed to be an identified and specific group of students. As indicated in chapter 2 (section 2.9), studies on students' conceptions of learning and self-assessment have not been undertaken with years 7 and 8 students. A preliminary study had been carried out before the start of the main study, and sampling at that stage involved four groups of students (5 years, 9 years, 12 years and 17 years). This preliminary work identified that learning in out-of-school settings played a predominant role in student learning and self-assessment. As out-of-school learning is noted for the rich experiences for the learner (Lave, 1996; Moll & Greenberg, 1990; Resnick, 1987, 1989), and for the successful nature of learning (Ceci & Roazzi, 1994; Säljö & Wyndhamn, 1993), it was essential that such experiences could be explored in the second phase of the study. Therefore, it was important to include in the first phase of the study students who were prepared to allow a researcher to follow them in out-of-school learning activities during the second phase. It was also important to select an age group who could articulate their experiences of learning and who had a number of years experience in school-based learning. Year 7 students were chosen to take part in this phase of this research because of their ability to articulate their understanding of learning and assessment, and there was a greater likelihood that the researcher could follow them in out-of-school activities. Year 7 students had 6 years of school experience on the whole, and had on average another 5 years of school before them. Therefore, they could reflect on their learning in a more in-depth way than younger children.

As Phase One employed a phenomenographic approach, it was important to involve students from one year group rather than a wide range of ages and class levels across primary and secondary schools. Also, as the students entered intermediate school for 2 years (years 7 and 8), there was the opportunity to follow up a small group of them for Phase Two of the study during the following year. Criteria for final selection included that the students were in year 7, that they represented a range of academic abilities, and that there was a gender balance. All students who expressed an interest across the three classes were interviewed. The three teachers advised that these students represented a range of abilities and interests. The interviews took place during one school year (1996)

and each student was interviewed once. The students ranged in age from 10 years 3 months to 12 years 3 months.

#### **4.1.3 Procedures**

The interviews took place at the school to minimise disruption for the students, and were scheduled during class time as teachers believed the interviews, which discussed learning, were appropriate to take place during school time. Also, neither the Massey University Ethics Committee nor the researcher wanted to take up student time during their breaks.

An interview room away from classroom activities was used for all interviews. However, the actual interview room changed over time, depending on available free space in the school during each visit, and included empty classrooms, library, staffroom, and resource rooms – all of which were vacant during the time of the interviews. The three classroom teachers and the researcher worked together to negotiate times for the interviews. This consultation with teachers was necessary to avoid any conflict with important school events or classroom programmes. When the researcher collected each individual student for the interview, the student was given the choice of coming at that particular time or choosing an alternative time if they wanted to remain involved in a particular activity. This provision of “choice” was important to students as it avoided any possible negative reactions about withdrawing them from favourite activities. The students were eager to participate and willingly went with the researcher to an interview room at the allocated times.

The students were interviewed in private without their teacher or other students present, and the information that they provided was not made available to either their parent(s) or their teacher. All students were informed that the tape recorder could be turned off at any stage during the interview process if they felt uncomfortable with being taped. There was only one instance when a student requested to have the tape turned off for a couple of minutes while he discussed an issue regarding another student in his class where he named the other student.

The interviews began with the researcher putting the student at ease, thanking them for sharing their ideas, demonstrating how the tape recorder worked, and explaining again

the purpose of the interview and the research. The length of time taken for the interviews averaged 45 minutes, and ranged from 35 minutes to 60 minutes. This was dependent on both the speed of the children's utterances and the amount of information they wanted to share.

#### **4.1.4 Development of the interview schedule**

As discussed earlier, a preliminary study was undertaken before the beginning of the main study, which assisted in decisions related to the age of participants, focus of study (learning and self-assessment), including school and out-of-school learning settings and identifying some questions to trial.

The preliminary study explored students' conceptions of learning and assessment, and used a story, *The Giving Tree* by Shel Silverstein (1964) with the new entrants and year 5 students. This story was chosen because it was one the children were unlikely to have heard before, and it had been used in previous research with a group of 6-year-old Swedish and Chinese children (Pramling, Asplund Carlsson, & Klerfelt, 1993).

The story was read to the children, and at the end of the story they were asked: "*Did you like this story? Did you learn anything from this story?*" (or) "*Can you tell me something you learned from this story?*" The questions then moved on to "*Can you tell me something you have recently learned?*" The story was not used with the older students who were asked "*Can you tell me something you have learned this year?*"

The preliminary study highlighted the challenges associated with engaging 5-year-old children in reflecting on the process of learning. However, they were able to describe their experiences of learning, and identified learning in terms of school rules and regulations, as well as learning within the curriculum areas of mathematics and reading.

Learning outside the school context was clearly evident with all students. The year 12 students related to the paid employment that they all had after school hours. The year 12 students' examples of learning while working in the supermarket, postal system or cleaning, provided an insight that learning for students became more comprehensive when identifying several contexts for learning. Therefore, the interview schedule

developed a question that sought views on learning out-of-school and the question *“do you learn in places other than school?”* was used.

After the preliminary study was completed, a small pilot study involving four students in year 7 was undertaken to trial the specific questions for the main study. The pilot study helped determine the order of questions used. This provided a means to test questions and examine the implications of asking them, which helped develop a semi-structured interview schedule (Appendix F). An example of one entire transcript can be viewed in Appendix G.

The pilot study highlighted the importance of first asking questions about learning, before moving onto assessment-related questions. The areas of learning that the students were actively involved in enabled the student to feel at ease in the interview and become comfortable with the interviewer before more challenging questions were asked, such as *“how do you know when you have learned?”* or *“who knows you have learned first – you or the teacher?”* By this stage of the interview, the students were able to reflect on their answers and consider the question carefully without feeling a need to answer “correctly”.

The pilot study also showed that the initial question was important because students often came to the interview unsure of its purpose. A new question was therefore established that elicited the students’ understanding of why they were at the interview. This provided feedback to the researcher, but also gave the student an opportunity to open the discussion on learning. For Phase One of the main study therefore, all students were initially asked *“when you decided to take part in this interview about learning, what sorts of things did you think we might talk about?”*

#### **4.1.5 The interview process**

All interviews began with general questions such as *“When you decided to take part in this interview about learning, what sorts of things did you think we might talk about?”* or *“What sorts of things came into your mind when you heard I wanted to talk to you about learning?”* This followed with a question that was couched in an extensive and inclusive context – *“Can you tell me something you have learned this year?”*

All students began the dialogue with reference to a school context, and more specifically a classroom context. When they ventured to think out of the classroom, it was usually about another school-based setting, such as the playground, school swimming pool, library or class trip. If the students had not talked about learning outside school, a question such as “*does learning happen anywhere else?*” was used to open up the possibilities of exploring learning in out-of-school settings.

Throughout the interview process, the meaning the students attributed to the topic discussed was continually explored. This was important because the researcher could not assume that what the student referred to as “learning” or “assessment”, “boring” or “fun”, or “cool”, was understood by the researcher in the same way. Attempts to encourage further exploration of these themes involved requesting examples of what the student was saying, asking them directly what they meant by certain things, and creating links between events (such as home and school learning), and checking for clarification from the student. Often a concept was explored in different and multiple ways. For example, when exploring issues on assessment, students were often asked how they knew *when* and *how* they had learnt, and whether they knew before the teacher (or parent) that learning had occurred.

The students were relaxed during the interview phase, and many reported enjoying the experience. The entire interview was transcribed, rather than specific segments of the interview, as occurs in some cases. The transcribing process involved providing as accurate a record as possible of the discourse that took place between the interviewer and interviewee (Powney & Watts, 1987). The interviews in Phase One were coded from F01–F11 (for female participants) and M01–M15 (for male participants). The numbering occurred in relation to the order of interviews for females and males.

## **4.2 Ethnographic methods – Phase Two**

The focus of this phase aimed to explore the activities that constitute student learning in a number of settings and from the learner's perspective. As learning occurs in a number of learning communities and sites (Lave, 1996; Resnick, 1987; Rogoff, 1995; Sutton & Tomley, 1980), and as assessment procedures within a school setting impact on approaches to learning (Crooks, 1988; Gipps, 1994; Nicholls & Hazzard, 1993; Pollard et al., 1994), the approaches to exploring student learning needed to encapsulate both the activity in a number of settings (through observations), and the meaning the students gave to the activity (through interviews and informal ongoing conversations). To appreciate fully the diverse range of learning experiences and to identify how these learning contexts influence students' conceptions of learning and self-assessment, the techniques employed for Phase Two of the study involved observations and informal ongoing conversations, as well as semi-structured interviews in both school and out-of-school learning environments.

### **4.2.1 The setting**

The second phase of the research took place in the same school where the phenomenographic interviews took place during Phase One, as the researcher wanted to follow up a small cohort of students who held representative views of student learning and self-assessment. Other observations took place in a number of settings including out-of-school learning situations that were school based (e.g., museum visit, school camp, abseiling, sports), and out-of-school learning situations that were not school based (e.g., Saturday morning netball, judo, dancing, trampolining).

### **4.2.2 The participants**

As the researcher had already completed Phase One of the research in the school the previous year, it was a smooth transition for Phase Two. Permission from the school had already been granted for the whole research project (Phases One and Two), but nonetheless, toward the end of Phase One, the principal and deputy principal were approached about the continuation of the research the following year. The school remained happy for this to occur, and so the three teachers were consulted about approaching students to take part in Phase Two.

The sampling for Phase Two was deliberate and directed. Conscious choices were made about the participants in order to choose a cohort of students who could inform the second set of research questions. Strauss and Corbin (1990) stated that in discriminate sampling, “a researcher chooses the sites, persons and documents that will maximise opportunities for verifying the story line, relationships between the categories, and for filling in poorly developed categories” (p. 187). In this research study, the participants were chosen on the basis of their being able to inform the researcher how students approach learning and self-assessment tasks in different contexts. The students in all three classes held representative views of learning in Phase One and were involved in a number of out-of-school learning experiences. As only six to eight students were required for the second phase of the research, and given that this phase involved intensive weekly observations, it was expedient that all students be selected from one classroom. At one level this was a pragmatic choice in that the weekly visits could take place within one classroom. More importantly, at another level, the decision was made because it would allow the researcher an overview of one system within a syndicate of teachers. The school was organised around clusters of four classrooms called “syndicates”, and a group of teachers worked within one syndicate involving four classes. Conducting the research within one classroom also provided a variety of learning settings and teachers, because the students in one classroom went to classes within the syndicate for different subjects. The criteria for selection included:

- The students identified a number of learning environments both within and outside the classroom setting;
- a variation of conceptions of learning and self-assessment was evident across the selected students;
- the students were in the same classroom;
- the students wanted to take part; and
- a representative range of academic abilities was evident across the selected students.

The researcher initially chose to approach eight students (four male and four female), but one of the male students had subsequently been withdrawn from the class and had been moved to another syndicate within the school. This student was not included because of the logistics of involving a different syndicate and group of classes than the other seven students and their teachers. It was considered that the remaining seven students (three male and four female) would provide the researcher with insight into

learning and self-assessment in a range of contexts. These students were now year 8 students, and their classroom teacher was the same teacher who had taught them the previous year. The teacher was a male with 3 years teaching experience.

Letters, information sheets and informed consent sheets were given to the seven target students, their teacher and parents (see Appendices H, I, J, K and L). All agreed to continue working with the research, and the researcher explained to students and the teacher how it might impact on their lives. It was explained that weekly visits to the school by the researcher would occur and that interviews with the students and their teacher would take place. In addition to this, students and parents were informed that parents would be interviewed and observations would take place in learning situations outside school. All students and their parents agreed to take part and signed the consent forms.

The students in the classroom who were not taking part were given a letter to give to their parents informing them the research was taking place, but that the researcher would neither interview nor collect work samples from their child (see Appendix M). During the first observation, the researcher spent time explaining to the class how her role would differ from other adults they had experienced in the classroom, such as teacher, teacher-aide, student teacher and parent help.

Limitations in the second phase of the study centred around the selection of the school and the sampling of students. The school had a decile ranking of 9 and therefore the results may not be representative of low socio-economic schools with a low decile ranking. Further research would need to identify whether the results are representative for this group of students.

Five of the seven students were European/New Zealand, one student was Maori, one student was South African, and one student was from a European country. While these students were not representative of all ethnic groups within New Zealand schools, they did represent a typical mix of the ethnic background of students across schools. In relation to the sample, only a limited range of settings were visited, based on the interests and activities of the selected participants. Some culturally specific contexts and settings such as kapa haka (Maori cultural club incorporating traditional song and

dance activities) were not represented, nor were unstructured informal activities that students take part in such as fishing, cycling or roller blading.

### **4.2.3 Procedures**

The researcher visited the school on a weekly basis during the school terms (from February through to December, 1997), and included visits to out-of-school learning activities that resulted in a total of 30 formal observations and 31 formal semi-structured interviews (teachers, parents and students), as well as countless informal discussions.

Parents of all seven students were interviewed during the year when some observations of their child had taken place, and with further observations to be completed with their child. A formal, semi-structured interview about their child's learning experiences took place at a time and place convenient to them (see Appendix N). One parent chose a school setting and a time scheduled 1 hour before the school finished for the day so that she could pick up her child after school, and in all other cases the parents opted for their home. The interviews took place mainly during the evenings when parents were freed from work duties. A total of nine (9) parents were interviewed formally. Five of the interviews involved only one parent (four mothers and one father) and two interviews involved both parents. All except one parent allowed the interview to be audiotaped. The students were not involved in the parent interviews. However, in one interview the child was present at his request, and with his parents' approval. During some observations, particularly in out-of-school settings, parents were met again for informal discussions that were not audiotaped. The other parent of two of the seven students (a mother and father) who had not been interviewed formally were met at this time, and informal conversations were held with them. Eleven (11) parents of the seven students were therefore interviewed, either formally or informally, about their child's learning experiences during the course of the research process.

On three occasions during the school year (March, June, December), the class teacher was interviewed about the learning and self-assessment activities that were being used in the class. These interviews were unstructured, and the December interview was audiotaped and transcribed (see Appendix O for an extract from the interview). On

many other occasions, informal discussions took place with the teacher, and with other teachers within the school, including the other three teachers in the syndicate team. Notes were taken during these informal discussions and typed up on the computer later that day.

The students were interviewed twice during the year on an individual basis about their own learning and self-assessment experiences in the school and out-of-school contexts, and on a further occasion during a focus group interview with all target students present. The individual interviews were semi-structured and the questions were based on seeking clarification and meaning from observations that had taken place in the classroom. All these interviews were taped and later transcribed. On numerous other occasions during the observations, both at school and out-of-school, conversations were held with the students about the activity they were undertaking. During these times, notes were either taken at the time, or were made straight after the conversation for later reference.

Photographs were taken of students participating in learning activities, and samples of written work, selected to illustrate aspects of the current observation, were collected during the year with parent and student permission. These were generally taken when further illustrations of student work or products were required, and these photographs or samples of work were used in two ways: first, they were used as data to record events and activities in which the students were involved; and second, the photographs helped the student recall learning events during the interviews held with them at the end of the year.

The teachers were obliging and helpful throughout the research process, and in return, the researcher was flexible with times, and interview places, and was able to change plans quickly and with minimal fuss when teacher plans changed or when school events prevented planned observations. The central location of the school allowed the researcher to visit at a moment's notice and neither the administration nor the teacher wanted to have organised times and dates for the researcher's visits. Therefore, while the researcher randomly selected the days and times for the observations, they occurred on a weekly basis. The times and days varied from week to week, and the teachers wanted a "come as you find us" approach. However, when there were planned interviews with the teacher, the researcher always prebooked these with the teacher at a

time convenient to him, so that they could be fitted around playground duties, bus duties and other functions performed by teachers.

The length of time in the field was one school year (11 months). This was considered most useful, because it enabled the researcher to spend time with the learners from their first term in the school year (February) through to the end of the school year (December).

#### **4.2.4 The observation schedule**

Within the present study while non-participant observations were primarily employed, minimal involvement by the researcher in some activities was required. Decisions about the level of involvement occurred in relation to the actual learning tasks. A greater degree of involvement occurred at the level of engaging students in discussion about what they were doing. Therefore, on a continuum, the level of participation within the current study ranged from minimal (when observing students sitting tests or performing in a dance class) to a degree of involvement (when engaging with students during their learning activities when appropriate). Throughout the year in the classroom and in out-of-school learning activities, students and teachers alike knew the researcher.

While the observations were unstructured, a consistent format was used throughout the year. As the focus was on student approaches to learning and self-assessment in different contexts, the focus was not on whether the learning was formal or informal, but rather on the *context* of learning. Initially, the distinction was not made in the observations as to whether it was “school based” or “out-of-school based” because this was determined through the meaning the student attributed to the learning activity. Initially, the researcher had a clear view that out-of-school learning was differentiated by whether it was informal and community based, but it became obvious through the observations that some students identified with activities such as visits to the museum, and archery at school camp in the same way that they approached learning while learning to dance or learning judo. It would, therefore, not have represented the learner’s experiences to identify arbitrarily which settings were school based before an observation took place. By the end of Phase Two, it became clear that out-of-school learning activities involved those that were under the jurisdiction of the school but distinct from the usual school settings (such as a museum visit, swimming, activities at

school camp) as well as learning experiences within the community (such as dancing, trampolining, and judo). Activities that were largely classroom based and were clearly part of the school curriculum, such as mathematics, technology, science, reading, were identified as school-based learning settings.

Each observation took on average 3 hours, with some ranging between 1 and 5 hours. The researcher used an A4 spiral bound notebook throughout the year, detailing notes, events, conversations and questions during each observation. The observations went from the general to the specific. The first priority involved understanding the context of the school-based learning. This required a general understanding of what the students were involved in at school and the types of learning activities that made up a school day. This included school rules and systems, as well as classroom rules, routines and teacher expectations. As part of this, student expectations and peer expectations were observed, as were assessment systems and the target student's role in these activities. This was followed by more specific data collection on actual learning and self-assessment activities in a more in-depth way. When asking students questions, collecting pieces of work, and observing the approaches students took to these activities, a different lens or plane of analysis was used. Finally, there were observations where the changes in students' learning as a result of their participation in the learning or self-assessment activity were examined through interviews and observations. The observations included an examination of the community of learning in which these learners took part; the interpersonal participation between learners and others in these communities; and the influence this participation had on learners. Within each different setting, it was important to identify each aspect so that learning and self-assessment could be explored within Rogoff's (1995, 1996, 1998) three planes of analysis.

At the end of each observation, the notes were typed on a computer before the next observation. All observations were numbered, and dated, and specific information was recorded at the start of each observation. This included the day and time, weather conditions, location of the observation, the student focus, the purpose of the observation, and the activity in which the student was involved. See Appendix P for an example of one of the typed observations.

Within the present study, while the research aims were to examine years 7 and 8 students' conceptions of learning and self-assessment in different contexts, the actual themes were not predetermined before the fieldwork (Bogdan & Biklen, 1998; Taylor & Bogdan, 1998). These emerged through the research process, and through the analysis of the data collected (Delamont, 1992).

#### **4.2.5 Exit from the field**

Just as the entry into the field is an important phase of the research, so too is the way the researcher exits. The exit point may be determined by the saturation of information gained, or by more pragmatic reasons such as depletion of research resources. It has been suggested that when the exit point does come, the researcher takes time to break attachments and begins a slow withdrawal from the field (Merriam, 1998). This leaving time may be difficult because of the rapport developed with the participants (Bogdan & Biklen, 1998). There may also be researcher anxieties that perhaps something was missed or that new data may provide further insight (Bogdan & Biklen, 1998). At the end of Phase Two of the present study, after all the observations had been completed, the researcher visited the teachers and students and thanked them for their participation. A summary of the procedures used during Phase Two is outlined in Figure 4.1.

	<b>Outline of procedure (Phase Two)</b>	<b>Rationale</b>
<b>Participants</b>	7 (year 8) students (3 male, 4 female) Class teacher (male) Teachers in school Parents (n=11) Tutors	Held representative views on learning. In same classroom Took part in Phase One Teacher happy for researcher to be in classroom throughout the year.
<b>Interviews</b>	One formal semi-structured interview with each child's parents.	Parents interviewed to provide background on child's learning history.
	Informal conversations with parents.	When meeting parents in out-of-school learning contexts, informal conversations important to gain rich background data.
	Three formal semi-structured interviews with teacher.	Formal interviews with the class teacher important to clarify issues and gain an understanding of the learning environment.
	Informal conversations throughout the year with class teacher and the seven students.	Informal conversations essential to check continually for understanding and meaning.
	Formal semi-structured interviews with the seven students. One formal unstructured focus group interview with the students.	Formal interviews employed with all students to follow up questions arising through the fieldwork in a systematic manner.
	One formal unstructured focus group interview with syndicate teachers.	Syndicate teachers work as a group and provide theme work throughout the year. An overview of their philosophy useful to place learning in context.
	One formal semi-structured interview with each of the three syndicate teachers from Phase One.	Individual interviews with the teachers to gain an insight into the variation of techniques (e.g., assessment) used throughout the syndicate.
<b>Observations</b>	Classroom observations once a week (ranging from 1 to 5 hours) through the school year.	Observations of student learning the key technique used in Phase Two to learn about the context in which students learn.
	Observations at students' clubs with 5 of the students. Observations at out-of-classroom activities – swimming, museum trip, library, school camp.	Observations in out-of-school settings provide examples of different settings and contexts, different expectations and motivations about learning.
<b>Worksamples</b>	Taken during the year.	To provide another source of data.
<b>Photographs</b>	Taken during the year.	To provide a vehicle for student reflection on learning in subsequent interviews.

Figure 4.1. Procedures used during Phase Two



## Chapter 5

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### Phenomenographic Results

*The unique assumption of phenomenography is that if you analyse people's statements about the same phenomenon and compare the fundamental ideas these statements are based upon you will, in general, find a rather limited number of well recognisable understandings (Hasselgren, 1996, p. 67).*

This chapter describes the results of the phenomenographic phase and outlines the categories of description for learning and self-assessment that arose from the examination of the interview transcripts. The categories of description are outlined first for students' conceptions of learning, and second for students' conceptions of self-assessment.

#### 5.1 Data analysis

In total, 26 students (15 males and 11 females) from three year 7 classes in one intermediate school were interviewed. The time taken during the interviews with the students ranged between 35 and 60 minutes. As already discussed, the interview time depended on both the speed of the student's utterances and the amount of information each student wanted to share. The interviews were audiotaped and transcribed verbatim, and each transcript was read a number of times before the identified categories emerged from collective analysis. An example of one entire transcript can be viewed in Appendix G. This transcript was chosen because it represented a range of conceptions of learning and self-assessment. Transcripts were coded by identifying the gender of interviewee (F or M) and the sequence of interviewing for each gender. The males were coded from M01–M15 and the females from F01–F11. Where direct quotes from the students are used in this and subsequent chapters, the code number of the participant, and the page number of the transcript where the quote occurred are recorded. For example, F10:8, refers to a quote on page 8 from the transcript of a female participant who was the tenth female to be interviewed.

This phase of the research set out to identify students' conceptions of learning and self-assessment. The research questions associated with this phase are primarily concerned with the first two research questions: *What are year 7 students' conceptions of learning? What are year 7 students' conceptions of self-assessment?* The categories were developed through analysis without any predetermined framework, and involved an iterative process that occurs through working closely with the transcripts and sorting emerging categories. This was completely done by hand, and no computer software package was used for the interpretation, sorting, coding or management of data. The transcripts were read a number of times looking for increasingly inclusive meanings of the phenomenon working first with the categories of learning that emerged, and second with the categories of self-assessment. In many cases, students may have been talking about learning something while, at the same time, explaining how or when they knew they had learned (an example of self-assessment). When this happened, these examples were explored in terms of the students' conceptions of both learning and self-assessment.

Extracts from the student interviews will be provided as examples of the categories of description. These categories of description are derived from the range of student experiences rather than the individual case. Therefore, no one student's conception comprises a category and a student may hold more than one conception or aspects of a range of conceptions.

The categories of description move from least sophisticated and least inclusive views to most sophisticated and inclusive views, which results in hierarchical models for both the conceptions of learning and conceptions of self-assessment.

The following two major sections – *students' conceptions of learning* and *students' conceptions of self-assessment* – outline the results by presenting the categories of description from the least to the most inclusive conception.

## **5.2 Students' conceptions of learning**

This section outlines the conceptions of learning held by the students. In all, there were five distinct categories of description from which five conceptions for learning are inferred. Each category will be described and explored with extracts from student

transcripts, the letter R is used to indicate the researcher (Roseanna), and the letter S to indicate the student.

### 5.2.1 Acquiring knowledge (A)

The least sophisticated category involved students viewing learning as the vehicle with which to gain knowledge. This category of learning was held by students who believed they started school with a near empty brain that required filling. As one student stated, “*you don’t know anything when you’re born*” (F06:13). Interestingly, some students believed their brains were filled through learning, while others thought the brain, and therefore knowledge, increased through age. However, even those who believed an increase in knowledge increased as a function of age still held the view that their brain required “filling”. Within this category, students described learning as a process of “getting to know” some school-related content that they believed increased with age. However, while students attributed increase in knowledge to age, they acknowledged the role of learning in the acquisition of this knowledge. This appeared to be the least sophisticated view of learning, as “gaining knowledge” was a component inherent in all subsequent categories, and acted as a pre-requisite for the more inclusive conceptions.

Learning was characterised by the students who largely held conceptions in category A, as a means to an end 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, 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: *Um I think it’s, well, like, because 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: *Um, oh, there’s two halves, one half is used for moving your body and then the other half is for your learning, um it’s kind of empty until you fill it up.* (F09:5)

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, oh a ... 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. (F09:15)*

Data from the interviews supported the notion that category A is the least sophisticated way of viewing learning because it is categorised by the notion that learning is a process of gathering outside knowledge to “fill the brain” or “store in the brain”. Students who held conceptions within this category tended to believe that teachers’ knowledge is imparted to them to the extent that they (the student) will no longer have to think about it. As the following student stated:

*Well, everyday they [the teachers] keep putting something in your mind and then they keep enforcing it and then they start with something new at the end. So after about a week you don't have to think about it. (M01:3)*

The role of the teacher was considered to be one of providing students with the knowledge, facts and information required to learn. Students also had a belief that it was this knowledge that would be evaluated at a later stage. Teachers were the primary source of information, although books, computers and the library were also seen as information providers. This conception of learning was categorised by students seeing themselves and the information as separate – with the learning, via the teacher, the vehicle with which to join the two.

Students expressed these views of learning when they talked about learning in school. There were no conceptions at this level (A) expressed by students when referring to experiences outside of school.

### **5.2.2 Memorising and reproducing (B)**

The next category of learning involved the students viewing learning as a process to reproduce information. This was mainly achieved by students’ attempts to memorise and reproduce the acquired knowledge. This category is considered more sophisticated than category A because students have moved from just acquiring knowledge in order to “fill

their minds” to developing a strategy to retain the knowledge. For example students reported, “*You’ve got to remember how to do things, and the right way*” (M09:6); “*You know the answer...you actually know it because it’s in your brain so you don’t forget it*” (M10:1); “*With school work your brain thinks ‘right we’ll call up the memory’ and they write it down on the paper inside your head*” (F08:9).

This category of learning is characterised by students’ beliefs that learning is remembering something. Many of the students identified the retention of knowledge with learning, and as one student explained when she learns something she “*can write it down on the paper inside my head*” (F08:9).

- S: *I’ve learnt my 12 times tables, um ... my seven times and eight times.*  
R: *Can you tell me how you learnt your 12 times tables?*  
S: *I just went over and over them and for about an hour each day.*  
R: *What do you mean by going over and over them?*  
S: *Like um ... you write 12 times 1.. two twelves ..like that.*  
R: *How does that help you learn it?*  
S: *It makes you actually remember them. Um, well, you know when you learn and you, um like, you know the answer it’s actually, you actually know it because it’s in your brain so you don’t forget it. (M10:1)*

This student was later asked to explain remembering because it was a feature of his description of learning. He associated remembering with storing information in his brain which “*gets bigger and bigger*”. The student believed that when he wants to remember information it has a specific place in the brain. He goes on to explain:

- R: *Can you tell me what remembering is, then?*  
S: *Well, it’s just you store it in the back of your brain.*  
R: *Oh, okay. How much storage space do you have?*  
S: *As much as I like.*  
R: *How does that work?*  
S: *Um, it just gets bigger and bigger every time.*  
R: *So your brain’s getting bigger and bigger?*  
S: *Yeah as well as me.*  
R: *Oh, I see, it grows with you?*  
S: *Yeah. It’s just like my sister’s best friend Jenson, he is, like, 7 foot and he’s still growing. He’ll be able to go Michael Jordan slam dunk.*  
R: *So you keep remembering things by storing it in the back of your brain?*  
S: *Yeah. Like when I just want the information I just think of it and it comes out into the front of my brain.*  
R: *Oh I see, so when you use it, it goes to the front of your brain?*  
S: *Yeah. When I don’t use it, it goes to the back.*  
R: *Well, where does learning fit into that?*  
S: *It fits on the right-hand side. (M10:9)*

Another student reiterates the importance of remembering in learning.

- S: *Well, it's quite different because in this one I'm just memorising in a way and in my head I'm actually trying to learn it and keep it in my head.*
- R: *What part are you trying to keep in your head?*
- S: *The actual, like, all the maths problems and spelling, and all of that. I've got to remember how to spell, got to copy it out and everything.*
- R: *Is remembering important in learning?*
- S: *Yeah. It's a lot important in learning.*
- R: *Why's that?*
- S: *Because you need to remember like, you need to remember what  $8 \times 9$  is and all that, otherwise you will never succeed...Sometimes at night when I can't get a maths problem I just keep on saying it in my head. I write down on a piece of paper at night and I read it and I say it out loud, then I cover it over and say it in my head, then I say it out loud and see if I get the answer right. (M09:6)*

Some students wanted to remember material for the purpose of gaining entry into different mathematics groups. For some students, a higher mathematics group was associated with status and the opportunity to learn more. One female student explained that remembering in spelling was important for spelling tests, and she later explained that remembering was also important for mathematics where entry into the higher group was her goal.

*Remembering is important because, sort of like if you're doing a spelling test and you're studying that word, then you can remember it and spell it in the spelling test. Because if you want to get into a high class in maths then you've got to remember all the stuff that your teacher has taught you. Everything about the subject in maths that you're, in maths, that you're learning. (F11:2)*

Students often noted that the purpose of remembering was to recall information for a test or evaluation. Within this category, students viewed the purpose of remembering as important for test taking, and it was generally not associated with increasing understanding. As the student in the following example explains, the knowledge that the teacher was going to evaluate was the motivation to remember what had been learned. This reinforces for the student that learning is about reproducing information.

- S: *When something, like, sometimes when we're doing a test, I just remember – like for the Sioux I had to remember that they lived on the plains and they used to be farmers so I just kept saying it in my mind.*
- R: *That they lived where?*
- S: *That they lived on the plains in America and they used to be farmers that lived on the hills.*
- R: *And why did you have to know that?*
- S: *Because the teacher was going to ask us questions the next day. (M03:3)*

This student earlier described learning as the process of “*shoving it in your brain*” so that when the teacher asks a question you know the answer.

S: *Yeah, because, you can, like, the teacher will ask you a question and you can remember it, so you've shoved it in your brain, you've learnt it – you understand it.*

R: *Oh, you understand it?*

S: *Yeah. You know what's going on, sort of thing, like you've learnt it – it's stuck in your brain. (M03:2)*

Students reported that listening and practising were strategies used so that the information could be repeated at a later date (usually for a test). One student noted, “*you just practise for what you want ..in everything.. you just practise, and then you just try and try harder*” (F07:12). Within this category, the notion of memorising appears to hold two main functions for the students. One is to learn “more” regarding a specific skill or concept, and the other is to remember or retain the information, both of which students use to serve as an indicator of learning.

R: *How do you fill it up?*

S: *By listening to the teacher and practising what you've learnt, like in maths, if you practise what you've learnt that day you might, you fill it up more and if you practise your times tables and get them all down. (F09:5)*

However, memorising does not always work, as one student who used this approach noted. She was explaining that she practised something until it was “fixed” in her mind. When she described this to the researcher, she realised that she couldn't recall the information she wanted. The example below elaborates how she had thought she had learned superlatives in English, but when she attempted to explain them to the researcher she found she was unable to. This illustrates how students who view learning within this conception do not realise the importance of understanding or applying the information in order to retain it. They have a belief that retention of knowledge is based on repetition and memorisation. As the following student stated, she thought she had superlatives “*fixed in my mind*” (F05:2).

R: *I'm just trying to figure out how you go from not knowing anything about superlatives to actually knowing about them?*

S: *Okay. Well ..... you .....you.. (laughs)*

R: *Do you know what I mean?*

S: *Yeah, I do – I just can't....Well ....I did.. I worked on them so, I did the worksheets the teacher gave us and I got it fixed in my mind, that you know, that what it does, what they and that they .....now when I think about it I can't remember what they (superlatives ) are! (F05:2)*

Students used memorising and repetition as a means to increase their ability to recall information. A common feature of the student interviews was their belief that “knowing it off by heart” in a variety of curriculum areas, such as science, spelling, mathematics, and Physical Education came about through practice and repetition. As one student stated:

*You're supposed to practise and practise and practise until you really remember it. Like, if you learn your times tables, and you can't just learn it once and forget about it or else you'll never have them in your head. Like, you have to kind of practise and practise and practise and then you'll know it off by heart. (F09:7)*

The following extract illustrates how a student believes the knowledge is already within her, but it is through reproducing it that she comes to learn. While she does not refer to “practice” in the same way that the student in the above extract does, she identifies with the need to remember information (“*just stays there and waits until you need it*”), and then “*let it out*”. In the following segment of the interview, the researcher is attempting to establish what the student meant by an earlier comment that learning was “taking it in”.

R: *What does that mean 'taking it in'?*

S: *Um, I think it means that you've, it's like eating food, you take it in, like, your mouth and later on when you use it, it will come out. So it's kind of taking it in but instead of going out straight away it will stay there for a long time, I think that's what happens if you learn about something, I think you take it in, but it sort of just stays there and waits until you need it.*

R: *Where was it in the first place before you took it in, where was this knowledge?*

S: *I think it's actually quite a strange question because I have to actually guess, I think that it actually all it ... I think just before I was born I think that it was actually all in there but everything I was going to learn was already in there but I had to actually experience and have it told to me, learn it, and I think it was, I think some of it I learnt when I was quite young and I still use it now and, like different ways to draw and different ways to paint and ...*

R: *So you're saying you were born with this knowledge?*

S: *Yeah. I think you were born with the special knowledge that you, I think you're actually born with a special knowledge of how to crawl and how to sit, how to actually eat, I think you were born with that ..that you actually ... that you actually understand it all then. Because when you think about it, you actually ... knowledge is like a cloud, a bubble, you don't even know what it is, it's just like words that you just take in later on but, um ... I think you always have a knowledge when you were born to do stuff that some kids can't do, um ... and so I think you always have it there and then when you're told it you're kind of, you take it in and then remember it and then you might let it out but you always keep it there. (F10:9)*

Listening was viewed as a significant part of learning and, apart from practising, students mentioned listening as a useful strategy to “get better” at a learning task. For example, one student used a metaphor of a tape recorder taping the information, as a way to describe the function of learning. In the following extract, a student describes how learning is an ongoing process of taking in information. The importance of “listening and taking in the information” as described by this student, is typical of the students who mainly identify with learning as increasing one’s knowledge.

- S: *Well, you wouldn't really know that you're learning, you're just, like, doing it in your mind. Your mind's like a tape recorder like that we're on now, and it just takes in the information and you don't even really know you've got it. That's how I find it.*
- R: *Yeah, that's interesting. So like your tape recorder's on, and so things are going in all the time are they?*
- S: *Yeah.*
- R: *How do you know if you're recording something then?*
- S: *You're mostly recording something all the time because, like I'll remember talking to you now so I've basically recorded it because I've remembered I've been talking to you.*
- R: *And where does it all go?*
- S: *Into your mind. Well, when you teach you're doing, you're like making someone learn when you teach. When you're learning you're, like, you're not the person teaching them, you're the person like listening and taking in the information, so you're the tape recorder. (M11:2)*

While students within this category of learning, discussed the need to memorise and recall information, some students also introduced the idea of “getting better” at their work by increasing the speed and accuracy of the recall. This was particularly evident when students talked about spelling and mathematics. The following example illustrates how a student used races in mathematics (a strategy established by the teacher), to determine whether he was getting better. This student used his ability to recall information at greater speeds, as his indicator for learning.

- S: *Maths, I've gotten better at my times tables.*
- R: *And how did you get better at your times tables?*
- S: *We do a race with, um, times and we put 10 numbers along the top and 10 down the side and we have to fill in all the gaps in 5 minutes.*
- R: *Oh. So it's like a race?*
- S: *Yeah, and when you've finished you say 'stop' and the teacher gives you your time.*
- R: *So what are you trying to do?*
- S: *Trying to improve your times tables and learn them so you can, um, say them faster, know them off by heart.*
- R: *What's the difference between knowing something off by heart, like your times tables, and learning your times table?*

- S: *Knowing them off by heart you can, someone can just ask you a question and you can just say it like that, and if you don't know it off by heart you take a while to give them an answer.*
- R: *So you'd still know it, would you?*
- S: *Yeah, but not as well, or you might get mixed up with other times tables.*
- R: *So is the whole idea of you doing these times tables real fast to increase your speed?*
- S: *Sort of, and to increase how well you know them.*
- R: *How do you find out how well you know them?*
- S: *Well, if you get a time and then the next day you get a faster time that means you're learning them. (M02:3)*

It was also evident that one of the strategies students used to remember and retain information involved mnemonics. Again, though, the value of understanding the material was not evident. For example, in the following extract the student recognises the importance of remembering phrases and words. He describes how he remembers certain words, but does not recognise the importance of understanding the concepts. He explains that during a series of lessons on health he is introduced to unfamiliar words. Through his mother's help he remembers words such as "vulva" through words he is more familiar with such as "revolver". However, his idea of memorising assists only in so far as knowing the word. The idea of understanding the subject matter not only holds little priority or relevance to this student, it is not seen as the focus of learning. The focus of learning is remembering the word.

*Well, when they're telling you something, you can write down notes and then go home and memorise it or you can just say the word over and over again in your mind until you get that word and you already know what it is so...what I do is I just get, well, when he says something about puberty I, um, memorise words so I know what I'm talking about and then, um, and then I know exactly what it does because of what the word is and what you're associating with. And then that's how you learn things, and then they say 'oh no, don't you mean it's a different name?' or something, like fallopian tube and I couldn't get that right and then mum says this and then, um...what I remember words by is from other words...Like what about a vulva, I remember it by revolver for a gun, because a revolver is an easier word to remember for me. (M06:5)*

### **5.2.3 Using your knowledge (C)**

This category is considered more sophisticated than categories A and B because students have moved from acquiring knowledge and developing a strategy to retain that knowledge, to applying it to a particular task. While components of categories A and B, are precursors to category C, the distinguishing feature of category C is the student's belief that they are applying their skills and knowledge to new problems.

For these students, learning has a focus on applying their existing knowledge in order to complete activities so being able to complete a task is seen as learning. As noted by the student in the following extract, the need for tests and evaluations that is so evident in categories A and B, is also part of this conception of learning, but does not have such a strong focus. Classroom-based tests were referred to by the students who identified learning within this category, but only in so far as these tests provided a vehicle for them to demonstrate their knowledge. For these students, while class tests in different subject areas were used by them to “identify or confirm learning” by using their information in an intentional way, it was particularly important to be able to do the task. The student in the following example differentiates between sitting and completing a test, and using the information in a practical way. It was using the information that identifies his view of learning with category C because, as he noted, he wanted to see if what he learned was “real”.

*You've got to go through tests and see whatever you've learned, if it's real, [but] you've got to be sure that you can do it as well. (M01:10)*

Another example is provided by a student who explains she knows when she has misspelled a word. She does this without requiring a test to indicate whether the word was correctly spelled. While this example identifies self-assessment, it actually demonstrates her link with learning, and more importantly, to category C.

*If you're spelling something, you know the word just looks wrong. Even if you've just got one letter in the wrong place you know it just doesn't look right. (F01:2)*

The application of skills and knowledge for purposes other than recalling factual information for tests is apparent within this conception. Students are better able to identify their skills to increase their ability to solve problems and complete activities within the classroom. The purpose of learning has shifted from learning to recall knowledge for tests or to complete a task, to one where the student applies his or her knowledge in a more conceptual manner. In association with this shift in purpose, students view the *process* of learning in a different way. They are no longer focussed on memorising or remembering information, but rather, using it in an intentional way for some purpose. As the student below explains, she learns to spell a word through *using* it rather than through memorising the word. This is in contrast to learners who viewed learning within category B, where spelling is associated with memorising.

*Like, for spelling, then you usually know if you've learnt the word but quite often you know, I forget the spelling word after about a month but, um .. it depends. Because, say I'm doing a project and ... on something, and I use that word often,*

*then I'm learning by that way and then I've usually learnt it by writing a whole page using the word in every few sentences. And I've learnt it then. (F01:12)*

The next example also demonstrates how the student is beginning to understand that his prior knowledge helps with further learning. It is particularly apparent that the learner is now feeling more in control of the learning process and he does not see learning as collecting information “out there” as is apparent in earlier categories A and B.

*Well, when you memorise things, you actually learn, you still learn because you already know that and you develop knowledge for yourself, and that is what's going to help you more – knowledge, getting information and starting to use it and because, if you get that knowledge you can use it in other situations. (M06:7)*

One student used the metaphor of a filing cabinet. During the interview, when he was talking about using his knowledge, he described the notion of whether or not it was in his filing cabinet.

*It's like a file, one of those file cabinets and you, like, you just pull it out of your mind like a file cabinet and you pull something out... [R: if you can't pull it out?] that means you haven't learnt it. (M11:5)*

The application of knowledge is also evident in the way students felt that having attained it, they could use it in a number of ways over time. As the following student explains, he can use it again, and as with other students, he identified applying his learning with a better life.

*Once I know I've achieved it, I know that I can do it over and over and over again...and then I know I'm going to get a better life. (M09:14)*

The conception that learning is the application of knowledge is demonstrated further in the following example. This student had learned to use a protractor in mathematics. While she explains that her teacher demonstrated the use of it, it was through completing worksheets that she learned through doing. Her phrase of “*I'm on my way*” is consistent with other students holding this conception. They are aware of being able to do something, but have not necessarily understood the underlying principle of what they were doing or why they were doing it. This feeling of being “on the way” is an indicator that the student is progressing to another conception of learning. In contrast, a student who primarily holds category B, would at this stage consider they had learnt all about protractors and would not have an awareness that their understanding was limited. For the student in the following example, who identifies here with a conception of category C, she explains that she knows about protractors and can demonstrate the use of them, but realises there is more to learn.

- S: *Um, when we were told how to use a protractor and then they'd just sort of show us where we'd put it, and it would come up with all the lines coming off the protractor, and it would show you how many degrees in an angle.*
- R: *Who's 'they' that were showing you?*
- S: *Um, well, we had, I was in Miss Penny's class because we cross-grouped for maths and we had a 3rd year teacher who was also helping, so, like, Miss Penny would do it for the day and then tomorrow the college teacher would have to do it or, and the teacher would get on with her own or his own work.*
- R: *So when the teacher showed you, is that when you'd learnt it?*
- S: *Yeah, and then we'd get a worksheet and we'd have to try it out ourselves and that.*
- R: *Okay and when you go and try it out yourself, did you know that you'd learnt it then?*
- S: *I was just sort of making sure that I knew how to do it in case someone put it in front of me and I had to do it straight away or something.*
- R: *So how do you make sure that you can do it?*
- S: *You just answer the questions and you just, at the end they are marking and if you get them all right you think, yeah I'm on my way. (F07:1)*

The same feeling of being “on the way” is expressed by the following student who talks about “getting to know”. In this next extract, the student explained that she learned mathematics through being able to perform a task and using her knowledge.

*Um, when I can hear the teacher and I can, like, feel that I can, getting to understand what she's telling me, then I can get to the point of understanding. Like, if she's telling you that you have to multiply the sum by that, and of course I know that, but I'm just explaining, I go 'oh, that must be the answer', and, like, if I call it out and then that's how I can feel it's really working, that I'm getting to know what I'm doing. (F02:7)*

Students also talked about learning in out-of-school settings, and there was evidence that students held this conception of learning (C) in places other than school. In out-of-school settings, students described how the ability to perform a task provided an indicator of learning and was conceptualised by them as “learning”.

Students also distinguished between compulsory learning at school, and voluntary participation in out-of-school or home learning situations. As the student below describes, you can say “*I don't want to do this anymore*” at home, but not at school.

- S: *Because you're, well, at school some of the time it's boring and some of the time it's fun and whenever you're at home it's always fun because you like doing it because you can just give up on it whenever you like – so if it's boring you just say 'I don't want to do this anymore' and you just give up on it and do something else.*
- R: *But you can't do that at school?*
- S: *No, you have to do it otherwise you'd get a detention or something like that. (M03:11)*

As one student stated with regards to out-of-school learning activities, *“you’ve got to look forward to it and you’re not doing it because someone wants you to do it. You want to do it because you want to”* (M01:5). Another student also alluded to voluntary participation in other settings, when he explained that he didn’t enjoy school because it wasted his time and his freedom. As he stated, *“I don’t really like school. It takes 6 hours of your day up and then you’ve got homework, that’s wasting all your time, your freedom”* (M11:11).

In the following extract, a student talks about responsibility and taking more responsibility for things in her care, such as clothes, personal items and her health. In her example, she refers to situations at home and school. She identifies that she is not considered “responsible”, although her example of looking after an egg suggests she thinks otherwise. The student explains how her mother has talked to her about taking responsibility, but although she understood what was required of her, it was more difficult to apply. Her example of looking after a raw egg as part of a school task, shows how she relates the notion of responsibility in a school situation to a specific school-related task, although she is talking about it in a more general sense.

*Well, I get a lot of lectures about responsibility because I’m not very good at responsibility like taking care of my clothes and stuff, and, like, I always lose stuff, so sometimes you get lessons at home about some things, like, you don’t get ... the only time we ever really have a lesson on responsibility at school we had to all look after an egg for a week, um, and if it smashed or crashed or something like that it means you’re not very good and you have to get another egg and do it for another week until you can look after it. We did that and most people, my egg was actually all right because some people just left it in their desk for the whole week but I took mine home because I thought it was really fun, because I like doing stuff with animals and stuff like that and so I took mine home and looked after it and looked after it and so it survived. Some people actually chucked theirs away and pretended that their dog ate it and stuff like that so but there are lessons like um ... responsibility and, um ... well, when you get old you have to look after yourself. At primary school you don’t get taught about food, or how you do your hair, or how to look after yourself, and at primary school you don’t, you don’t care what’s going to happen to you when you if you eat too much fatty foods and then when you get to intermediate and you’re fat or you’re chubby you find out why, so um ... you kind of need, you’d need your parents in that way to keep you healthy and to look after you. (F10:4)*

Learning in out-of-school settings involved students in more practical learning experiences. While one student was describing shopping in her community, she explained that in contrast to feeling she was acquiring a product while shopping, she did not feel she acquired anything, apart from knowledge, through mathematics at

school. She makes the distinction between “doing” something, which is consistent with category C, and “acquiring” something (category A). Interestingly, she does not hold in high regard her acquisition of knowledge in mathematics at school.

*If you get to do something. Like if you learn about money and stuff and you've got enough money to learn how much it costs to buy it, well, then it's good because then you get something. Because, like in maths you don't get actually something, you just get the knowledge – that's real boring. (F06:11)*

One student explained how she had learned to make a fence on her father's farm. When asked how she knew she had learned to make a fence, she explained that she measured her learning on her ability to hammer in nails without hitting her thumb. Therefore, she identified the specific skill of “hammering” as her indicator for learning and was intent on applying her knowledge of “*keeping your wrist still*” to practise skills associated with hammering. However, she has not indicated that she understands the finer details associated with making a fence, as might be seen in a more sophisticated conception of learning.

R: *What about at home, when you said you're learning at home, what sort of things are you learning?*

S: *Well dad lives out on the farm, so you're learning how to get on with the sheep and build fences and stuff like that.*

R: *Really, have you learned to build a fence?*

S: *Yeah kind of.*

R: *How did you learn that?*

S: *Because dad's a builder and so he just builds fences around the place and I help him.*

R: *What sorts of things have you learned out of that?*

S: *Just skills, how to, and timing and that, and keeping your wrist still, and when you're hammering, you can't move your wrist.*

R: *Really, so there's quite a skill to hammering?*

S: *Yeah.*

R: *When you learnt that, how did you know when you've learnt it?*

S: *I didn't hit my thumb.*

R: *How can you sort of see progress, how do you figure out progress?*

S: *Well, when we're making the fences like at the start I kept hitting my thumb and stuff but at the end I could do it without hitting my hands. (F04:8)*

In general, students who discussed learning in out-of-school settings, saw beyond the acquisition of factual information. This is partly because of the way in which they undertook their leisure activities and out-of-school learning, which are usually practical in nature and, in the students' words, fun activities.

#### 5.2.4 Understanding (D)

This category is considered more sophisticated than earlier categories because students who hold conceptions within this category have a different aim for learning. No longer are they merely seeking to memorise (category B) or apply the knowledge (category C), but more specifically they identified the need to seek meaning in information and knowledge. Learning has gone beyond the acquisition or recall stage, and also beyond the applying the knowledge stage, to wanting to engage actively in understanding the new information, and to linking it to what is already known and understood.

Students reach a point of conceptualising learning as understanding, and for the student in the following extract, this means understanding both what knowledge she has, and the relevance of that knowledge to the task. This is a more sophisticated conception than the previous conceptions because the student is demonstrating an interest in a deeper approach to learning. In contrast to previous conceptions, students are not interested in memorising work for the sake of recalling factual knowledge. Earlier conceptions, particularly those in categories A and B, are categorised by students believing that knowledge is “out there” to be collected, retained and later recalled. Students within category D are beginning to understand that they have a great deal of knowledge already, and learning is about developing that knowledge.

Within this conception, students have an inherent interest in the task they are performing, and relate it to their own understanding of the activity. In the following extract, a student discusses the importance of using interesting words in his poetry writing. He explains that he uses the dictionary to find their meanings in order to use them in a particular way in his writing. During the interview, this student had earlier explained that books help him to learn, and the following extract illustrates that books introduce him to interesting words, and that he finds out what these words mean, and then uses them in his own poetry.

*R: How do books help your learning?*

*S: Like, more interesting words and all that, like, interesting words and how to like what something means.*

*R: Okay. What would be an example of one of those interesting words?*

*S: Like extraordinary, slithery and all those interesting and long words. Because one word had about 30 letters in it .. and they're really, like, hard to say.*

*R: So when you've learnt something like extraordinary or slithery, what do you do with those words?*

*S: It's like I go and check in the dictionary to see what they mean and then, like, I remember them if they're, like, good words, like good to use. So, like, when I write a poem or something and then I can, like, use them. (M04:8)*

Another student provides an example of enjoying new challenges in the context of mathematics. As the following student explains, difficult problems and challenges are not seen as a threat or hard work, but rather as an opportunity for further learning. When he identifies the “form 5 & 6” level, he is referring to years 11 and 12 students.

*I normally get into the highest group and, um, when they get into it at the end of each one he gives us a problem out of a book for form 5 & 6 maths and we've got to try and work that out, and that's really fun and exciting because if you can do it, you're about as good as a form 5 & 6. (M09:10)*

Within a school setting, students become accustomed to completing a lot of tasks with similar functions. This is particularly so in mathematics and spelling, where work is often repetitive and focuses on practising certain skills or rules. In fact, when students are asked to complete unnecessary amounts of examples in mathematics or written language, they report learning as “boring”. As the student in the next extract notes, he does not need to complete a lot of examples to develop his understanding of a task. He had introduced the notion of boring, and the following segment from the interview picks up with the researcher's attempt to ascertain what the student means by boring.

*R: So what do you mean by boring?*

*S: Like when you just have to do reading and just write out answers for it, when you know that they're all going to be right exactly and you know everything all right and you, like, just revision but it's too much revision when you know what you're doing all the time, it's too much to do and it's too easy.*

*R: Ah, so boring learning is when it's too easy?*

*S: Yeah, really too easy. Really, really, really easy. (M09:8)*

Students who conceptualise learning as understanding, also discussed the need to learn concepts that held special interest for them. The following student shows how interest in understanding a problem or a culture is evident in this conception. He was asked what he would like to learn, and he replied more about the ancient Egyptians. Note that his interest was not on factual information, but on understanding what life was like during this time.

*S: Mmm, how the ancient Egyptians lived, but without the years and dates and stuff like that – just how they lived. Yes.*

*R: Why does that interest you?*

*S: I just find it amazing how they made a civilization so early and then later after that, like middle ages, it was just destroyed I mean, because it was*

*harder in ancient Egypt than, say, middle ages somewhere in Europe.  
(M05:11)*

Students also identified “learning as understanding” in learning activities involving out-of-school settings. The need to memorise at a superficial level, or to recall knowledge at speed are not features of this conception of learning. Instead, the ability to perform while understanding the intention behind the task is more typical. Students in out-of-school learning experiences were able to identify with this conception because the practical activities associated with these contexts encouraged the application of skills and knowledge.

Within out-of-school learning contexts, practice was associated with increased performance and ability in a similar way to the strategy students used to regurgitate information in academic work. However, this is a more sophisticated view of learning than B, because students used “practice” as an intentional strategy to facilitate performance or understanding, rather than merely to regurgitate facts. For example, this student talked about how he practised in cricket in order to acquire the skills.

- S: Yeah, they showed us some stance, and they got us into pairs and that, we just practise it, just practise to stance.*
- R: So you were shown how to do it, and then you practised it?*
- S: Yeah.*
- R: At what point did you learn to do it?*
- S: When they were showing us how to stance, but, then after that we just practised it over and over again, so it's just something that we'd do without thinking about it.*
- R: Oh, right. How did you know when you got it right?*
- S: Because we'd do a thing when we'd have to lift the bat up and the person at the back would hold up their hand...and the other person would go directly behind and hold their hand up, and then they'd lift bat, and if you could lift it up to the right height and touch the hands, not going off to the side or anything and do that um, 9 out of 10 times. (M08:3)*

Another example involved a student describing learning to count to ten in Japanese for his judo class. It was evident in the interview with this student, that he needed to understand the words to use them correctly, and therefore he needed to learn them through repetition, but *with* meaning. He also identified for himself when he had learned them, rather than relying on a test. He monitored his own performance at the “practice” as described in the following extract, where he also explains learning the words through “repetition”.

*Well, I just...first, after a while, when the trainer counted, I just thought I knew it, and then I repeated it at home, and, then when it came to the practice next day I checked if I got it right, and I did. (M05:1)*

The following extract illustrates how a student explains learning tactics in sport. While he acknowledges he learns from others, he also identifies his own role in the learning process. This is an integral feature of this conception of learning, because understanding is related to knowledge of self. He explains how he learns fair play, tactics and rules of a game and incorporates these into *manoeuvres*. Therefore, he demonstrates a more sophisticated view of learning than performing the task (category C), because this student has to translate all these rules and tactics in an intentional manner and with understanding, in order to “beat the player” or “score a goal”.

- S: *Yes, I like sport when I'm doing sport and when I'm learning in sport I learn about fair play and what, um, the rules are of the sport, and you learn tactics all the time.*
- R: *What are tactics?*
- S: *They are things, they are actually moves that you can use or manoeuvres that you can use for to try and beat the player or try and, you know, score a goal in soccer or something.*
- R: *Who teaches you tactics?*
- S: *You actually basically teach yourself or you can just get, like if you're watching TV, the professionals, you can get tactics off them and you learn off the TV as well, because you're learning new tactics all the time. (M06:8)*

The following extract provides another example within the context of speech. This is a learning activity outside school, where the student is explaining that he recites in different ways according to the type of genre from which the extract comes. This provides another example where a student demonstrates understanding, rather than simply attempting to reproduce or memorise (category B); or merely recite (category C).

- S: *With poems, they give you a poem so I have to read it over and over, and then you think how you're saying it. If you're saying it full on to the audience and if it's narrative or a ... I can't ... but there's narrative, that means you're telling a story or you're just saying out words. So, if what you're saying is narrative, you've got to think how you're saying it. So, I did another narrative but that wasn't facing the audience, you were behind this box because it's for the Hearing Association Cup. So, like, something you're um ... you have to imagine yourself on the radio, you have to say it in a different voice.*
- R: *How would it sound different?*
- S: *You've got to project the words a bit more with, um ... assonance or something, and you've got to really say them out, not too loud, but so they hear, it's got to be really crisp, you've got to hear every word. (M01:8)*

Goal setting was one way learners attempted to achieve personal direction and focus, and a sense of purpose in learning was noted as important by the students. As one student explained *“If you don’t set goals...you don’t really have any sort of...you can’t focus on what you have to do and you just do it without thinking. If you have goals you can plan what you’re going to do and do it as best you can”* (M12:16).

This category of learning also involved students conceptualising learning as involving *“teaching others”*:

*Learning means teaching yourself to do well and do better, preparing yourself for the future...it involves you teaching others as well, because you learn the skill and you can use it to teach others. (F09:11)*

One student explained how he supported a peer who had difficulty understanding work in class because he was able to understand the material. He explained that he often helped his peer and was *“virtually a kid teacher”* (M10:4).

Some students also recognised the importance of peers being used to facilitate the understanding of particular tasks, particularly when they could make sense of the material and could turn it into *“student-friendly”* language. Often students reported that they could not always understand the teacher but found their peers or siblings were able to describe concepts in ways they could understand. Therefore students reported learning directly from their peers, often because they found them easier to understand. As the following student explains, peers are often used when failure to learn from the teacher is experienced.

*First I probably go and ask the teacher and she’d write something up in my book and I’d try and follow that, and then I’d ask my friends, like, they’ve already figured the skill because the teacher hasn’t, like she’s the one who figured it but she doesn’t really use it at that time, so I ask them how they use it and what they’ve done to get the answer right, and they’ll tell you and then you just sit down and try to figure it out yourself. (F09:13)*

When the student above explained that she tries to *“figure it out”* herself, she is indicating the importance of understanding the material, after having it explained. So while her friends have already *“figured the skill”* and have explained it to her, she realises she needs to understand it or *“figure it out”* herself to have learned.

It is not always friends who assist with developing understanding through learning, it can also be siblings, as demonstrated by this student. She was having problems learning the remote control functions for the television.

*Well, my father taught me and my brother but I wasn't too sure, so my brother helped me too, he taught me, he showed me which buttons to press on the remote....Um, my father used big words which I didn't understand, my brother in his words was more my level, so he said 'well, you push this button, it's the channel button, so you press this one' and my father might have said 'well this button is ..it changes the channel' but my brother would've said it in a different way that I could understand it more. (F05:5-6)*

As she goes on to explain, the “big words” used by her father prevented her from learning, but the “words...more my level” as used by her brother, helped her to understand the process. She further states:

*I would understand it a lot more. My brain shuts off when I, when it hasn't seen something before or, like, it's something new and it doesn't want to filter in information about it, and if I know a little bit about it then I can listen and know more. (F05:6)*

This example shows how a student reacts to information that is incomprehensible, and how she needed some understanding of what she is learning in order to be ready to learn. When she feels comfortable about some aspect of the content, she explains that she can then “listen and know more”.

### **5.2.5 Different ways of knowing (E)**

The fifth category of learning, and the most sophisticated for these learners, was demonstrated by students who discussed learning as different ways of knowing, and as a means to develop a greater awareness of multiple solutions to problems and in so doing, prepare themselves for the future. One student explained that he learned to see things “in different ways” (M01:14) and is able to relate the learning to other subjects. While category D involved learners seeking to engage actively in learning material to seek meaning, category E suggests there is a more sophisticated view of using that meaning in different ways across different subject areas. Learning is viewed as exciting and fun, and there is a thirst of learning for learning's sake not seen in the previous conceptions.

In this category, students were no longer tuned into finding the one correct answer, or the one solution to a problem. Instead, they looked at the possibilities associated with

seeing things in different ways and different ways of knowing. There was evidence that they were interested in finding connections, finding similarities and differences in what they were learning. As the following student explains, he discovered there is more than one way to name a number. While in mathematical terms this may simply be “renaming a number”, for this student this realisation creates a new world for learning mathematics, and he sees the concept of a number in a different way.

S: *Well, then you have um ... more time to get it into your brain, and you find it easier instead of trying to just fix it in one day, well, then you can do it over ... you learn one thing and you can do it in different ways, not just learning one thing to do it that way.*

R: *Okay, can you give me an example?*

S: *Well, maybe doing fractions and you learned that three tenths can also mean the same as .3 or .30 and it can also mean 30 over 100 and it can also mean 30%. Like, most people, if they don't really know, they'd see it as three tenths could never be 30%.*

R: *So you could learn that thing and then learn it in different ways over a year?*

S: *Not really a year.*

R: *Over time?*

S: *Yeah. Just like one quarter, 25% is like one quarter, if you don't see that that way then it's not really.*

R: *How do you get to see it that way?*

S: *Well, over time ... well, you've got to know a quarter is something divided into four pieces. So if 100 was divided into four pieces you've got to see 25 and then it's 25% but, um ... if you just think 'how on earth could I get from 1 over 4 to 25 over 100?' and then you'd say 'how would you get 4 into 100?' and then if you multiply 4 by 25 you'd get to 100 and you multiply 1 by 25 is 25. (M01:11)*

In a similar manner as the previous example, this student later explained that you need to look at different ways of completing a task. He expressed the importance of not relying on having been taught something for his learning. The active role he placed on his own understanding is in marked contrast to earlier conceptions categorised by the type of thinking that “teachers talk and students listen in order to learn”. As the following extract outlines, learning is an active process that takes place between the learner and the teacher, not a function of the teacher talking. The student in the following extract discusses going beyond “understanding”, which is associated with category D, to testing different ways of doing something.

*Oh no, it just helps you but then you've got to help yourself by putting it in, and then you've got to practise by yourself in a corner or somewhere, you can't just say 'Oh well, now he's taught me I can do it.' You've got to keep writing things and testing different ways of doing it... Then that only happens because you understand it, and so understanding means that all*

*the help that's brought in is making you confident to know what you're doing. (M01:14)*

In the dialogue below, the student highlights the link between learning and understanding. His aim is to *understand* what he has learnt, rather than memorise or recall factual information. His conception of learning is generally within category E, as he recalls learning as a process of greater awareness because you know something “*thoroughly, you know all of it every single bit*” which can be related “*to other subjects*”. There is also evidence in the example of how the student is interested in seeing things in other ways, from different perspectives. Note also, his awareness of relating his learning to “*everything you do*”.

R: *Okay, so it's not just good enough for someone to tell you something but you actually have to ...*

S: *Understand it.*

R: *Oh you have to understand it?*

S: *Yeah.*

R: *Where does understanding come into learning?*

S: *Well once you reinforce it, um .. well, then you start to see it in different ways and then that happens, that only happens because you understand it and so understanding means that all the help that's brought in is making you confident to know what you're doing.*

R: *Okay, can you tell me the difference between understanding and learning?*

S: *Well, learning is just knowing something and once you know it, if you know it thoroughly, you know all of it every single bit, then you can relate it to other subjects and you can relate it to, um ... everything you do. (M01:14)*

Situations outside the classroom also involve learning that takes account of a variety of perspectives and viewpoints.

S: *I figure them out, um ... different ways, because when you, you've always got to see things at a different angle, like if somebody's got in a fight you look at both, um, things, you don't just look at one person.*

R: *Why's that?*

S: *Because everybody's got a different point of view and they might want to lie or just get out of trouble. Because I have been a mediator before so you have to listen to both different kinds of angles and all that. (M06:13)*

In discussing a game called “Risk” described by the student as “a strategy game”, one student identified the need to see “strategic direction” from the other player’s point of view. As he states:

S: *It's a strategy game, you have to conquer the world or something...you have these armies and you have a world map and you throw dice to see who wins and stuff like that.*

R: *Why do you like that game?*

S: *Oh, I find it interesting and it takes a long time, I like games like that.*

R: *Does it involve any skill at all?*

S: *Umm..no, I suppose it does a bit. Strategy skills and stuff, because a strategy game you have to know where you are going to attack and compare it [with the opponent], and probably realise when someone's going to attack and what he's going to attack. (M05:15)*

### 5.2.6 Summary

The categories of description were derived from the experiences of learning expressed by the students. The five main categories of learning that formed the categories of description are summarised in Figure 5.1. These five categories ranged from acquiring knowledge to seeing something in a different way. The least sophisticated category being A, and the more integrative and holistic category being E. A common question that represents the students' views for each individual conception is incorporated in the description for the conceptions in Figure 5.1. For example, the least sophisticated conception of learning (A) answers the student's hypothetical question *what do I need to know?* Similarly, the common question for the most sophisticated category of learning (E) is *what ways can I solve this problem?*

The continuum of learning conceptions showed that learning was believed first to be about acquiring knowledge from some external source (category A), and second to be the ability to reproduce that knowledge (category B). At a more sophisticated level, students believed learning was about applying the knowledge or information they had learned, and that improvement in learning was identified as increasing speed and accuracy of recall (category C). At a more sophisticated and inclusive level, students viewed learning as understanding, and connected prior knowledge to their learning (category D). At the most sophisticated level, students viewed learning as different ways of knowing; looking for multiple perspectives and of different ways of viewing a problem (category E).

On the whole students, referred to learning in school settings, and the prompt question "Does learning happen in places other than school?" was used to elicit discussion on other settings. In relation to this question, the students referred to three types of out-of-school settings. The first one involved structured learning of a school-related nature but not occurring in the school grounds. This involved school camps and out-of-school activities. However, the most prominent setting identified by the students involved structured learning that was not school related, such as judo, dancing, karate and art

classes. The other out-of-school settings referred to by the students tended to involve unstructured and unplanned forms of learning but where learning occurred nonetheless. These were activities at home such as fence making on the farm, caring for animals, looking after siblings, and learning to use equipment at home such as the remote control on the television.

Students who stated they were actively involved in out-of-school learning experiences, and who gave examples of learning activities in out-of-school settings, tended to hold more sophisticated conceptions of learning when discussing learning in out-of-school contexts. However, they often retained a view of learning within a school setting that represented a less sophisticated conception. This suggests the context of school-based learning encourages or facilitates particular views on learning.

The need to reproduce information in tests came through as an important aspect of school-related learning, and students were keen to memorise information so they could demonstrate their learning. In contrast, the out-of-school learning experiences described by the students had factors associated with choice, voluntary participation, and active participation. Students seemed less concerned about regurgitating information in these contexts, but more concerned about performing appropriately according to the context. To do this, they needed to understand what they were attempting to do, and it is perhaps this aspect of the activity that contributed to a more sophisticated conception of learning.

The more sophisticated notions of learning were represented by students who viewed understanding as an important attribute of learning (category D), and used this understanding to identify different ways of knowing, and to see things in different ways or to identify multiple perspectives when solving problems (category E). One of the main differences between these two conceptions of learning, and less sophisticated conceptions of learning (categories A, B and C) was the way in which students identified with, and used, prior knowledge. In the interviews, students who discussed learning as understanding or as identifying multiple perspectives, also talked about using the knowledge they had to solve problems or to understand the material. In the earlier categories associated with acquiring knowledge, reproducing material or applying the knowledge however, students tended to talk as if all knowledge was “new” to them, and did not refer to incorporating existing knowledge or experience.

<b>STUDENTS' CONCEPTIONS OF LEARNING</b>	
<b>A. Acquiring knowledge</b>	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 a common question: <i>What do I need to know?</i>
<b>B. Memorising and reproducing</b>	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 a common question: <i>What do I need to remember?</i>
<b>C. Using your knowledge</b>	Learning is viewed as the ability to apply 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 a common question: <i>How do I do this?</i>
<b>D. Understanding</b>	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. Practice is used by students as an intentional strategy to develop their understanding and skills further. Learning is viewed as involving teaching others, and peers are used to facilitate understanding. This category is characterised by a common question: <i>How do I use this information?</i>
<b>E. Different ways of knowing</b>	Learning is viewed as exciting. Students recognise different ways of knowing about things, and look for different perspectives when solving a problem. This category is characterised by a common question: <i>What ways can I solve this problem?</i>

Figure 5.1. Categories of description for students' conceptions of learning

The transcripts for all students collectively constituted the categories of description, and each student's view of learning was not necessarily restricted to just one category. Nevertheless, analysis for each student was undertaken to determine the most prevalent conception for that student in both the school and out-of-school setting (see Figure 5.2). As the students tended to express more than one conception within their transcript, the main conception that was used most often was identified within their individual transcript so that any patterns arising from the data could be established. Therefore, as summarised in Figure 5.2, the *main* conception held by each individual student is identified, but is not necessarily the most sophisticated conception for that student.

Students	Contexts used to express conceptions of LEARNING	
	School	Out-of-school
F01	C	D
F02	C	C
F03*	D	D
F04	B	C
F05	D	D
F06*	B	B
F07*	B	B
F08	B	B
F09	B	C
F10	B	C
F11*	B	C
M01	E	E
M02	B	B
M03	C	C
M04	D	D
M05*	E	E
M06*	C	D
M07	B	C
M08	D	D
M09*	C	D
M10	B	B
M11	B	B
M12	C	D
M13	B	C
M14	B	B
M15	A	B

\* denotes student selected to participate in Phase Two

Figure 5.2. Prevalent conceptions of *learning* identified for individual students

While in general, the students did not adhere to one conception of learning, but held several conceptions, 20 of the 26 students interviewed held one of the three lower conceptions of learning (category A, B and C) in a school context, and 16 of the 26 students interviewed held a conception of learning as either A, B or C in an out-of-school context. These conceptions were characterised by students viewing learning as the need to acquire and increase knowledge (category A), memorise and reproduce knowledge (category B), and the practical application of knowledge (category C). In a school context, 14 students held a conception of learning as A or B, six students held a conception of C, and six students held a conception of D or E. The picture is slightly different in an out-of-school context, where no student held a conception of A, eight students held a conception of B, eight students held a conception of C, and 10 students held a conception of D or E.

Students held a range of conceptions of learning, but in general tended to hold less sophisticated conceptions of learning in school settings. The out-of-school settings appeared to encourage a higher conception in the hierarchy of categories, which represented more inclusive or sophisticated views of learning. As indicated in Figure 5.2, 15 students retained the same conception irrespective of setting, and 11 held more sophisticated conceptions in out-of-school settings. Therefore, there is a tendency for students either to maintain their view across settings or to develop more inclusive conceptions in out-of-school settings. As an example, it can be seen from Figure 5.2 that F09 held a more sophisticated and inclusive conception of learning in an out-of-school context where she viewed learning as using her knowledge, whereas in a school context she identified more with learning as reproducing that knowledge. Another student (M15) held largely the least sophisticated conception of learning in a school setting, but held a more sophisticated view in an out-of-school setting.

These results highlight the variation that exists in year 7 students' conceptions of learning and show that when identifying conceptions of learning, students are influenced by the context in which that learning occurs. The students clearly identified with a number of learning contexts, but most specifically, school-based and classroom based learning. The way in which learning was assessed appeared to influence students' approaches to, and conceptions of, learning.

The following section explores students' conceptions of self-assessment, and seeks to identify how students know when they have learned something.

### 5.3 Students' conceptions of self-assessment

This section outlines the conceptions of self-assessment held by the students. In all, there were six distinct categories that outlined the conceptions for self-assessment. Each category will be described and explored with extracts from student transcripts to illustrate the meaning behind the conceptions. The categories will be described from least sophisticated to most sophisticated and inclusive.

#### 5.3.1 Seeking an opinion (A)

Self-assessment for the students who largely held category A, was a process of being told they had learned; and students sought *confirmation* of learning from other people in order to identify or self-assess that they had learned. These students used the information they received from parents, teachers or others to self-assess their work. Parents and teachers were the main source of providing feedback to learners about their performance on a task or activity.

As noted in the following extracts, students place much reliance on being told that they have learned.

*It's, like, she [teacher] just says 'good work', and she just writes a comment there. So you can just, like, know or else if she says, like, 'oh, you're not supposed to do this' and you just, like, know...it's wrong. (M04:9)*

*The teacher tells you if it's right or not. (M10:3)*

Within this category, students rely on the feedback from teachers and parents as the main means of gathering information about whether they have learned. This feedback, according to the students, enables them to state whether they have learnt something. Within category A, students expressed a need to know *whether* they had learned rather than *what* or *how much* they had learned, which is related to a more sophisticated category.

Students who held conceptions of self-assessment in this category reported taking part in self-evaluations or self-assessments in the classroom. However, those that reported

this, expressed a doubt as to the validity of their evaluations, and required the teacher to confirm the “correct” evaluation. For example, one student stated *“my evaluation is sort of a guess, I don’t know what the others are”* (M05:9). Another boy said *“we want another opinion to see if we’re doing all right, because we can’t really just tell by ourselves, we need someone else to ask or something”* (M03:13). The students had little confidence in their own ability to evaluate even in non-academic areas such as Physical Education (PE), in a school setting. In relation to PE one student noted *“when there’s self evaluation, kind of, like, that’s by yourself and you don’t really know if it’s right or not”* (M09:18). The belief that student evaluation is not relevant was expressed with statements such as *“we usually compare the teacher’s grades because he’s the one that knows really how good it is”* (M12:9).

The students were asked why the teacher’s evaluation was so important. The assumption that teachers knew the correct answer, and the reliance placed on teachers to guide and support self-assessment attempts are evident in the following example. As one student reported:

- S: *Because she’d set me something to do and she’d know the answer to it and if I get the right answer she’d know that I was learning.*  
R: *Oh I see. So she would know before you did?*  
S: *Well, I know that I was on the way to nearly learning it and I wouldn’t be sure if that was all that I had to learn for it or if there was more to learn about it, then she’d tell me. (M14:7)*

This extract highlights the teacher’s role in confirming learning and how students within this category believe that the teacher is aware of their learning before them.

This student also demonstrated thinking in category A when he referred to out-of-school settings within the community. In one example, the student talked about some picture frames he made for friends or relations as well as to sell in the market. He explains in this example, how his mother ultimately knows whether he has produced a good picture frame. In this extract, the reference to “she” refers to his mother.

- S: *Well, in some of the things, in some of the picture frames I’ve made, um ... she’s, like,... she’s, like, told me what to do and I went away and did it and put it on my picture frame, like, told me where to put the moss and where to put the dried flowers and all that. And so I went away and did it. I wasn’t sure about it and you know I wasn’t sure if that looked, that was alright and if I could sell it properly and she would tell me that ‘that looks really good’ and that would be... you know, good for selling and stuff.*  
R: *So for you, when you’re designing something who decides?*

- S: *Um ... either dad or mum usually or sometimes me, sometimes dad and mum may not be there and I might just think it through and do it myself real good.*
- R: *How would you feel then?*
- S: *Well ... when I'm sure it's real good I'd feel proud that I've done it and so, but I usually check out with dad or mum, ask them if they like it and if they'd like one themselves. (M14:7)*

Throughout the interview with the student above, when referring to various crafts he had made, he spoke about the need to check with either his mother or father. Even in examples of work he completed at school through technicraft, he sought the opinion of his father. When he states in the following extract that his father told him “*it looks really, really good*”, the student is identifying that he knows learning has occurred.

- R: *Okay, so how do you know what grade to give yourself?*
- S: *Um, well, I don't usually give myself, I usually ask someone else to do it because if I do it myself I might think it's real good but someone else might not, so I usually ask my dad and ask him if it's good and he'll tell me if it's really good, what it's like. Like, I made a boomerang the other day at school and, um, he liked it and he said 'yup, it looks really, really good'. (M14:10)*

All students within this first category of self-assessment (A) initially wanted to know whether they had learned something. It is the first form of feedback a student uses to self-assess, and it is considered neither quantitative nor comparative. At this stage, it is not important to them to know how they performed in relation to others. However, once the students are comfortable with knowing they can achieve, they become interested in more quantitative measures such as by how much, how fast, what level, what group or what grade. The next stage (category B), which does rely on this knowledge, is considered in the next section.

### 5.3.2 Getting marks and grades (B)

As with the first category, teacher appraisal and an external identification process of confirming learning dominate the student's conception. However, this category differs, from A in that students seek some *quantitative* measure of their performance. As the students explained, grades and marks provided the indication not only *that* they had learned, but *how much* they had learned. Students need confirmation of learning using what they consider to be objective sources such as marks or grades, to identify where their learning stands with their own previous performances, and in relation to other students. Often in a school context, students use test results. For example, as the

following student explains, learning is “measured” through pre- and post-tests, and she notes she did not learn “*that much*” in a recent mathematics module.

*I only learnt a little bit because I only got 54%. I think I got 54% on the first test and something like 65% or something on the second, so it's not that much.*  
(F01:3)

This category is considered more sophisticated than category A because students have moved from wanting to know whether they had learned, to wanting to know “how much” they have learned. In both categories A and B, the student is reliant on the guidance and expertise of some other person. While the external source of power in relation to students’ self-assessment is attributed in a school setting to the teacher and principal, students are involved in the self-assessment of their learning, although reliant on some other person. The difference between the two categories is that in the more sophisticated level (category B), the student becomes interested in putting some indicator of quantity on the learning. As students see it, tests and other forms of assessment are designed to help the teacher know what they have learned, and in some cases to communicate this knowledge to the student. As these students noted, “*Tests tell you what you need to improve on.. Marks tell myself what I've got to improve on*” (M14:11), and tests “*declare what age you're at, if you know that you've learnt*” (M03:12).

When the results are not communicated to the student, the student assumes that the teacher uses this knowledge to develop the teaching programme. As one student explained, tests are “*For the teachers to find out what you already know about the subject and if you're doing, if you're changing classes what classes you'd be in and what you know and what you don't, so they know what to teach you by marking and that*” (F06:10). Another student stated that a test, “*indicates to the teacher sort of what group you'd be in..what level group you'd be in for learning and see what, sort of, you need to learn more, and stuff*” (F01:3).

Either way, the student still maintains that he or she does not know s/he has learned until they receive an indication that this is the case. Therefore, the support of the teacher in this initial phase of self-assessment is critical for the student. As one student stated “*if you don't have a test you don't know what you know*” (F02:4).

The rationale for having tests was seen by the students as holding two key functions. First, they were used to assist in the grouping of students for subjects such as mathematics, and second, they identified for the teacher what students needed to learn. Most students were familiar with the pre- and post-testing in mathematics that was an integral part of the school's programme. However, although they noted they had learned when going from a low pre-test score to a high post-test score, they could only identify that they had learned – not what they had learned, or what they still needed to learn.

*S: Yes, we have maths tests, we have all sorts of tests.*

*R: Okay, can you tell me about the maths tests?*

*S: Um, well, they go into home sample and you get a piece of paper and it has all these questions on it and it gets put in a file or something from you and it's got all the answers and what your maths age is and stuff like that.*

*R: Your maths age?*

*S: Yeah, like, um, I'm in special needs for maths so I could be, like, a 7-year-old maths age or 8 or 9.*

*R: Well, if you have the tests to start with then, why do you have that test to find out where you're going to be, why do you have that test?*

*S: To find out what you need to learn to find out what age so they can teach you that age and just know where you are.*

*R: Okay, and then you have some lessons, and then do you have another test after that?*

*S: Yeah.*

*R: Well, what's that one?*

*S: That one is to see if you've made your age higher, so you're up to another age or you're at the same and you need to be re-taught it or, um, to see if you've forgotten it, see if you've gone down or up in your marks.*

*R: If you go up in your marks, what does that mean?*

*S: Well, then you get taught harder stuff.*

*R: Okay. What does it tell you about your learning if you go up in your marks?*

*S: Then that means that I've learnt something.*

*R: And what if you go down in your marks?*

*S: I'm losing my memory. I'm badder than I was.*

*R: Is that possible?*

*S: It is possible.*

*R: Do you usually go up or down?*

*S: At my other school I was going up and at this school I've only had one test, so I'm not quite sure yet. (M03:4)*

The last statement in the above extract, "I'm not quite sure yet", indicates the student's lack of awareness about his learning, and an inability to self-assess his learning without support or guidance. Although this student had been at the school for nearly six months, he still maintained a lack of awareness of learning until his mark from the test came through. He did not know, or could not hazard a guess whether he had learned enough in a mathematics unit to increase his score. He had completed the test, and was

therefore aware of the content, but still reliant on the test score to help with his self-assessment.

Some students used grades to assist with status and rank in the classroom, and therefore knowing the grades was either a source of much embarrassment or delight. Generally these students did not rely on the scores to acknowledge learning, but used the scores for other purposes. One female student expressed the impact of teasing when low scores were given. She identified that “*you get people tease you, and it sometimes it’s really hard to learn if you know you’re going to get really low, it’s easier to do, um, the stuff you’ve learnt than new stuff*” (F03:6).

The male students, particularly those performing at a low level, were also affected by poor grades. Some felt this was largely due to the competitive nature of grades.

*Some people put you down and [I] feel really sad, but when you come up and do really good and be better than they are, then it puts you on a higher scale than they are, because they put you down they think you’re not that good, but when you beat them it feels so great you just proved them wrong. (M09:10)*

There were other students who used test scores to measure their achievement in relation to peers. This took on a competitive nature, and was particularly evident within the male cohort, while there was no evidence of this in the female cohort. Many of the male students made comments about feeling “choice” when they beat other students (M03:13), although some expressed this in terms of bettering themselves and using the grades as the vehicle to identify whether they had learned. Often through beating their peers, there was a sense of bettering themselves.

*You don’t try and beat others, you’re just trying to better yourself...You’re also wanting to be as good as a mate...you want to be as good as other people as well, and also better yourself, to reach your standard, as well. (M06:13)*

*It will make you look better, everyone will see you as better than them and they’ll start being friends with you, and all that. (M12:10)*

Students used grades first to indicate that learning had occurred and second, to gain membership of a group, such as a higher mathematics group, through getting a high grade in a test. As the student in the following extract explains, he associates the higher mathematics group with further learning, because he’ll be introduced to “harder stuff”.

*It’s, like, me and my friends, like, we go, ha ha I got higher than you...because if we’re in the higher group we’ll learn more stuff and harder stuff. (M13:12)*

When marks became important to students, they referred to a number of strategies either to increase their own mark or to prevent others from attaining the same level. While students did refer to helping each other and provided illustrations of how they helped each other (see examples of category D, conception of learning; and a more sophisticated conception of self-assessment – category D), there were examples where students kept certain skills and strategies to themselves if they thought teaching it to their peers would provide better grades for their peers. For example, in technicraft, where the focus of learning is on making particular products, the outcome of learning was determined by the product produced. It was the final product that was assessed by the teacher. In one example, a boy described how rounded corners were important in an item the class were making. He reported not telling other students his “secret” for getting particularly good rounded corners because *“I don’t want them to get a better one [mark] than me, or better pencil case than me or...because I want to get an A or B or whatever but I don’t want to get a useless mark”* (M11:8). This student was able to self-assess his work but wanted to confirm this through a grade. However, he did not want to help another student achieve a similar grade. The fact that he did not want to receive a *“useless mark”* illustrates how the teacher’s assessment and grading of his pencil case was important to him and to his self-assessment of the pencil case.

In learning situations out-of-school, external evaluations helped students identify the level of their own performance. For example, one student identified his judo assessments as going up from one grade to the next to get the next colour belt. In another example, one student who performed regularly in speech competitions and speech examinations, said he relied on the physical feedback given by the judge. This student believed he could tell how he was performing by the facial appearance of the judge. However, this student did not rely purely on this form of feedback, as noted in the extract below, and therefore his conceptualisation of self-assessment also includes the grade he gets. Rather than being only interested in identifying that he had learned (category A), this extract illustrates how he wants to know how well he had learned (category B).

S: *When you’re doing speech competition, if the judge is looking pretty grrrr you know you’ve got a bit of a problem but you can’t really tell, but if she’s smiling at you, you normally get first place. But if she looks angry but you don’t really think that because you’re enjoying yourself, you get second or third so it doesn’t really matter.*

R: *That’s interesting.*

- S: *That's what I found out this time. But that also sort of happens in exams as well.*
- R: *Okay, so you get some feedback by how the other person is looking, how the examiner is looking before you get the results?*
- S: *Yeah ... I have to be happy with myself first.*
- R: *How do you know you're happy with yourself, what do you need to have done?*
- S: *Oh, you have to have tried your best and you've got to be positive that you've done all to your ability and so then if you think you've really done well, it doesn't matter if you don't get top or not...But even if you don't get that, well there's always next time. (M01:7)*

### 5.3.3 Performing (C)

The first two categories of self-assessment are categorised by an external source to reinforce that learning had occurred, such as teacher, parent, tutor (category A), and later a grade or outcome from a test or competition (category B). This is the primary source of information students who hold conceptions in these categories (A and B) use in the self-assessment process to determine whether and what they have learned. While some students do not go beyond thinking about what they have or what they need to learn, other students begin to show an awareness through their *performance* of an activity or task. As one student stated, *"I know that I know my times tables because I can say them, and I know them because I can say them correctly and fluently now"* (F05:4).

This category is considered more sophisticated than the earlier categories because students within category C are beginning to develop a sense of reflectivity when assessing their performance either during or after the task. For example, one student identified the need to listen and inherently reflect on that information to self-assess. He started talking about listening in a school context, but then proceeded to generalise it to all learning contexts. The fact that he states *"and then know what they do and how they do it"* suggests he is involved in self-assessment which is integrally linked to his ongoing learning.

*You've got to listen to people and then know what they do and how they do it, and then that's how you better yourself. (M06:6)*

Students identify their learning through their performance of a task or activity, and use this performance as their measurement for learning. This stage is categorised by the sense of *doing*, and still remains rather quantitative in nature in that the quality of the

performance is not necessarily a feature of the student's assessment. However, the sense of achievement that came with feeling good about a performance was inherent in this category. One student described knowing he had learned when he felt fulfilled. While discussing learning in general, he said he knew he had learned through "*just a feeling*". As he stated:

*I actually know I've learnt it..like, I don't know why, I just know I've learnt it. I think it's the way I feel. It's just like that bit's fulfilled in my head...it's just a feeling. (M09:13)*

He had earlier stated that he enjoys working on activities he knows he can successfully achieve. For example, he stated, "*I really like doing the stuff that I'm good at because I know that I'm good enough to actually have a good go at it*" (M09:8).

Another student reported that he knew when his performance was "*all right*" and that the self-assessment of the activity is a process he did "*in my head*".

*When I'm at home I sort of just, sort of think it's all right. I sort of do it in my head. If you think you've done your hardest and you're really pleased with yourself you can feel choice. (M03:13)*

After talking about an activity they had performed, or a task they had completed, the students who held conceptions of learning within this category C, identified that feeling confident about their performance contribute to a sense of knowing or awareness of learning. One student explained that "*if you're not confident you're not going to get anywhere, because you've got to know that you can do it*" (M06:14), while another stated that "*you just know for yourself...self confidence or something, I don't know*" (M08:11).

This feeling of confidence comes through the feeling that "*You actually recognise yourself as having been able to do it, and then the teacher would see your work and then she'd know*" (M12:13). This student goes on to explain that "*you know what you're doing and you know, um, something clicks in your mind and you suddenly know it, and after a little bit of practice it will be good*" (M12:13).

However, for some students in a classroom situation when they were asked to record their self-assessments for the teacher, they recorded a grade or mark that was appropriate for their peers' expectations of remaining humble while at the same time "*not putting yourself down*" (M12:10). The following student explained his reasoning

behind the actual grade he put on his work when stipulated to do so by the teacher as a “self-assessment” exercise. This related to the peer-group pressure to remain within the grade norm.

*You usually put your own work down so you don't show off. If there's a 'good', an 'excellent', a 'not so good' and a 'poor' one you put it about half way and then you don't, you're not putting yourself down and you're not saying you're really good either, so long as you do that. (M12:10)*

Students who held conceptions of self-assessment within category C demonstrated that self-assessment is more than just acquiring confirmation of learning through seeking others' opinions or through a grade. In the first extract below, the student demonstrated the ability to self-assess in sport through performance rather than relying on a grade or a win to identify learning. He used tennis as an example. As a local representative tennis player, he played competitive tennis, and explained that playing well was important for retention in the tennis squad. When asked how he knew when he played well he explained:

*Well, you win...but you also see improvement. Like, if you're not a very good server and you might not win the game but you get a couple of ace serves, and so you know that you've got better. (M01:6)*

For the same student, in the next extract, the experience of a movie or a performance is necessary to enhance his understanding of a story. He could identify that learning of a story required a movie to understand the story, and therefore his self-assessment was based on, and linked to, his knowledge of how he learned best.

*You can't read a book and know all the meaning about it. You'd have to see it in a movie to understand. (M01:3)*

The knowledge that students could “pull out the file” (M11:5) or perform tasks was often described by students as occurring *after* the activity was performed. This highlights the importance of students having the opportunities to perform tasks using the knowledge they acquire. The following extract from an interview with a female student illustrates this well. In this part of the interview, she is explaining that she needs to use her acquired skills in order to know she has learnt. As she describes further on, she often does not know she has learnt until she uses these skills, sometimes long after the learning took place.

*S: I think you only learn it, you only know when you've learnt it, is when you actually use it. Like, I was watching Animal Hospital and so maybe when I get older some of those things will help me but I actually don't know that I've learnt them. Like, I was listening to some of the words and some of the*

*things they called the animals, so I actually never know that I've actually used it until I write a, I might write a speech about it or we might do a topic on it. So I never really know until I've actually used it.*

*R: Do you have to use everything you learn?*

*S: No, no, some of it's just, just something that you just take in and it's always there. I'm not, I'm not really, sometimes I might learn about, um ... it might be about, oh ... I might learn about some kind of sport game, although I do like it but sometimes I don't actually remember that I've actually learnt it until I actually play the game. And sometimes, like, my mum and dad might tell me about, um, how to avoid getting stressed out and if you're, if you're like, um ... how to use it and whenever I always do that, like I play cricket I always remember what my dad would say... about making sure that the ball links up to your shoulder, and so I'd always remember that and so when you use it when you get older or when you're doing it in sports or something, that's when you remember that you've actually learnt it. (F10:7)*

Towards the end of the interview, she reiterated her main point that “*you don't really, really know until you've actually used the knowledge that you've learnt*” (F10:15).

Within this category, students use their performance to self-assess their learning, and when they find that a solution does not work the first time, “*you have to do another way of doing it*” or “*look at a different way of finding the answer*” (M06:13).

*Yes, because if you look at something in maths at a particular problem solving thing, it might not work out so you have to do another way of doing it, so you sort of have to, um, look at a different way of finding the answer. You just check it, guess and check that's one, just get other ones. Well, you try something and you might not be good at it, then you learn something new to make it better and then you do it again, using the thing that you've learnt, something you've learnt – and then you're better at it. (M06:13)*

In another example of how performance is used to assess learning, the following student explained how she knew that she was not very fluent in naming musical notes from manuscript. In this extract, she explains why she knew her earlier performances required further learning. Her response is based on her assessing her own performance.

*R: When you said you had to figure out another way of doing it because you weren't very good, how did you know you weren't very good?*

*S: Well, I wasn't a quick reaction. I was saying now that's ... C, so I'd have to count up the note from the note that I already knew, so I wasn't very, yeah, I'd have to count up but now I can say, yeah, that's C. (F05:7)*

Category C is distinct from either A or B because students are placing less reliance and emphasis on the teacher's or parent's evaluation and more emphasis on their own perceptions of their performance. Through this increased emphasis on their own self-assessment of their performances, students are taking more control in the self-

assessment process as they become increasingly aware of their role in the learning process. In contrast to category A, where teachers and parents provided feedback about learning, students who held conceptions of self-assessment within category C now employ other sources – often symbolic, such as books, flashcards, computers – in a more independent and intentional manner to self-assess their learning. One interesting example comes from a student who had completed a science experiment using lemons to build a circuit. She used instructions from a book, and was told by the teacher that it should work. She also read in the book that it was possible. When her experiment did not work, she reported not being sure whether she had learned that lemons can complete a circuit because while the book said it could, she hadn't seen any evidence to confirm it. Her use of the science book illustrates that she was not placing dependence on either the teacher or the grade to assess her learning. She was able to do this in relation to the information provided in the book, even if, as this example shows, the outcome was not successful. The student's activity throughout the process, including her interpretation of the information from the science book, her involvement in the science experiment, and her self-assessment of what should have happened and what in fact did happen, highlights the interaction between self-assessment and learning.

R: *So can you tell me something that you've done this year that you didn't know before?*

S: *How to make a science project.*

R: *Can you tell me about that?*

S: *Um, well, we had to do a aim and what we did for our experiment, and do the experiment and do up the results and stuff on any subject, and you got to pick and do all these weird things.*

R: *What sort of weird things?*

S: *Um, like, draw a conclusion, and everything had to match the other things, and all the answers from our experiment, if it didn't work and if it worked, then what we did and stuff.*

R: *What was your topic?*

S: *Silicon Circuit.*

R: *Okay, what did you learn about the silicon circuit?*

S: *That if you, like, see an experiment in a book or something it doesn't always work, because I tried to make a light with a battery using a lemon as a power source and it didn't work, so that it will light, and you've got lots of different bulbs and different size lemons and it still didn't work.*

R: *Why?*

S: *I don't know.*

R: *Should it have worked?*

S: *Yeah.*

R: *How do you know it should have worked?*

S: *Because ... the book said it would. (F06:1-2)*

The use of other sources (such as flashcards) to confirm learning through performance, involved other areas such as music. As one student explained, she used “flash cards” to learn the music notes. These were a series of cards with musical notes written on manuscript on one side and their corresponding letter name on the other. For example, C sharp would be written on the manuscript on one side of the card, and the student would state what the note was, and turn over the card that had the letter name written on it. In this way, the student could confirm whether the note she had identified was correct. She used these flash cards when away from the teacher to confirm whether she was correct in her learning.

- S: I'm doing my exams so I'm learning, well, I'm not a very good note reader so I'm learning my notes and learning to stretch my hand an octave.*
- R: So when you're learning your notes how do you go about learning them?*
- S: Well, we tried several ways because I wasn't very good. So first she'd point to a note on the page and I'd say it but now she said to make some flash cards and I look at the card and I name the note and then I flick it over and do another one. And so I was learning them and now I'm quite fluent at the treble clef notes and now I'm doing the bass. (F05:7)*

Within out-of-school learning activities, category C is characterised by the ability to perform the particular task, whether it is associated with music, dancing, speech, judo, mountain bike riding or sport. The following extract from an interview with a student shows how she became aware of her dodging ability in netball through her performance. She did not rely on her coach's feedback to know she had learned how to dodge. She was using the information from her performance, and was able to identify a skill she had learned. Often students made mention of using peers' performance as a point of reference for their own understanding of their learning. In a game of netball she reported that “if I do something wrong, I just copy someone” (F02:5).

- S: I enjoy dodging because I think I'm good at that.*
- R: How do you know you're good at dodging?*
- S: Because I can see that if I'm dodging one person and I can get the ball easily. I did it when I was in Rangitane. I played and there was boys and I played with them and I knew that I was good. I think I was the great player then because I knew I dodged the ball really good.*
- R: Did you know you dodged the ball really well because the teacher told you or because you just knew it?*
- S: I knew it. Yes, I knew it... and the teacher told me when I went to ask her what things I should be good at. (F02:5)*

The use of peers as a reference point to gauge their own learning, is different from the previous category B, where competition between peers was demonstrated through the grades. The students use peers in quite a different and more enlightening way in

category C. The ability to perform is assisted through identifying how their performance is going in relation to their peers so that they *enhance* their own performance. Throughout the interviews, when students describe the use of peers in this way, it is a sense of learning and being aware of their learning. In contrast to this, the previous category showed students using peers in a quantitative sense only. The following extract from another student describes how she used her peers to determine whether her performance in a dance situation was accurate. She told the researcher that she needed to have her head in the correct position, and she explained that sometimes her head did not look “*the right way*”.

R: *How do you know if your head is not looking the right way?*

S: *Sometimes other kids in the group are doing it one way and you think you might be doing it the other, yeah, sometimes the teacher will just go ‘oh your head is looking the wrong way’, or something.*

R: *Okay, so it’s either looking at the other kids and seeing what they’re doing or...*

S: *Yeah, we’ve only got a really small group this year but last year there was, oh well, there was a few, you know about 6 or 7, and we used to do it on our own, you know to check how the other person was doing it, and so the teacher could pay attention to that child and then we could all see the way they’re doing it and if we’re doing it slightly different to them. And if the teacher says they’re doing it right then you’ve got to try and do it the same as them, or you know if you’re doing it slightly different. (F01:10)*

#### **5.3.4 Using criteria (D)**

The fourth category in expressing the phenomenon of student self-assessment is identified by the way students see their role in the assessment process. Students who hold conceptions of self-assessment within this category are becoming increasingly reflective about their own performance and view themselves as integral to the learning and assessment process. Rather than relying on other sources such as parents, teachers (category A), or grades (category B), or even their own performance (category C), these students go a step further by using identified criteria, for example, teacher benchmarks, against which they will assess their performance. This category is considered more sophisticated than the earlier categories because students took more control and responsibility for the self-assessment process.

The following extracts from two different students using piano playing as an example, illustrates how adults are used as models to provide the criteria or benchmark against which these students measure their own performance.

*When it sounds like it's right, because you sort of have an ear to music I find and, like, if it sounds right, because my parents, usually she always plays the whole thing first and then I just try and do it myself and listen for it. You know because you can tell when it's supposed to be B flat and that because it's supposed to sound low instead of normal or high instead of normal. (F07:4)*

*Well, I would've heard the piece because my teacher would've played it to me and I would know, I would remember how it went and then I'd see if my playing was the same. If I've hit the wrong note then it doesn't sound right and..well my teacher said I've got a good memory for music so once I know, like, a bar I could hear that bar and almost play it. I know if it's wrong because I can remember what it's meant to be like. (F05:9-10)*

One of the critical features of this category is that students express an awareness of the criteria associated with the learning task. They are increasingly aware both of *what* they are learning and *how* they are learning it, whereas in previous categories students were more concerned with *have I learned, how much have I learned, or what did I learn?*

The use of criteria enables students to recognise the difference between being able to do something or not do something, as well as to identify the areas of achievement or difficulty. Students who hold conceptions of self-assessment within this category demonstrate a growing interest in knowing exactly what they have achieved in terms of learning outcomes. Category D highlights a further aspect of students developing independence from the teacher.

When students become more aware of their learning and are able to place less reliance and emphasis on the teacher's evaluation or other forms of external evaluation of their learning, they take a greater role in the self-assessment process. After completing an activity they are able to show more awareness that they have learned something. More importantly, they can also identify what this "something" is. As indicated in category C, students are beginning to show confidence in their ability to self-assess their learning. In learning situations that are product or performance orientated, students who hold conceptions of self-assessment within category D, will often rely as much, if not more, on their own evaluations. For example, one student noted that even if his teacher gave him a good evaluation on something he had made, it would not influence his own self-assessment or decision to keep or use it, if he himself did not feel it was a good piece of work. As he stated "*if you don't like what you've made and you put a not very good mark, you don't use it much when you get it home or you don't...you throw it in the rubbish when you get home*" (M12:9).

The ability to identify the teacher's established criteria is part of knowing what aspects make up the learning task. It also helps students self-assess in relation to these criteria. Students have a rationale for what they are doing and a sense of purpose beyond getting something "right". Students who hold conceptions of self-assessment within category D believe they can improve and are showing an increased awareness in knowing *how* to improve. In previous categories, students believed the only way to improve was through practice, because speed and accuracy were determining features of learning. However, in this category students were aware that they could actually learn from their mistakes as well as from teaching their peers and so the emphasis on being correct all the time had diminished. Category D is characterised by students becoming increasingly confident in their ability to understand the nature of the task, and being able to identify the criteria for measuring the learning outcome. These students also have increased confidence in being able to teach their peers as a function of their own self-assessment.

In contrast to category C, which showed how students used their peers to gauge their own performance, as a model and benchmark, category D sees students in a teaching role with their peers. Teaching or supporting peers through the learning process is an aspect of self-assessment because the students need first to identify the criteria to assess that their own learning has occurred, and second, to use both the criteria and their self-assessment of their performance to teach others. The use of peers to self-assess was not organised by the teacher through such teaching methods as peer tutoring, and the students were not requested to teach their peers but did so as a natural part of the self-assessment process. As one student explained "*If I've finished mine, I usually help him in his and it gets him actually moving*" (M10:4).

Students help out their friends when they have mastered the concept. They feel confident in their own ability to perform the task, understand the reasoning behind the concept, and are able to talk it through with their friends who are struggling. As this example shows, the student supported another when she realises her friend did not understand the concept of renaming in mathematics. In order to help her friend, this student needed to know the criteria to measure effectiveness.

- S: *My friend didn't really understand how to rename numbers so I, we kind of were talking this morning and she got it, so she understands it now.*  
R: *Does she understand it now?*

S: *Well, she sort of knew but she was having trouble, you talk to her and show her again and she tries it once more and she gets it wrong and so you go over it again and she looks at yours and then she looks at her own and then she works out what's wrong and then you write it down....Sometimes it's easier for kids because the teacher goes on about a whole lot that you don't really want to know but they don't really understand what you're having trouble with sometimes, and the kids do because they have trouble with the same thing. (F09:16)*

Another example, in a mathematics-learning context, identifies this ability to assist friends.

S: *Um, I did but Mary, she was sitting next to me, she's one of my friends, she didn't understand it so I explained it to her and we got going.*  
R: *Okay, when you explained it to Mary how did you know when she finally got it?*  
S: *Because she sort of explained it back to me, what to do and she measured one and said 'oh, T goes there' and stuff. (F03:3)*

Inherent in the examples above, is the notion that students are most likely to view teaching their peers as an indicator of their own learning.

Within the community learning context, students were reporting similar things. They described how they could teach their friends once they understood the task in relation to their learning. As this student explains, with regards to netball, often they have been through the same difficulties themselves before mastering and understanding the concept. It is this knowledge of struggle that often helps them help their peers. In the following extract, the student's comment to "do them properly" refers to shooting goals in netball.

*You're learning how to do them properly and what you were doing wrong to show somebody else, because if they're doing the same thing as you were doing you can say 'well, this is what you were doing wrong, because it happened to me'. (F04:3)*

### **5.3.5 Setting learning goals (E)**

While the previous category emphasised a growing awareness of learning, students did not see an internal relationship between themselves as learners and the world they experienced. Learning and assessment were viewed as separate entities. In contrast, category E is characterised by a more sophisticated way of experiencing the world, as demonstrated by some students who expressed an awareness of their own learning, understanding and knowledge in relation to their self-assessments. This category is

considered more sophisticated than the previous categories because students within category E both established the criteria for assessment, and then used it to assess their learning. In category D, the students were using previously identified criteria for their performance in the form of benchmarks set by the teachers or their peers. Category E was characterised by the students' awareness that there was no longer "one right answer" but that there could be multiple perspectives when seeking a solution to a problem. As students developed confidence in their ability, and understanding of the concept they were learning, they were interested and able to identify various perspectives and possibilities.

In category E, students were developing their own criteria and were interested in personal goal setting, self-assessment activities, a belief in their ability, and there were more examples of the way students used creativity in their learning and self-assessment. Sometimes the students did not make these goals publicly available to the teacher. For example, as the following student explained, the goals are personal. As he stated:

*I just wouldn't tell anyone, you know, my goals or anything. I'd just do them myself and then I'd just think of my performance, what I think, how well I think I have done but, you know, I wouldn't mention it to anyone else. If I didn't have any goals I wouldn't really know what to go for to try to achieve. You'd always have to have a goal. (M08:10)*

Students who held conceptions of self-assessment within this category were more aware of their capabilities than students holding less sophisticated conceptions. As part of this, the student's aims for learning were often different from the teacher's, and therefore the student often had a different solution to a problem or learning outcome from the teacher. A student who was part of a class that designed and made their own tepees provides one example. The student in the following extract explains he knew he was capable of completing the task to design and construct a tepee. However, he also knew he did not complete it as the teacher intended, or with the specified criteria, and therefore received a lower grade. However, for this student the grade did not constitute what he *could* do. Instead, it was his *knowledge of his ability* that had a higher priority. The relationship between motivation and ability to perform is also highlighted in this example.

*S: ... another boy in our class, we're making tepees, and he made this real choice one, that had bow and arrow and it was perfect and he got a 20 or something out of 20 and he felt real good because he beat everyone else.*

- Because we only, well, I haven't been graded yet, but no one else got 20 out of 20.*
- R: *Do you think he was pleased because of the high mark or because he liked his tepee?*
- S: *Because, well, he beat other people and he's successful and he's happy with his tepee.*
- R: *So your tepee hasn't been evaluated yet?*
- S: *No.*
- R: *What do you reckon that will get?*
- S: *Well my one, it's only out of 10 because um, mine's out of 10 because if we bring it on Monday it will be out of 20, but if you bring it today it would be out of 10.*
- R: *Okay.*
- S: *And I think I'll get about a five because it's too bright and it doesn't have the sticks out the top.*
- R: *So why didn't you put the sticks out the top?*
- S: *Because I didn't have enough time.*
- R: *And why is it too bright?*
- S: *Because I couldn't get any dark paints that go on material. (M03:13)*

Later on in the interview the student explained that he knew the set of criteria being used for grading. If this student adhered to the identified criteria, he would be illustrating an earlier conception of self-assessment (category D). However, for his own self-assessment he went beyond the teacher's identified criteria and goal of the project, and the learning outcome for this student was governed by his own goal. He could explain the components that should make up the tepee design and construction as noted above. He was aware that the mark he was to receive would be based on the final construction – the outcome of his model. Interestingly, his awareness of the tepee extended beyond the product he demonstrated for the teacher, but it appeared he did not either share his teacher's learning goals in relation to the activity, or did not understand what these were. It was clear that making a tepee was not his goal, because, as he stated later in the interview, *"you're not going to exactly live in a tepee when you grow older so you don't really need to know that"* (M03:14).

Students demonstrated an awareness that grades were not necessarily representative of their knowing, as indicated in a previous example with the tepee, and these students were also aware that they could improve their performance. The following two examples indicate how students no longer need the teacher or the grade to verify their understanding of the concept because they have *self-knowledge* of their capabilities in relation to the task. These students show, through the examples, that the self-assessment of their work is important and is part of their own learning. They have not

separated this form of assessment from their learning. In marked contrast, earlier examples of the categories of self-assessment (e.g., category B or category C), students have seen self-assessment both as external to their learning and as a measure of their learning.

Students who hold conceptions of self-assessment within category E on the other hand, view self-assessment as part of the learning process, because self-assessment is part of setting learning goals. One student explained that she set herself goals and then evaluated them independently from the teacher or from checklists provided by the teacher. As she stated, *“Before I do something I often set myself a small goal and then if I fulfil that goal I self-evaluate. I often don’t tell someone about my goal. I think to myself I’ll do this and if I do it then I’d say well done”* (F05:12). A student who alluded to the power of motivation provided another example of personal goal setting. As she reported, *“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”* (F11:11).

Satisfaction with their learning was evident in students who had set goals and were happy with their subsequent performance. In the extract below, a student explained that his assessment of his poem and the words he used were integral to his belief that he had written a good poem. He expressed satisfaction over the poem, and he evaluated it as a good poem on the basis of the words he used, rather than on the teacher’s evaluation. As he explained, the word *slithery* created an effective poem, and when asked how he knew that the poem was good, he said:

- S: *I know [it’s good] because of the words that I’ve used and, like, we did an upside down poem. Like we wrote the real poem about camp and then upside down and the teacher liked it because I had used a word ‘slithery’. I had just learned that the same day somebody else used it, so I, like, checked up in the dictionary and it like means fast and really slippery so I, like, thought it was a good word to, like, use, very slithery and fast.*
- R: *So do you know that something is good because you like it or because the teacher tells you it’s good?*
- S: *Because I like the word, like what it means when I describe something.*  
(M04:8)

Another student also mentioned that satisfaction from learning was part of the self-assessment process. As he indicated, being happy with what he had achieved was important, and even if it was not *“the greatest score in the world”*, he could improve next time. As he stated:

*Well, if you're happy with your score, well, if you're happy with what you've done before knowing your score, well, then you, um ... just seem to ... you don't need to have the greatest score in the world but you know that you can at least, next time you do it you'll be able to do it better, you won't be all tensed up inside. (M01:13)*

As noted in the examples above, self-assessment is part of the learning process, and students see the relevance of it particularly when they feel they have learned something.

### **5.3.6 Evaluating learning content (F)**

There was limited evidence to suggest that some students held a further conception of self-assessment that formed the sixth category. This is the most sophisticated and inclusive category and is distinguished from other previous categories by the fact that students assess the *value* of the learning content in relation to their own needs. While this occurs to some degree in the earlier categories, this sixth category is characterised by students considering the relationship between the learning objective and their objectives in relation to learning. This category goes beyond students merely wondering why they are learning, or wondering why they want to be bothered learning. In this category, students are consciously making decisions that the learning has inherent value, as opposed to deciding they do or do not want to learn on any given occasion.

As the student in the following extract explained, she learns something new everyday, and she makes choices about what is of value, and in doing so, passes on this knowledge to her friends.

*I learn a new thing everyday, sort of thing. Like, sometimes they have facts on the radio and I think 'oh, that's good' and then I come to school and tell all my friends and then they tell me something. (F08:8)*

This category is characterised by the learner having an awareness of herself or himself in relation to the worth of learning. It goes beyond the student questioning *why do I need to learn this?* which is a fairly typical question from many school-aged students. The worthiness of learning is about the relationship the student develops between the knowledge the student wants to gain and the knowledge s/he already has. It is closely connected to personal goals and motivation for learning.

The boy who described the design and production of a tepee provides an example of this. When asked about the criteria for designing the tepee he explained:

- S: *We were given a sheet that said what you'd get higher points with ...Like, we'd get one for if it was steady and it wouldn't blow over and there's this girl and if you just touched it it would fall over and she got marked down for that, and my one, well it says it has to have a hole up top – my one's got a hole but it doesn't have the sticks to hold the hole open. And it said background, for, like tepee bows, arrows, tomahawks, things that stretch the buffalo skin and stuff like that.*
- R: *So did you follow through that?*
- S: *I tried to, but my colours, I tried to go the closest colours and materials but something that would probably feel like buffalo skin and some of them used leather, some of them used material, someone used wrapping paper, some just used cardboard and made their whole tepee out of cardboard.*
- R: *So what was your one made out of?*
- S: *Material and paper. Paper on the inside and material over it.*
- R: *Does it worry you what you get graded on, how you get...*
- S: *For some stuff, like the tepee it doesn't really matter.*
- R: *Why?*
- S: *Well you don't really need to know how if you're going to make a tepee when you grow up because there's houses – you're not going to exactly live in a tepee when you grow older so you don't really need to know that, so you don't really care about that. But for stuff like woodwork and metalwork and that sort of stuff, that you really need to know. (M03:14)*

One student who demonstrated the use of his own criteria when self-assessing, identified the need to be “honest” with the way he self-assessed his work. He believed that even if he gave himself a better grade or inflated his belief about the quality of his work, it wouldn't actually make the work better. As he stated, “*if I got it wrong I just have to face it and be honest with, because I'm not with my evaluations, I'm not really cheating anyone but myself if I did*”, and he later states about the actual self-assessment, “*if I wrote it [the self-assessment] better, that won't make it [the work] better*” (M05:15).

Within this category, students who evaluated the learning content or task also tended to persevere with challenging learning situations. One student explained that he needed to look at different ways of solving the problem if it could not be solved on the first attempt. Therefore, while different perspectives are used by students to solve a problem, perseverance is also a factor. This is inherent in the following example, where the student evaluated the learning context as worthy of his perseverance. He explained, in relation to a mathematics problem, that perseverance was important because a solution was not initially identified. He stated that “*you have to do another way of*

*doing it*” and it is necessary to *“look at a different way of finding the answer”* (M06:13).

### 5.3.7 Summary

All students experienced an awareness of having learned something, and therefore held a conception of self-assessment. The six categories of self-assessment identified are summarised in Figure 5.3. The variation in the conceptions of self-assessment as outlined in the categories suggests that students have varying ways to self-assess their learning. The conceptions of self-assessment ranged from the two least sophisticated categories where students reported a reliance on the guidance and support of other people (category A), and sources such as grades (category B), to the more sophisticated understanding of self-assessment where students reported using their own performance (category C) or pre-established criteria (category D) to self-assess their learning. The most sophisticated conceptions of self-assessment involved students actively setting their own learning goals and then self-assessing these (category E) and establishing whether they valued the learning content enough to persevere with learning (category F). A common question that represents the students’ views for each individual conception are incorporated in the description for the conceptions in Figure 5.3. For example, the least sophisticated conception of self-assessment (A) answers the student’s hypothetical question *have I learned?* Similarly, the common question for the most sophisticated category of self-assessment (F) is, *is this worth learning?*

The students’ conceptions of self-assessment ranged from a basic awareness of knowing they had learned when an external source provided the information, to students who experienced an awareness of learning through their internal knowledge of both self and understanding of the concept they were learning. The need for support to confirm that learning had occurred was important for students who had little confidence in their own ability to assess their learning. However, when students identified that they relied less on the support of others, and more on their own beliefs, expectations and goals for learning, they held more sophisticated conceptions of self-assessment, and also tended to talk with more confidence about their learning.

<b>STUDENTS' CONCEPTIONS OF SELF-ASSESSMENT</b>	
<b>A. Seeking an opinion</b>	Self-assessment is receiving an opinion from an "expert". Students are dependent on others to confirm that learning has occurred. Teachers and parents are the predominant source of confirmation. This category is characterised by a common question: <i>Have I learned?</i>
<b>B. Getting marks and grades</b>	Self-assessment is dependent on a symbol (grade, star, stamp, sticker) to confirm learning. For students, these marks and grades identify how well they had learned in relation to peers. This category is characterised by a common question: <i>How much have I learned?</i>
<b>C. Performing</b>	Self-assessment is viewed as the ability to perform a task. Students use the ability to perform or complete a task as an indicator of learning. There is the use of peers and adults to model the desired performance in order to assess own performance. This category is characterised by a common question: <i>What did I learn?</i>
<b>D. Using criteria</b>	Self-assessment involves the use of pre-established criteria to indicate learning. Students are most likely to view teaching their peers as an indicator of their own learning. Generally these students have a belief that their learning will improve. This category is characterised by a common question: <i>Do I understand what I have learned?</i>
<b>E. Setting learning goals</b>	Self-assessment is based on setting learning goals. Students are able to set criteria, goals, and evaluate tasks before assessing their own learning in relation to their goals. Students individually self-assess their own learning and use grades as benchmarks for monitoring performance. This category is characterised by a common question: <i>What do I want to learn?</i>
<b>F. Evaluating learning content</b>	Self-assessment is part of determining the worth of the learning. Students evaluate the value of the content and the learning goal before assessing their own learning. They are prepared to persevere in learning if the goal is considered important and valuable. This category is characterised by a common question: <i>Is this worth learning?</i>

Figure 5.3. Categories of description for students' conceptions of self-assessment

There were not many examples found amongst year 7 students who actively evaluated the learning content in relation to their own learning (category F), and there was only one student who mainly held this conception of self-assessment in an out-of-school context. It is likely that with a more mature group of students, perhaps at secondary school or tertiary level, there may be further examples of this conception.

While all students used external sources of feedback to assess their own learning, there was a distinct difference between students who were dependent on this information for their self-assessments (categories A and B), and students who used it to verify, confirm or contribute to their own awareness of learning (categories C, D, E, F). External sources such as grades were used in different ways. Students with less confidence in self-assessing their work placed greater reliance on grades, whereas other students who had more confidence in their own ability to self-assess used grades either as confirmation of learning or in more competitive ways. As noted in some of the illustrations, one boy did not assist other students in case they got a better grade than he did, and another boy said he and his friends would laugh when they beat each other in a test. Some students also attributed high grades to getting into more elite groups in mathematics.

Students' conceptions of self-assessment were derived from the range of student experiences. Although individual students held more than one conception of self-assessment, the *main* conception held by each student was determined to identify any patterns arising from the data. Therefore, as summarised in Figure 5.4, while the *main* conception held by each individual student is identified, it is not necessarily the most sophisticated conception for that student.

Students' held a range of conceptions of self-assessment, but the data show that the context or setting made a difference in how they conceptualised self-assessment. As shown in Figure 5.4, 15 students held more sophisticated and inclusive conceptions of self-assessment in out-of-school contexts. Eleven students retained the same conception irrespective of context. There were no students who held a less sophisticated conception of self-assessment in an out-of-school context. Therefore, there is a tendency for students either to maintain their view across settings or to develop more inclusive conceptions in out-of-school contexts.

Students	Contexts used to express conceptions of SELF-ASSESSMENT	
	School	Out-of-school
F01	C	D
F02	B	C
F03*	D	D
F04	B	B
F05	D	D
F06*	A	B
F07*	B	B
F08	B	C
F09	B	C
F10	B	C
F11*	C	C
M01	D	D
M02	B	B
M03	D	D
M04	D	D
M05*	E	F
M06*	C	D
M07	B	C
M08	D	E
M09*	C	D
M10	A	B
M11	B	B
M12	C	D
M13	B	C
M14	A	B
M15	A	A

\* denotes student selected to participate in Phase Two

Figure 5.4. Prevalent conceptions of *self-assessment* identified for individual students

As Figure 5.4 shows, for some students the context did not appear to make a difference. One example is shown by F11, who largely held a conception of self-assessment as performing in order to identify whether learning had occurred irrespective of setting. However, for 15 other students, context made a difference. For example, M07 held a less sophisticated conception of self-assessment at school where he required grades or marks to establish whether he had learned, but in an out-of-school context he could talk about knowing he had learned by performing and identifying whether he could carry out the activity.

It was interesting that when students were asked by the teacher to self-assess their own work in school by giving themselves a mark or grade, they approached this task differently from the competitive way they exchanged grade information with their

peers. While it was favourable to get a good score from the teacher, it was not considered appropriate to give yourself a good grade. This indicates that the grades students assign themselves, as a self-assessment activity, are therefore neither an indicator of how they really perceive their work nor demonstrate an awareness of their learning. As one student carefully explained, it was appropriate for students to give an average grade but it was not appropriate to allocate your own work either a low grade (which indicates you are putting yourself down), or a high grade (which indicates you are skiting).

In a school setting, more students expressed reliance on, or used external forms of feedback in the self-assessment process. However, students who were involved in learning activities out-of-school in the community, were generally more resourceful, independent, and confident in their own ability to identify and self-assess their learning. This may have been that out-of-school settings, whether they involved activities in the community, or school-related learning in out-of-school contexts, tended to be more performance based, with other people actively involved in the same or similar activities. Having peers and adults to model the appropriate learning outcomes, and also having the opportunity to participate in the activity may give students increased opportunities to observe others and self-assess their own and others' performances. In contrast, in a school and classroom-based setting, students did not identify that they were generally aware of the performance of their peers on a daily basis.

#### **5.4 Conclusion**

The results from Phase One indicated that year 7 students held a variety of conceptions of learning and self-assessment; that students' conceptions of learning impacted on conceptions of self-assessment, and that the context within which the learning occurred influenced conceptions of learning and self-assessment. As noted earlier, it is not intended that each specific category represents any one student's conception or that a student's conception is represented only within one category.

Phenomenographic research is concerned with the variation in the conceptions of the sample. While students held a range of conceptions, the main conception they held in a school setting, and the main conception they held in an out-of-school setting were

identified. In this way, it is possible to determine the range of categories for learning and self-assessment.

#### **5.4.1 The relationship between students' conceptions of learning and conceptions of self-assessment**

The results highlighted the link between learning and self-assessment, and identified a close association between the two. Students who held relatively limited conceptions of learning, also held the less sophisticated conceptions of self-assessment. In a similar way, those students who tended to hold more sophisticated conceptions of learning, such as understanding or different ways of knowing, were more likely to use criteria or their learning goals to self-assess their learning. Therefore, there appeared to be a relationship between a student's conception of learning and his or her conception of self-assessment. For example, if a student believed that learning was about acquiring knowledge or memorising or reproducing, it was likely he or she would self-assess this learning through seeking an opinion from others or requiring some external source of measure to guide that self-assessment.

The relationship between students' conceptions of learning and self-assessment was examined, first in relation to a school context, and second in relation to an out-of-school context. To do this, the categories for learning were clustered into three broad areas. These were: categories related to a conceptualisation that "knowledge" was external and "out there" to be learned, as discussed by students who talked about filling the brain or remembering facts (learning categories A and B); the category that involved students' conceptualisation of learning as application of knowledge (learning category C); and the more sophisticated categories that reflected conceptions of learning as a *relationship* between the learner and knowledge, such as understanding (learning category D) or different ways of knowing (learning category E).

The categories of description for self-assessment were similarly clustered to reflect common elements. This involved: clustering the first two conceptions that required an external source, either teacher or grade, to identify whether learning had occurred (self-assessment categories A and B); the category that involved students' conceptualisation of self-assessment as performing a task to identify learning (self-assessment category C); and clustering the three more sophisticated conceptions of self-assessment on the

basis that they reflected greater student awareness of self-assessing their own learning, sometimes through the use of metacognitive strategies, where students' used or identified criteria to self-assess and evaluated the worth of their learning content (self-assessment categories D, E and F).

Through employing these clusters of categories, it was possible to collate the number of students who held particular conceptions of both learning and self-assessment by context (school and out-of-school). When this was collated, the number of students who held largely consistently low, medium or high conceptions for learning and self-assessment were identified first for a school context and second for an out-of-school context. By doing this it was also possible to identify students who held inconsistent conceptions across learning and self-assessment, and those where there were disparate or very different conceptions of learning and self-assessment.

The relationship between students' conceptions of learning and self-assessment first in a *school* context (see Figure 5.5), and second in an *out-of-school* context (see Figure 5.6) was established. Twenty-three students held consistently low, medium or high conceptions of learning and self-assessment in a school context, and 23 students held consistent levels of conceptions of learning and self-assessment in an out-of-school context. There were no students who held disparate views of learning and self-assessment in either a school or out-of-school context, and only three students held inconsistent conceptions of learning and self-assessment in both the school and out-of-school contexts.

Through examining the patterns that have emerged it is possible to establish that there appears to be a relationship between students' conceptions of learning and their conceptions of self-assessment. This means that students who held relatively low sophisticated conceptions of learning were also likely to hold low conceptions of self-assessment, and students who held largely an inclusive and more sophisticated conception of learning were also likely to hold a more inclusive and sophisticated conception of self-assessment.

<b>SCHOOL CONTEXT</b> Categories of description			
	<b>Learning</b>	<b>Self-assessment</b>	Frequency
<b>Consistent</b>	AB	AB	13
	C	C	4
	DE	DEF	6
<b>Inconsistent</b>	AB	C	1
	C	AB	1
	C	DEF	1
	DE	C	0
<b>Disparate</b>	AB	DEF	0
	DE	AB	0
Total number of students			26

*Figure 5.5.* Relationship between students' conceptions of learning and self-assessment in a school setting

<b>OUT-OF-SCHOOL CONTEXT</b> Categories of description			
	<b>Learning</b>	<b>Self-assessment</b>	Frequency
<b>Consistent</b>	AB	AB	7
	C	C	6
	DE	DEF	10
<b>Inconsistent</b>	AB	C	1
	C	AB	1
	C	DEF	1
	DE	C	0
<b>Disparate</b>	AB	DEF	0
	DE	AB	0
Total number of students			26

*Figure 5.6.* Relationship between students' conceptions of learning and self-assessment in an out-of-school setting

As the students talked about learning situations, they often referred to learning and knowing that they had learned within one example. Therefore, from the student's point of view, the demarcation between learning and self-assessment, that is, how they viewed learning, and how they identified when they had learned, was often blurred. Self-assessment requires the student to have confidence in identifying the aims of the learning activity, the subject content, and his or her own experience of performing the activity. It was clear through the interviews that those students who had less confidence

in their own ability to self-assess were less likely to have either clear learning goals or to know what the teacher's criteria were in relation to assessing the task. Therefore, when students had little confidence in either themselves or the subject, they relied more heavily on the support and guidance of others to assist with the self-assessment. Again, this highlights the close relationship between how students view learning and their associated conception of self-assessment.

While Phase One did not involve observations or identifying approaches to learning within different contexts, the students referred to numbers of ways they approached learning tasks. There was a difference in how students talked about approaching learning in relation to their particular conceptions of learning or self-assessment. This was most evident in learners who largely held a conception that learning was about being able to memorise and reproduce information. Their main approach to learning was described as practising, and this was of a repetitive, steady nature, without thought to the meaning or attempts to understand the content. In contrast, students who used practice as a strategy to assist in their understanding of a concept, held more sophisticated conceptions of learning, and used practice in quite a different way. This was most evident in examples where students described learning in out-of-school contexts such as counting to ten in Japanese for judo, practising a speech or practising batting techniques in cricket, when they did so with *intentional* learning goals.

Approaches to learning were described by students while they discussed how they viewed learning. It was almost as if these students believed that the way they approached learning was the way they viewed it. For example, students identified learning *approaches*, such as listening, paying attention, practising, repeating material, using peers to translate difficult conceptions, as learning. While these are means to learn, it was not until students held more sophisticated conceptions of learning such as understanding, or different ways of knowing, that a distinction seemed to be made between approaches to learning, that is, how they went about an activity in order to learn, and what they believed learning was.

Students who held more sophisticated conceptions of learning, such as viewing learning as understanding, identified strategies that would assist in their overall aim of learning, that is, to understand the content. Examples such as listening, questioning and practice were given, but it was interesting that within the context of these more sophisticated

conceptions of learning, practice took on a different meaning. Students used practice as a means to assist with their understanding; in contrast, students with less sophisticated conceptions of learning used practice as a means to regurgitate information without thought. There was a link, therefore, between what students thought learning was about, and how they approached both learning and self-assessment.

The students placed emphasis on the *point of learning*, and explained the point of learning was to get a job or to secure their future in the workforce. They made a link between learning and the type of job or income they would have. In addition to this, students felt that learning prevented them from becoming “ripped off” in the future. Most examples provided by these students were instances of shopping, and more specifically the dairy or local shop. Typical examples include:

*So in the future you don't, so in the future when you're going to the shops you know how much change you're going to get and things like that. Because sometimes they'll give you less and sometimes you'll get more and they'll... and then you'll know how much to give back. (M02:5)*

*Well, it's better to learn maths, kind of, like, that's a really good subject because it helps you, like you might get ripped off at a shop or something like that. It's, like, you just add up all the prices and suddenly you will pay too much... and that's...and you have to learn maths. PE, you don't really, because you don't have to actually, you don't have to learn that because that's just for recreational, so you don't need to, don't have to. (M09:16)*

The students' conceptions of learning illustrated the complex relationship between how they experienced learning, what they thought learning was for, and how they approached the learning task.

#### **5.4.2 The relationship between context and students' conceptions of learning and self-assessment**

When referring to various learning settings, there was a difference in the way students conceptualised learning and self-assessment. While students in general held more sophisticated conceptions of self-assessment in out-of-school learning situations, they did not necessarily hold these same views in relation to school learning.

When the number of students holding each conception is collated across the categories of description, it is possible to see a pattern in relation to the context within which the conceptions were expressed. In general, more sophisticated conceptions of learning and

self-assessment were identified in an out-of-school context. There were more students clustered in the lower, less sophisticated categories for both learning and self-assessment in the school setting. For example, Figure 5.7 shows that in total 13 students had a conception of learning as “memorising and reproducing” (learning category B) in a school context, but only eight held this view in an out-of-school context. There were four students who held a conception of learning as understanding (learning category D) in a school context, yet eight students held this view in an out-of-school context. This suggests that overall, students tended to hold more sophisticated views of learning in an out-of-school context. In a similar way, students also tended to hold more sophisticated views of self-assessment in out-of-school contexts. For example, six students held a conception of self-assessment as using criteria (self-assessment category D) in a school context, but nine students held this conception in an out-of-school context. This supports the notion that *context* makes a difference in how students conceptualise learning and self-assessment. More specifically, the out-of-school context appears to encourage higher, that is, more inclusive and sophisticated conceptions of both learning and self-assessment.

	Conceptions of Learning		Conceptions of Self-assessment	
	School	Out-of-school	School	Out-of-school
<b>A</b>	1	0	4	1
<b>B</b>	13	8	10	7
<b>C</b>	6	8	5	7
<b>D</b>	4	8	6	9
<b>E</b>	2	2	1	1
<b>F</b>	–	–	0	1
<b>ALL STUDENTS</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>

Figure 5.7. The number of students holding conceptions of learning and self-assessment in school and out-of-school contexts

When using both out-of-school and school contexts as the basis to discuss learning and self-assessment, students talked about using the support of other people to identify both what they should be learning as well as to self-assess that learning. This occurred in two ways. First, models (both adult and peers) were used to demonstrate a performance, and second, peers were used to translate difficult instructions or concepts. When

demonstrating a performance, adults or peers were used to show what the end product would look like. This mainly occurred in out-of-school contexts where students reported “watching” how a head should be placed in dance, the correct way to stand when batting, or the right movement in judo or karate. In a different way, peers were used to assist learning. In both contexts, there were examples where students used peers to help *translate* difficult concepts. For example when the student wanted to learn to use the remote control she used her brother’s advice and instructions when she could not understand her father’s instruction, and when another student had difficulty with a mathematics concept she enlisted the support of her peers to explain it to her.

When describing learning in out-of-school settings, students seemed more aware both of what they had learned and of what they needed to learn. There was a focus on the *whole* of learning out of school, such as making picture frames, jazz dancing, playing the piano. In contrast to this, at school there seemed to be a sense of having learned in isolated units, such as certain spelling words, multiplication tables, writing stories on a theme, and learning appeared to be experienced from parts to the whole. Often the student was unaware of what the *whole* was. Another feature of out-of-school learning was voluntary participation and choice of activity, which contributed to the students’ interest in undertaking the activity, because they realised they could opt out of learning if it became too difficult or too boring in the out-of-school settings. Because they were aware they were not obligated to take part, there was a more relaxed view of learning.

The students’ conceptions of learning and self-assessment appeared to be influenced by the context in which they participated. However, the results from Phase One were based on student interviews only, and students were not therefore observed in different learning settings or contexts. The following chapter examines more closely the role of context. Through presenting the results from the second phase where the researcher observed seven learners in a number of learning contexts over a school year, a more comprehensive picture of student learning and self-assessment emerges.

## Chapter 6

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### Ethnographic Results

*New members of a community are active in their attempts to make sense of activities and may be primarily responsible for putting themselves in a position to participate. Communication and coordination with other members of the community stretch the understanding of all participants as they seek a common ground of understanding in order to proceed with the activities at hand (Rogoff, Baker-Sennett, Lacasa, & Goldsmith, 1995, p. 62).*

Student learning occurs within a variety of settings and cultures, and participation in a diverse range of activities was a key feature of learning for all the students involved in this study. This chapter examines data collected through observations in the school and out-of-school learning environments, interviews with teachers, interviews with the parents of seven target students, and interviews with the seven target students over the course of 1 year during Phase Two of the study. The data sets are explored through Rogoff's (1995, 1996) three planes of analysis, which make it possible to bring certain aspects of learning and self-assessment activities to the fore, while allowing other aspects to move to the background. In this way it is possible to examine the influence of the overall context (community plane), students' interaction with others (interpersonal plane), and how the activity ultimately affects the student's approach to the task (personal plane). As this study predominantly took place in a school setting, the results focus on learning activities within the school setting. The use of out-of-school settings provided further contexts and another perspective to examine how students experienced learning and self-assessment.

This phase of the research set out to identify how different learning contexts in both school and out-of-school settings influenced students' conceptions of learning and self-assessment. The research questions associated with this phase are:

- *What is the nature of the learning context within a school setting for years 7 and 8 students?*
- *What is the nature of some of the learning contexts within out-of-school learning settings for years 7 and 8 students?*
- *How are students' conceptions of learning and self-assessment related?*
- *How are students' conceptions of learning and self-assessment mediated by context?*

All students, teachers and parents who took part in this study, and whose comments are used in this chapter to present the results, have been assigned a pseudonym. The students are listed below in Figure 6.1.

Code from Phase One	Pseudonym	Parent (s) interviewed	Out-of-school activity used for observation
F03	Helen	Mother	Trampolining, go-kart riding, horse riding
F06	Jane	Mother	Dancing, horse riding, sport
F07	Deb	Mother Father (informally)	Abseilling, sport, archery
F11	Marie	Father Mother (informally)	Netball, horse riding, sport
M05	Peter	Mother and father	Judo, horse riding, sport, cross country
M06	John	Mother and father	Cross country, sport
M09	Chris	Mother	Cricket, abseilling, sport
Class teacher Mr. Jones; Team leader Mrs. Hope; Deputy Principal Mr. White			

Figure 6.1. Participating students, parents, and teachers in Phase Two

During the presentation of results for Phase Two, data from the observational notes, interviews and selection of works are used to illustrate points made. The coding for the selected data is outlined in Figure 6.2:

Method	Code used	Explanation
Observation	19.2.97/1:1	Date of observation/number of observation: page number
Student interview	5.5.97/Peter:4	Date of interview/ Pseudonym name of student: page number
Parent interview	6.5.97/Peter's mother:10	Date of interview/ Pseudonym name of student and "mother" or "father": page number
Work sample	WS:19.3.97	Work sample: Date of observation when work sample collected
Teacher interview	6.5.97/T:10	Date of interview/ Teacher: page number

Figure 6.2. Explanation of coding reported data

	CONCEPTIONS OF LEARNING		CONCEPTIONS OF SELF-ASSESSMENT	
	School	Out-of-school	School	Out-of-school
<b>F03</b>	D	D	D	D
<b>F06</b>	B	B	A	B
<b>F07</b>	B	B	B	B
<b>F11</b>	B	C	C	C
<b>M05</b>	E	E	E	F
<b>M06</b>	C	D	C	D
<b>M09</b>	C	D	C	D

Figure 6.3. Conceptions of learning and self-assessment for students selected to take part in Phase Two

The seven students participating in this study held representative views of learning and self-assessment (see Figure 6.3), and were involved in a number of learning situations both in school and outside of school. The results from the individual students were used as a collective to explore the *contexts* in which learning and self-assessment took place, and therefore the results are not presented as individual student case studies. While the results of this phase are represented through the experiences and examples from the student observations, it is not intended that these results provide a psychological analysis of individual learning styles.

As part of the school's assessment policy, the students undertook a number of tests within the Progressive Achievement Test (PATs) series tests at the beginning of the school year. These norm-referenced tests of Mathematics, Reading, Listening and Study skills are made available by the Ministry of Education, through the New Zealand Council for Educational Research (NZCER). These tests are available to all schools to use on an annual basis at the start of the school year, but are not mandatory. Schools can administer these tests during February as part of the school's assessment schedule. The results are used by some teachers to group students for different curriculum areas. The results recorded in Figure 6.4 are represented by age percentile of the participating students, and are incorporated to show that the participating students' scores on these tests represented a range of percentiles.

Code from Phase One	Pseudonym	PAT results represented in age percentile March 1997			
		Mathematics	Reading vocabulary	Study Skills	Reading comprehension
F03	Helen	46	52	50	49
F06	Jane	81	42	67	25
F07	Deb	69	83	69	91
F11	Marie	40	85	59	70
M05	Peter	84	47	76	49
M06	John	69	58	79	74
M09	Chris	94	65	58	58

Figure 6.4. PAT results represented in age percentile

The use of the terms context and culture within the chapter are related to earlier discussions within the literature review and methodology chapter. While a setting is used to refer to the physical layout, surroundings or place of a learning activity, the use of context and culture require further explanation. References to context are made when identifying settings that have inherent cultural expectations. For example, an out-of-school setting could be a judo class held in a local community hall, but the context refers to the associated art of judo, the participation in the class and the expectations of the coach and the students. Context is therefore associated with the meaning given to the setting and the social organisation of instruction. The individual and the context are inseparable, as each impinges on the other (Lave, 1988, 1996; Rogoff, 1984, 1998). This theory of the learner as an individual within a wider social context (Vygotsky, 1978, 1981) emphasises the importance of the relation between the learner and the context. As discussed in chapter 2, contextual features play an important role in determining an individual's ability to accomplish tasks (Boaler, 1993; Ceci & Roazzi, 1994; Lave, 1988; 1996; Rogoff, 1984, 1995).

Culture, on the other hand, is used within this chapter to refer to the shared symbols and meanings that arise through groups of people working or living together in communities (Woods, 1992). The classroom develops ways of thinking and acting that are often tacit understandings or expectations, and these form an inherent culture of school-life and of a school (Alton-Lee & Nuthall, 1992; Metcalf & Hunt, 1974; Woods, 1990). The knowledge or understanding people give to actions within a setting or context is culturally bound. While schooling is a cultural practice (Matusov et al., 1998), students take part in multiple cultures that can be explored through different

settings and contexts (Brown et al., 1989a). Each culture frames its own activity, and by doing determines the context.

The next section (section 6.1) will describe the learning contexts students were involved in, so that the succeeding two sections (sections 6.1 and 6.2) can explore the data using Rogoff's (1995, 1996, 1998) three planes of analysis. Section 6.1 provides data to illuminate the context in which this learning and self-assessment took place, and highlights the cultural practices that occurred in both school and out-of-school contexts. It describes the ways learners were enculturated into a variety of learning cultures in both school and out-of-school settings, and how these learners were required to adapt to each specific setting as part of their learning. This provides a framework to explore the way students approached both learning and self-assessment activities within these contexts. The data from the observations were examined over time to identify what occurred while students were involved in learning and self-assessment across contexts.

The following sections will present the data first on learning activities (section 6.2) and second on assessment practices (section 6.3) as viewed through the three planes. Each section looks at practices within a school environment, followed by a contrast with practices in out-of-school contexts.

## **6.1 Contexts and cultures**

The seven students participating in this study were part of a class of 34 students within a larger syndicate team of a total of four classrooms and 120 students. While they stayed in their main classroom for the majority of their subjects, there were times when the students went into other teachers' classrooms for mathematics. Other subjects, including food and nutrition, home economics, art, library, and technicraft were situated in other parts of the school or in other classrooms.

The main classroom for the seven participating students was a big room with large windows along one wall creating a light airy effect. There were two doors to the classroom, both of which were used. One door led from the internal corridor, which the students generally went through to go into the classroom as their bags were hung along this corridor. This door led into the front of the classroom and all visitors to the room used this door. The other door was situated at the back of the classroom and led to an

outside playground area through a small bay. This door was generally closed during class time. The desk arrangements within the classroom changed on a fortnightly basis and students were free to choose whom they wanted to sit beside. When the students moved their desks each fortnight, the grouping of desks was also changed, which created different physical effects in the layout of the classroom throughout the year. While students were able to choose whom they wanted to sit beside, the teacher made the decision on the arrangement of the desks.

The observations within the school and more specifically the classroom setting highlighted a number of assessment practices within the school and classroom. At the time of the observations, the school was using Ministry of Education endorsed norm-referenced tests (e.g., Progressive Achievement Tests) as well as teacher-developed informal classroom assessments. Through recent assessment policy documents, the Ministry of Education identified that teachers should use assessment practices that would “improve students’ learning and the quality of the learning programmes” (Ministry of Education, 1994, p. 7). Both curriculum and assessment documents encouraged teachers to incorporate self-assessment and peer assessment in classroom-based assessment procedures (Ministry of Education, 1989; Ministry of Education, 1993b; Ministry of Education, 1994).

The Ministry of Education supported the introduction of these new practices in a number of ways, including commissioning the development of a video on self-assessment to be used in teacher development programmes (*Self-assessment in the New Zealand Classroom*, Bourke, Poskitt, & McAlpine, 1997), and commissioning a number of teacher professional development programmes.

At the time of the research, the participating school had not taken part in these professional development programmes, but the school’s assessment practices were linked to the curriculum and assessment documents. However, these documents were broad and not “prescriptive” in the sense of identifying what assessment strategies should be employed. Apart from distinguishing between assessment practices that reported progress and provided summative data, the curriculum documents provided the principles of effective assessment, and outlined a range of practices that could be adopted. Therefore, the school and the individual teachers could largely choose how they assessed student learning, as long as they could provide *evidence of learning*

(Ministry of Education, 1994). The documents strongly encouraged a range of assessment techniques, that were both valid and reliable over a variety of activities.

The diverse range of learning contexts involved in this study had one common thread. In all settings, part of the student's learning involved interacting with a variety of teachers, teaching styles and varying degrees of teacher expectations. In both school and out-of-school settings, where an adult took a teacher or facilitator role, there were explicit and implicit rules and expectations to which the students were expected to adhere. In the school setting, where the school was made up of five syndicate teams each consisting of four classes, the students were exposed to a range of teachers and teaching styles. The observations involved a number of settings within the school, and also involved a variety of teachers. While Mr. Jones, the classroom teacher, was the predominant teacher involved in this study, the participating students had different teachers for technicraft, food and nutrition, art, and other cultural activities. Within their syndicate of four classes, the teachers often cross-grouped in different curriculum areas such as mathematics, which meant the students were exposed to a number of different teachers.

In the out-of-school settings, the observations involved judo, dancing, tennis, cricket, netball, trampolining, and activities such as horse riding, abseiling, orienteering, go-kart riding, archery and rope climbing at the school camp. While there were structures surrounding each of these settings, they were usually determined by the cultural and historical aspects associated with the activity. Class sizes were generally small, or had a high student-teacher/coach ratio. The tutor or teacher had usually been enculturated into the setting previously (i.e., netball coach and referee had played netball, the judo coach had a brown belt in judo, the dancing teacher had learned to dance, the tennis coach was a tennis player). Therefore, the teachers were likely to have been immersed in a cultural activity that had rules, expectations and standards associated with their sport or art. In all settings, students were involved in learning and adapting to these rules and different styles of teaching and teacher expectations.

One key difference in learning activities in out-of-school settings, as distinct from a school setting, was that attendance or participation in the activity was voluntary. Even in the out-of-school setting during the school camp, participation in each event was voluntary, and there was no compulsion to attempt any activity. A key factor in out-of-

school activities, therefore, was the freedom and choice for students to participate. The students had chosen to take part in these extra-curricular activities outside school time, or had specifically chosen to take part in specific activities during school camp. In the observations undertaken during the year, it was clear that students' freedom to choose to take part in an activity contributed to fewer problems with discipline, although there was still some evidence of off-task behaviour in out-of-school settings. For example, in netball, while the game was in progress the goal attack threw passes to her spectator friend while play was at the other end of the court (23.8.97/22:1); in a dancing session, Jane stopped dancing with her partner and danced on her own because he kept standing on her feet (27.8.97/23:2); and during judo two young children began to fight when their throws did not work (28.8.97/24:4).

Observations in this study indicated that the classroom culture was created through a combination of teacher, student and organisational variables within the wider school context. The choices made by the teacher in terms of a series of "sayings" he displayed on the classroom wall indicated the style and atmosphere he sought in the classroom. Throughout the year, while these sayings changed, they all reflected the teacher's desire to create a supportive and facilitative environment for the students. The sayings included:

- *Your mind is like a parachute...it won't work unless it's open. (19.2.97/1:1)*
- *You've got to have a dream..If you don't have a dream, how're you gonna have a dream come true. (in home sample books 7.5.97/12:2)*
- *Look at yourself and be proud., after all, there is only one of you. (21.5.97/14:4)*
- *Winning isn't everything – it's the only thing – Vincent Lombardi. [Underneath the quote in a different coloured chalk questions were posed] – Do you agree with this quote? Who might agree and why? (3.9.97/25:1)*
- *Let your true colours shine through. (3.9.97/25:2)*

Mr. Jones made his philosophy explicit in other ways. During the year he had responsibility for a team musical gymnastic display. He chose the music for the display and, in one observation of a practice performance, he explained that the songs chosen represented the team's philosophy. The music during the performance included themes such as "one vision", "being kind", "one dream", and "give it your best".

In an interview with Mr. Jones at the end of the school year, he indicated this philosophy further. As he states in the extract below, the learner's ideas extend his thinking as much as he assists the learner.

*There's so much information that the children have, so much they want to contribute, that if I guide it too much or if I say 'this is how it's going to be'... there's so much ... you cut it and say this is the way it is but in actual fact the children have different ideas and different things that they can contribute, and if you say that 'this is it' then they miss out, and other people miss out on some of the things. So I think it's important to grab as much as you can and ask children, 'well, what do you think about this?' and we start building up ideas and it extends me and it extends them and it promotes thinking about the situation. (12.12.97/T:1)*

Observations during weekly assemblies within this school provided an opportunity to examine an aspect of cultural activity occurring within this school. Assemblies, held on a weekly basis, were formal events where specific rules and regulations were made apparent to all students. The main rules in relation to the assembly, as described by both teachers and students, related to the maintenance of student order and control. The students knew that they could not enter an assembly once it had already commenced, that they sat in a boy-girl-boy-girl combination to discourage talking, and that talking or noise were not tolerated during the assembly.

Teachers were aware of the rules and regulations, and while they monitored the compliance of the rules they did not necessarily agree with them. Assemblies were recognised as being part of the historical and cultural features of the school. One teacher explained when the researcher asked why the students were so quiet in the assembly:

*"Fear...plain and simple, it's all about fear." I asked her to explain further, wondering what the students would be fearful of. She explained that these Friday assemblies were traditional, the students' parents could remember them, and they had both historical and cultural significance. She said not one student would dare to talk. They would be asked to stand in front of the whole school. The whole group would have to go back outside and come in again. "It is humiliating for them." She went on to say that when drama groups came or when a school play was put on for the school she always felt sorry for both the performers and the students observing. "They're not allowed to laugh, or comment, or enjoy the thing...they just can't make a noise." (28.2.97/2:1)*

Another teacher reported the event in a similar way during an observation months later:

*When visiting performers are involved in an assembly and want audience participation, they have a difficult time getting it because of the strict rules that are enforced during normal assemblies. The students cannot switch easily into a behaviour that is usually not accepted in any way. (12.9.97/26:4)*

In an interview with Marie, one of the target students, the assembly rules were further discussed, and it is interesting that while Marie is aware of the rules and expectations she is unsure of the rationale. As she states “*I don't know why*”. Marie explains:

*We have to line up boy girl and we have to be all tucked in and everything and, um, we sit on the bleachers and depending what sort of assembly it is...like if it's a sport assembly we are allowed to cheer for our team, or if it's just a speech assembly or something, we are not allowed to talk...we are supposed to be all neat and smart..we have to be really quiet. I don't know why. [R: what would happen if someone broke that rule?] If the teacher saw them, they would have to go, be sent out or they would have to stand up right in front of all the assembly. It would be embarrassing. Probably everybody would laugh at you. (17.3.97/Marie:7)*

Deb, another student also identified with the “no noise” policy:

*Mr. White sends you out if you are noisy. He sends you out if you are talking and whispering. I think it's not good because you should be allowed to talk about what the speech is being said. [R: You know how sometimes you are not allowed to talk in class but kids do anyway, why don't you just talk in assembly then?] 'Cos, I think, they, it's where the whole school's there, to see you get made a fool and you get more, worse punishment. Like in class you get a detention but you get a detention as well as see Mr. White in his office and all that. (19.3.97/Deb:5)*

### **6.1.1 Behaviour and learning management**

Whether in a school or out-of-school setting there were codes that governed student learning and behaviour. As mentioned earlier, in both contexts students became accustomed to rules, regulations and expectations. The way behaviour was managed by teachers formed part of the classroom and school culture. This became increasingly evident through the second phase, where teachers were observed dealing in diverse ways with student behaviour, and students responding to the different expectations of behaviour and of the rules associated with behaviour.

The two examples below demonstrate how learners took part in customs associated with their learning. The first example is from a judo class, and the second extract is taken from a dancing class.

*The students are now all in a line on their knees. The coach explains some coming events. There is a competition on and he tells them if they are confident enough to enter, to see him after the lesson. They all bow and then leave one by one. (28.8.97/24:4)*

*They are now dancing with partners, and they change over with each line and get a different partner. It seems to be not just a matter of learning steps but there is a need to learn sequences and keep in time to the music. There is some more*

*waiting time while the teacher sets the music. There is a structure and routine that I have now figured out. Students evidently don't need to be told because they are used to it now. It must be a routine with them. Learning routines is an important part of this class. (27.8.97/23:1)*

Having established a standard form of practice through explicit and implicit rules and regulations in both school and out-of-school contexts, teachers managed student learning and behaviour through a number of ways. Within a school setting, the control of students occurred at all levels – individually, and within either small or large groups. The management of behaviour was often a priority for teachers but it was handled in various ways depending on the teacher and the setting. As a result, the students became familiar with a variety of methods adopted by teachers to handle behaviour.

Various techniques were observed being used by the teachers to maintain control in the classroom. These included: providing rewards for appropriate behaviour; inciting fear of the consequences for undesirable behaviour; creating competition amongst students and between groups; positively supporting the student when they were experiencing difficulty and moving off task; and shouting at individuals or the class as a whole. The predominant approach teachers were observed to use for maintaining class control was simply keeping students on task. Teachers used a variety of strategies in their attempts to keep students on task, and to keep them actively engaged in an activity.

Within the different learning contexts that were part of the school setting, appropriate academic and social behaviour was encouraged, rewarded and displayed. For example, teachers displayed student artwork on the wall of classrooms and hallways as a public means to show students' work was appreciated and valued. These pictures also provided good models for students.

Another system set up in the school, and carried out in the classrooms to control or encourage student behaviour was a token economy system: in the target students' classroom, each student was assigned one of eight colours, and points were awarded for a variety of reasons, both work- and behaviour-related, which contributed to a point system. There was a picture of a large basketball hoop on the wall, with steps leading up to the hoop. Along these steps there were different coloured circular stickers (corresponding to the eight colours assigned to students) placed at various steps. The

system was described by a student during the first observation in February. Notes from the diary state:

*Each person in the class is part of a colour team - blue, gold, green, mauve, pink, red, tan, yellow. There are ten steps on the chart and each point takes you up a step. When you get to the tenth step you are given a circle sticker which goes into a basketball hoop. Then you start again. The aim is to see how many stickers (basketballs) you can get in the hoop and then after a time there is a reward for the highest number. There are about four students in each class per colour and this system runs across the school. (19.2.97/1:10)*

This system of reward was employed for on-task behaviour, appropriate classroom behaviour, speed in completing mathematics equations (26.5.97/15:4), and the number of mathematics equations completed (19.2.97/1:9).

Competition was a major means used by teachers to control student behaviour. It was not only demonstrated through the systems described above, but in more subtle ways where teachers used students to model appropriate behaviour first, and then requested other students to match or better that standard. For example, in a team assembly involving four classes, the teacher wanted to maintain control and sought orderly and quiet behaviour while moving large groups within the hall. In the extract below, the teacher is working with 120 students and moving 30 students at a time. She uses the performance of one group to model the expected behaviour and to create a competition to challenge the other groups to do better. This enabled the teacher to manage the large group of students successfully.

*Teacher blows her whistle again and says she wants all students back on the floor. She says it's a competition. First all students on one side will come down from their benches and sit on the floor quietly. She will then see whether the other side can move as quietly and quickly as the first group. She gets the first group (about 30 students) to move back to the centre of the hall. They move quickly and quietly. They sit down and wait. The teacher says to the other group (another 30): "that was incredibly awesome...now you've got a hard act to follow." (6.3.97/3:8)*

Individual teachers used their voices in specific ways when wanting attention or calling students back on task. The more experienced and effective teachers used controlled, calm, low voices, whereas other teachers who appeared to have less control over the students used shouting techniques. However, raising their voices seemed to backfire on the teachers and actually raised the level and tone of the students' voices. Techniques such as shouting were observed only on rare occasions and tended to be teachers with little experience, such as student teachers, or relief

teachers, where students seemed to find it a game to see how far their behaviour would be tolerated. The following extracts are taken in different classes but it is the same relieving teacher.

*There is a relieving teacher (RT) in the classroom. The students are working from a worksheet. The RT is asking the students for answers to problems they have been working on. The classroom is noisier than on earlier occasions with the regular classroom teacher. Helen and Deb have their hands up to answer. Teacher seems to be having trouble with control. She says SHSHSHSH often and when she asks one boy for the answer and he gets it wrong, she says "Well, you're wrong, so I suggest you listen". (29.5.97/16:1)*

*The relieving teacher was trying to get class attention. Clapped her hands and waited, but noise continued. She clapped her hands again and yelled: "Listening, listening, waiting, still waiting for everyone to be quiet." The noise continued. (29.5.97/16:3)*

Students responded positively to teachers who held high learning and behaviour expectations for their students. However, when these same students worked with other teachers who held lower expectations they tended to perform at a lower standard. Students seemed perceptive in recognising what the teachers expected from them. Often teachers gave subtle messages through their directions, which provided insight as to what they expected from the students. For example, a student teacher commenced a science lesson by informing the students how to handle scissors and instructed them not to use the scissors inappropriately or they would be taken away. In another example, a student teacher taking science in the classroom, provided students with trays of water, and began the lesson by telling the students that "We don't want water everywhere...it'll be your job to clean up if it does" and then "If you start fighting with water, that's it..we'll stop there" (21.5.97/14:7). However, in contrast to this approach, Mr. Jones who was also in the room immediately responded with, "That won't happen", to indicate his belief in the students that they would cooperate with the student teacher. In this example, Mr. Jones also demonstrated a powerful classroom management strategy by inherently alerting the students that appropriate behaviour was expected.

Another example of the various ways in which teachers managed student behaviour is illustrated through a team assembly activity. The four teachers were working with a large group of students (about 120) on a musical production called "Animalia", which involved the students taking on animal roles. There was a group of boys who were "monkeys" and who showed little interest in participating appropriately. The boys were

not taking up the correct “monkey” position and seemed to take an uninterested view of proceedings. Mrs. Hope provided them with the opportunity to take part without their losing face. She blew the whistle and faced them saying “*when I turn around again, I’m going to see you in position as an animal*” (6.3.97/3:9). The need to comply with the teacher’s request on the one hand, and the need to comply to their own code on the other, is evident in the following observation taken at the time.

*The four boys look at each other and teacher turns back to the main group. They do not talk but remain in the sitting position. One boy attempts to move into an animal position. He looks at the other three. They remain in the sitting position, so he returns to the sitting position. Another boy then slowly moves into an animal position. The other three notice and move into the same animal position. (6.3.97/3:9)*

Later on in this episode the four boys again moved out of position and seemed ill at ease with what they were doing. While Mrs. Hope worked with other groups of students, another teacher moved up to the group and reprimanded them for not doing what they were supposed to do. She also had a whistle but used it in quite a confrontational manner. She moved away from the “monkey” group and watched from the bench. The following extract taken from the observation that followed, identifies two distinct teacher roles in creating control and facilitating learning. On the one hand, there is a teacher who with whistle in hand, attempts to control the boys’ actions, while on the other hand, Mr. Jones attempts to guide the boys through the activity using encouragement, support and modelling.

*Some students were not participating. These include the four boys. Again the teacher sitting on the bench blows her whistle and tells them what to do. She gives some severe reprimands but they make little attempt to change. Mr. Jones comes up and works with the group. He gives them ideas and talks to them about the animals they chose. He builds up a scenario about the animals, and what they like and don’t like. Teacher from the bench yells to the group “that’s what I told them!!” Mr Jones keeps working quietly with the group and asks the students questions about the animals they are talking about. The students respond and seem to be more actively involved. They show Mr Jones what they could do. He gives them excited approval and says he likes what they decided. He moves away and the four boys keep talking. I hear them discuss animals. The teacher from the bench yells to them SSSSSH HHHHHSSSSH HHH. Mr Jones moves back over, checks on the group and moves away again. Teacher from the bench yells at them “Oi! When the lion comes, you’ve got to duck”, and then blows the whistle, again in my ear. She sees that not all of those in the surrounding group have quietened and yells loudly “Oi! it means everybody”. (6.3.97/3:9)*

In the preceding extract, Mr. Jones, the teacher who guided the students through their acting role, provides an example of guided participation. In the context of this activity,

where the students and teachers were practising a musical drama to perform to the school, and a local primary school group, the teacher played a facilitating role in student learning. However, in another example, this same teacher showed how his expectations in a testing situation could not provide the same degree of support. When students talked through a classroom test, Mr. Jones used questions, to elicit their understanding of what constitutes a testing situation. The students were sitting an informal general knowledge test, where the student with the highest mark was to be picked to enter a school competition on general knowledge. There was a general knowledge section on New Zealand and then later world knowledge. Questions taken from the New Zealand section included questions such as: What is the capital city of New Zealand? Who is the deputy Prime Minister? What stretch of water separates the North and South Island? What is the Maori name for Mount Cook? In what year was the Treaty of Waitangi signed?

The students did not seem to be taking the test very seriously, and were sharing answers and talking. This example is illustrative of the teacher gaining control through questions and expectations. Mr. Jones does not shout or raise his voice throughout the extract:

*As they are working through these questions, the students are still sharing answers and there is some talk. Some students are covering their work carefully and not allowing others to see it. Mr. Jones says "Shsh don't talk please..keep your work covered". The level does not go down. Teacher seems irritated. He says:*

*Mr. Jones: What are you doing?*

*Student 1: A current affairs quiz.*

*Mr. Jones: What's another name for it...beginning with t?*

*Student 2: Test.*

*Mr. Jones: Right..and what are the rules with a test?*

*Student 3: Be quiet.*

*Mr. Jones: Right..you don't talk..and keep your work covered. (3.9.97/25:7)*

As described above, teachers used a variety of means to gain student control. However, inappropriate student behaviour which was not detected by teachers did occur in class sessions, and this impacted on the overall learning environment for many students. In general, students did not report such behaviour, and in the first 8 months of the observations, one of the participating students, Chris, distracted and attempted to hurt other students. For the purposes of this study, this behaviour has been termed "underground behaviour" to distinguish it from inappropriate behaviour that is seen and responded to by teachers.

The following extracts are taken during observations over a 4-month period:

*Chris is now running around the room with a ruler. He is going up to boys and slapping them on their legs with a ruler. Helen still working. Chris now slaps boy on his back with ruler. Is not aware of being observed. (28.2.97/2:4)*

*The students line up ready to enter the hall. As usual they take the boys/girls division for lines. It seems that they only line up this 'boys only - girls only' way. Chris is near the back of the boy's line. He hits out at one of the boys, and as he walks to the hall takes two steps back which has the effect of banging the person behind him, who was not expecting the backward movement. (6.3.97/3:7)*

*Some children now reading. Peter and Chris finished. Chris kicks boy under the desk. Boy swears at him. John and Helen still working. Chris continues to kick boy. (11.3.97/4:3)*

*(sport) Peter has a sport's bib on. Chris tries to get a cone. There are arguments over whether someone is tagged or not. There are also fights over who will get back. A boy raced over to Chris to tag him. Chris pushed him vigorously rather than get tagged. Chris seems to make up his own rules and is very physical in playing the game. The teacher is not able to control the game. Chris becomes aggressive and highly competitive often at the expense of others in both his team and the other team. (23.6.97/19:3)*

Much of this behaviour was typical of some of the students who were observed poking out their feet to trip others (one strategy used by students while filing into the school assemblies), fighting, taking books or equipment off each other, hairpulling, and throwing objects at each other.

### **6.1.2 Student culture**

Consistent with other studies there was evidence to suggest that students have a specific culture that plays a role in facilitating student learning but is not always accessible to the teacher (Metcalf & Hunt, 1974; St. George & Cullen, 1999; Woods, 1990). Throughout the observations, the researcher became aware of a variety of ways students went about their learning tasks that were not always apparent to the teacher. In particular, while the control of student behaviour en masse was a priority for many teachers, they appeared unaware that student behaviour could be engineered at another level and invisible to the teachers.

Students directed their energies to learning something, although this was not always the same "something" that the teacher had in mind. Often when the teacher identified students as being on-task with the planned activity, they were not, and when teachers

thought students were off-task, they may have been on-task but in another way. This is illustrated in the interview with Chris' mother who recalled an incident in her schooling involving herself as a learner. She recalls:

*You weren't encouraged. You were always put down. I mean, one day I was trying. I still remember it and it really put me off. At high school I was writing this English letter in my workbook and my pen had run out of ink. Those were the days you used to have fountain pens and we used to have biros too but I preferred the fountain pen and the fountain pen had run out of ink and she was telling us and we had to write what she was telling us and I wanted to write it neatly and so I started writing in pencil because my... and she came over and smacked me on the hand, literally slammed my hand so it hurt from using a pencil and I never had a chance to explain that I wanted to re-do it later when I had more ink in my pen and so therefore I just got my biro and I scrawled, you know she took..she killed it...(6.5.97/Chris' mother:10)*

Regardless of the rules and regulations set out by teachers, there were often understandings within the student groups that dictated their response to the rules, and in so doing, created a sub-culture within their group. One example is based around issues about the length of the girls' school uniform. While undertaking an observation in a food and nutrition class, there was a group of three girls discussing skirt length.

*Helen and another student are talking about skirt lengths – "this is short" says the student. She shows Helen how to roll up skirt from the waist to make the skirt shorter. Helen attempts to roll up her skirt. (28.2.97/2:5)*

This did not meet the approval of senior management at the school, as observed in a staff meeting a week later.

*The AP is giving out notices for the staff. She is talking about notices in general, and then tells staff that girls are beginning to hitch their skirts up again, and could they please keep an eye on this trend. (6.3.97/3:6)*

In an interview with one of the target students, Marie noted that "some people get their skirts, and they find it's too long so they have to roll it to make it short. I like it quite short". When asked whether the teacher knew that students roll their skirts, she replied "Yeah, the teachers know, but they don't really mind. You can have it as short as you like" (17.3.97/Marie:8).

Some students used skirt rolling as a means to identify themselves within a particular group. Another way that fashion identified group membership was through the way socks were rolled. Again, this uses a piece of school uniform in a way that it was not intended to be worn. Students were able to adapt regulations to suit them when required. These were introduced quietly and subtly, and discussion about them occurred

within school class time. These trends functioned like a badge to associate with a particular group of students. They also disappeared quickly once too many students had associated themselves with a particular fashion.

The researcher first became aware of the sock trend in May. The following extract is taken from an observation taking place during an art lesson.

*There seems to be a new fashion with socks. Some girls have pulled their socks over their heel so their ankle shows. They have rolled the sock back under the foot. It seems to be those girls who are trying to be in the "cool" or "in" group. (16.5.97/13:2)*

Some weeks later, another target student, not previously part of this group is observed wearing socks in this way (29.5.97/16:3).

Another way some students associated with a particular group was if they had been initiated through similar experiences. One typical example for this age group as described below, is being grounded by their parents. The following extract shows first, that the boy did not realise the importance of this initiation (but soon learned), and second, that students provide a code through these informal conversations. Learning is occurring. This extract is taken from an observation in an art lesson, where four students are working on their own individual painting on the floor while discussing a variety of important things associated with their lives including the break up of their parents' marriage, shoes, travel, being grounded and so on.

*The group are now discussing being grounded. This is all occurring while they potter with their work. One boy tells the girls "I have never been grounded in my life". They look at him as if that was nothing to skite about and then a student says "you must be good then". She then tells them that her mother tries to ground her but it doesn't work any more because she does not listen to her mother. (16.5.97/13:3)*

Some aspects of student culture involved peer pressure that had negative implications. This was illustrated in examples where students felt compelled to conform to peers' ways of thinking as well as ways of looking. There were occasions where the students felt the pressure to conform within their own peer group outweighed their own belief systems. One example involved three of the participating females, Deb, Helen and Marie. While they had all been friends for the main part of the year, they went through a period where Deb became an outcast within the group because Helen, for whatever reason, wanted her out of the group. However, Marie was caught in the middle, and it is

her experiences of the peer pressure that this example illustrates. She remained a friend with Helen and as a result felt (against her own judgment) she must also treat Deb as an outcast.

The researcher first became aware of this when Deb and Helen were in the same mathematics group, and it seemed that Helen was attempting to distance herself from Deb.

*Deb is working on her own. She attempts to get Helen into discussion over a pencil case and the work, but Helen is talking with another girl and sharing a book with the other girl beside her. She does not seem particularly friendly and is distant. She does not engage in conversation with Deb. Deb is working on her own with her own textbook. (29.5.97/16:2)*

This became more evident when Marie, who liked Deb, but was currently a close friend of Helen, showed me her journal diary. The journal writing was particularly interesting. Part of what Marie had written (in reference to Deb) was:

*Today I feel confused. Most of the people I hang around with don't like this person. I do but they don't want me to like her. I feel sorry for her. Oh well that's life, man it's hard sometimes. (29.5.97/16:3)*

Deb, who was being ignored in this social circle noted in her diary entry only two days prior "Helen doesn't seem to like me any more and I don't understand why not?! It may have something to do with Jane and Marie but I don't know!" (WS:27.5.97).

In a more positive way, student culture provides a counselling and advice function. This is often effective because they are part of the same culture and are therefore better able to understand the problems and meanings associated with the various issues they grapple with on a daily basis.

Problem solving between friends and peers occurred on a frequent basis. Often the problem solving sessions occurred simultaneously with activities within the classroom. In one interesting session, the students are involved in a problem-solving session in mathematics while, at the same time, helping Jane to solve the problem of whether she should get a new outfit for her dance.

*Jane is talking to the group about her dance. She tells them that she and her dancing friend have to wear something exactly the same. She asks "How are we going to get the same clothes?" One of the girls suggests she go to Farmers [a national chain of department stores].  
The girl asks Jane "Is it a specific outfit?"*

*Jane says "Skirt and top".*

*The girl then says, "That's not a problem".*

*Jane: But I'm not going to buy a top just for that.*

*Girl: Then you can't be in it.*

*Jane: Hmmmmm (and continues working). (3.9.97/25:2)*

During a language activity, one student asked another why her hair was not as long as another child's in the class, who had hair to her waist. She said "*My hair doesn't seem to be growing anymore*" and the other girl replied "*It's because you've got split ends*" (3.9.97/25:4).

An interesting aspect of student culture was the fact that there were many occasions where students waited. Waiting appeared to be part of student culture, primarily in the school context, although it was also evident in other contexts to a lesser degree. Amongst other things, students waited to start an activity, to be given instructions, and to answer a question. Students were observed on numerous occasions amusing themselves while waiting. They waited for their teacher: (a) to arrive, or to get started; (b) to find the music; (c) to locate the play button on a piece of equipment; (d) to talk with another teacher or student; (e) to sort out stolen lunches; (f) to decide what activity to start next; and (g) to sort out a variety of problems (6.3.97/9:3; 12.6.97/18:5; 23.8.97/22:1; 27.8.97/23:1). However, this may not have been necessarily lost time for the student – it was a means through which student culture developed, grew and thrived.

### **6.1.3 Summary**

A number of different learning contexts were identified during the observations throughout the year. While visiting students in both school and out-of-school settings it became apparent that the contexts associated with judo, dancing, trampolining, sport activities, and camp-related activities such as horse riding, abseiling, archery and go-kart racing provided diverse learning opportunities for the students. Students were exposed to different teacher expectations in terms of behaviour and learning.

The results show that the students were involved in a range of learning activities in both contexts, and were therefore exposed to a range of cultural expectations. These were expressed through the different teaching styles and range of teacher expectations regarding learning and behaviour. The way teachers managed student behaviour in the

various settings formed part of the overall context in each learning session and, as outlined, students were exposed to a variety of techniques. Students responded in different ways to the behavioural strategies used by teachers, and appeared to adapt to each context. The results outlined in this section provide a framework to interpret the results outlined in the following two sections on learning and self-assessment.

The various ways of interacting with others during the learning process was another feature of student learning that occurred throughout the different learning activities. At times, interaction with adults and peers was encouraged, such as in a judo class and in dance class, while at other times interactions with other learners were actively discouraged, such as in a classroom-based test, or in a school assembly.

Student culture shaped another part of each learning context, which formed a further backdrop for the results in the subsequent two sections on learning and self-assessment. Each context helped define this student culture because the composition of students differed. For example, in the classroom-based setting, all students were of similar age, while in the judo class or dance class they were different ages and not necessarily school students. Of those that were school students in these community settings, many attended different schools, and therefore the blend of students within a judo class formed quite a different student culture to the class at school.

## **6.2 Learning activities through the three planes**

This section examines learning activities in a variety of settings using the structure outlined by Rogoff (1995, 1996) through the three planes of analysis. The community plane examines the overall learning environment. This is followed by an examination of the interplay between the learner and others involved in the learning activity (such as the teacher, peer or parent) using the interpersonal plane of analysis. Finally, through the personal plane of analysis, this section examines how the learner changes as a result of participation in the community and through interacting with others involved in the process.

### 6.2.1 Community plane

The community plane will be used to explore the way students became familiar with learning activities as part of an overall culture of the designated curriculum area. Within the school context, the physical setting often remained the same. The content of the learning and the *practice* associated with that learning had inherent associated customs. This means students can be involved in learning activities associated with a curriculum area, and can begin to develop skills and strategies for learning the content while learning to “think” or “act” as an expert in the area.

The community plane provides a vehicle to examine how learners becoming familiar with learning particular skills to develop mature participation in the activity. Two examples are used here to illustrate this. The first example uses speech-making, and the second uses a science example of the study of rivers. In both examples, the teachers are aiming to involve the learners in the activity within a broader framework of either speech-making or science. While the first example shows a successful transition to more mature participation, the second example highlights that while the student, John, had become more familiar with the terminology associated with rivers, he remained ambivalent about his understanding of the content, as he stated “*I don’t think I could remember all of them*” (11.12.97/John:2).

The first example takes place within the school setting, where students were introduced to speech making. The teacher provided them with the larger goal of becoming a “speech-maker”. The students had lessons on what constituted a good speech, how to write a speech and how to deliver it in an interesting and informative way. The teacher’s focus for the students was first on the whole (e.g., speech-making), then moved to learning about the parts that make up that whole (different aspects of speech production and communication to an audience), and finally focussed on how to become an expert in specific aspects of that whole (e.g., speech writing or delivery). In the following extract, Deb illustrated how she became a “speech-maker” through practice. She was endeavouring to master the overall goal of becoming a speech-maker through her strategy of practising. However, it was interesting that as the extract below indicates, Deb was not attempting to rote learn the actual words of her speech.

*Deb says she is going to say her speech first, so I ask whether it is OK for me to listen to it. She agrees readily. Her speech has been learnt from heart and she uses no notes. It is about advertising. It is 30 seconds. I ask how she can*

*remember all that speech, and she says "I practised, practised and practised. I practised in front of my cat". She said she changed the speech every time, as she didn't learn it word by word, but just the sorts of things she would say. (6.3.97/3:4)*

The second example is illustrated through another curriculum area, science, which shows how students are enculturated into a way of thinking. As part of a science module involving the study of rivers, students visited a science museum where a large model of a river was set up for them to view. This took place in an out-of-school setting at a local museum, where the teacher was a museum-based educator. A large display was also mounted on the wall with parts of the river (e.g., delta, estuary, and meander) integrated into the model. The students later made their own river model back in the classroom, into which they inserted aspects of a river such as a delta and estuary. For many of the students, learning about the river involved becoming familiar with the terms, and understanding each aspect in relation to the river as a whole. One student, John, showed an interest and enthusiasm for this topic, but had trouble remembering what each term meant. With the guidance of the museum teacher, he was assisted in learning about a delta and estuary.

*At the end of this session, the speaker drew the students to a board and asked key questions, for example, what is a meander? what is an estuary? and asked them to locate examples of these on a large wall map, and place a magnetic word describing the phenomena.*

*He asked such questions as:*

*"Find a meander."*

*"What is meander?"*

*"What is a delta?"*

*John responded to the delta question but his answer was inaccurate. He described it as where the river and ocean meet. The teacher said, "You have just described an estuary", and as John seemed keen to please he asked John to locate an estuary on the wall map and gave him the word Estuary which was on a magnet to place on the wall.*

*Other questions were asked about oxbows and sand bars and braided rivers. He has described a braided river to the students prior to this and used the analogy of a girl's braided plaits. This was the example the students used to answer him. It did not sound as if they understood what a braided river was, but knew it appeared or looked like plaits. (26.3.97/8:2)*

The extract above, was taken from an observation at the museum and highlights the way the teacher guided John through his learning. However, as John identified in an interview months later, he was still aware of features of the river but was not sure what

these were. The interview with John 9 months later, illustrates that while learning had occurred, and he had started to become familiar with the river terminology, specific learning about the parts was not evident. In the following extract from the interview with John, he had the photographs taken by the researcher during the observation at the museum, and the photographs of the river models made by the students as a subsequent activity.

R: *What was the point of making a model after going to the river, to the visit?*

J: *I think the point of making that model was to understand, to let the teachers know that you understood where a meander is and what it is and where the catchment is on the river and how the river can form and what sediment is and where sediment is normally found.*

R: *Okay, and do you know all those things now?*

J: *Yeah, I do.*

R: *So if you were asked to make a model of a river you'd know where to put all these things now?*

J: *Yeah, I'd ... probably know where to put most of them but I don't think I could remember all of them.*

R: *Did you know where to put them before you started making the model?*

J: *No, I didn't know what a delta was or ...*

R: *So how did you know where to put it when you made the model then?*

J: *Because when we went down to the museum, he ... he told us, because back here ... that guy's explaining on that board, he showed us some rivers and then he showed us where the delta was and where the river's water came out into the sea. (11.12.97:John: 2)*

Another student was even less sure about the nature of that trip. When Marie was asked what she learned during the museum trip, she stated that it was *"to learn about water, I think"* (10.12.97/Marie:5).

In many observations, students were learning part of a craft or activity. During the year, the students learned to make a film, which included writing a script, designing props, acting and even filming it. The following extract is taken from a portion of this module where a group of students are making a film from a script they had written. The following extract shows how one of the students had been assigned the role of camera person, and was learning to perfect this part of film making.

*There was another girl working the camera who was having trouble working the pause button. The teacher made sure she was able to start and stop at the correct times, and that she was also able to signal to the group when they were about to start so that the music could start at the same time. He asks the girl "Are you getting the hang of it?"...when he realised after the fourth scene she was able to do it on her own. She replied "Sort of". (1.5.97/11:2)*

In general, data from the observations indicated that learners needed clear expectations of the aims of the activity they were engaged in. However clear aims of an activity or explicit learning goals were not always provided in a school setting, as is shown in examples that follow. Where this did not happen, students were observed approaching learning in an ad hoc manner. When there was evidence learners had clear goals, expectations and objectives associated with an activity, and knew why they were undertaking a particular task, they were able to connect it to previous learning goals. In some school learning activities learners were *not* aware of what or why they were attempting a task, which impeded the learning process. In these situations, while the students often enjoyed the activity, they did not connect the learning with their previous learning or with the outcome identified by the teacher.

The following example, in a science lesson illustrates this point. In a science lesson taken by a student teacher, students were given circular pieces of paper and bowls of water. The students perceived the lesson as a game without any clear direction or stipulated aims in relation to the activity. They were asked to cut the circle into a flower pattern (a model was provided) and to turn the petals into the centre of the circle. They were then asked to place the closed flower onto the water and observe what happened. The students noted that the “petals” opened out to lie flat on the water. The students were then encouraged to experiment with different variables such as changing the size of the circle (flower), placing crayon on one side of the flower, and using different weight paper. By the end of this science activity, none of the target children knew what the purpose of the lesson was, or what they had learned. One student (Marie) noted that “*it was cool*” and “*reminds me of primary school*”. When asked why, she explained that she used to make windmills.

Another student (Deb) asked “*are they supposed to go really flat like that?*” when her flower first opened up in the water, and when she was asked by the student teacher (ST) what was happening, she replied “*it’s soaking up all the water*”. The following extract identifies that while the student teacher (ST) elicits responses about the experiment from the students, they are unaware of the wider context of the lesson. Even with the type of responses and hypothesis they were putting forward in this extract, none of these students could later indicate the point of the lesson or what they had learned.

*ST asks: Did you think it was more stiff because of the water?*  
*ST asks what would happen if they used different paper, different conditions. Do you think it'd always be the same? If it were bigger would it be the same? She asks what would make a difference:*  
*John responds: Shape*  
*2.00 p.m. Peter is listening attentively.*  
*ST: Any way of finding out about these things?*  
*Students: Have to compare different things.*  
*ST: Yes, and there's a word for that: variables. She writes it on the board and underlines it and beside it puts (different things) in brackets.*  
*ST gives out brown paper to the students and asks them to do the same activity. She said it was another variable and for them to see whether it makes a difference.*  
*Group were keen to get going and give it a try.*  
*ST: What do you think will happen?*  
*Deb: I don't think it'll make much difference.*  
*John thought the brown paper was lighter and therefore the flower would open up faster. He was quite sure of this.*  
*Marie said "Um, probably it's going to sink".. I ask why and she said "Because the paper's thicker".*  
*Helen: I don't think it'll make much difference because it's only a little heavier.*  
*Peter: I think it'll be slower because it's heavier. This paper has a lot of oil in it.*  
*ST leads a discussion on how the variables could make a difference in terms of how quickly or slowly the petals will open. The students respond with suggestions such as size and materials.*  
*ST introduces the notion that waxing (i.e., crayon) could make a difference if the paper was not able to get wet. She assigned each group a different activity to see if it made any difference. (3.4.97/9:4)*

The students enjoyed the activity and found it a fun way to spend an afternoon, but showed little understanding of the principles behind the experiment. During an interview 8 months later, Marie explained, "we had to fold out bits of paper and then we put them in order to see if they opened out or not" (10.12.97/Marie: 5). When asked what she learned, Marie stated that she found out "what different materials would open out in water and what wouldn't" (10.12.97/Marie: 5).

The enculturation into an activity was associated with introducing students to the overall aims and context of the activity. In contrast to the science example above, other learning activities within the school context had direct relevance for the students, especially when they could see the broader context of the task. For example, during a mathematics lesson using graphs and statistical information, the students showed an interest and awareness of the material because it had direct relevance to them. In the following extract, Deb showed her interest in measuring her height and relating it to the statistical information in her mathematics book.

*1.55 p.m. The topic is about interpreting graphs. Deb had measured her height at 170 cm. She exclaimed when she got back from measuring her height against the wall, "I'm taller than most 12-year-olds", using the information on the graph. Then she realised she was also taller than other age groups and said "I'm taller than 14-year-olds too". Helen measured 159 cm. Deb discovered that she was taller than Helen, and said "I didn't realise I was that much taller than you". (29.5.97/16:2)*

In a language class, Peter and Chris who both enjoy words and written language, showed that they were not only learning with purpose, but that they played a direct role in identifying that purpose. The students had written a story, and as part of the evaluations they were undertaking, the students needed to identify what words they liked from their story.

*They were asked to say what words they liked best. Peter had said: creepy, stench. Chris said "I had some quite good words". His favourite was exiguous. He told me it meant small, and reads the sentence. He realised he had made a mistake within the sentence and corrected it. He had left out a word – window. I ask him whether he would know this word in a week's time. He said when he had used a word, yes he would. He said now that it was in his story he would know what it meant. (21.5.97/14:6)*

Another aspect of learning in the classroom involved the repetition of work, which for some students created a barrier to learning. This was observed primarily during language and mathematics, where students were given quantity work to keep them occupied. For some students, this became too repetitive, especially when they felt they understood the work involved. Answering 20 equations instead of 10, for example, was seen as monotonous and boring, if the underlying principle was understood. This was mainly a problem with the high achieving students such as Peter and Chris, and often resulted in Chris engaging in off-task behaviour. The following extract is taken from an observation in mathematics. Peter and Chris are in the top mathematics group.

*I asked Chris what he was doing and he explained. He said they had had a test and they were correcting those they had wrong and finishing the ones they had not completed in the time allowed. I asked him what he got for the test which he reported 27 out of 29. Peter said he got 28 out of 33. I asked why they had completed different amounts, and they explained that they had to finish as many in the time allowed. I asked Peter whether he enjoyed the work and he said he found it boring. He explained that he is working on corrections but often his answers are wrong through silly mistakes and it's not that he doesn't understand the mathematical process [not his words]. He gave an example that if he put  $1+1=3$  he would know it was wrong and would not need to spend a lot of time correcting it. He said "I understand the problem, so why do I have to practise something I can already do?" (19.2.97/1:7)*

In out-of-school settings the community plane highlights the way students come to know the culture of their activity. One of the main ways they do this is through their coaches, referees and parents (i.e., more expert players). By taking part in the activity, students come to know what it is like to *be* part of the culture of the activity, that is, to be a netballer, a dancer or a trampoliner.

In a learning situation, such as netball, students learn skills, rules and the “netball way” of catching and throwing the ball when playing the game. The following extract is taken from an observation of Marie playing a game of netball on a Saturday morning. Within this park, there are 17 netball courts, and teams ranging from young children through to adults are playing. At any one time, there are 34 teams playing, with 17 referees. There are people surrounding each court as supporters.

As indicated in the extract below, there is a netball culture that is learned by the students, quite apart from the rules of the game or the skills of throwing and catching the ball. By becoming a supporter, as illustrated by Marie’s father, others come to be part of this culture.

*During the second part of the first half there is a lot more action for the other team’s end of the court, which means more work for Marie. She often has to pick up messages from the referee through whistles, looking, listening and identifying signals. Learning the code must be important. Marie has to make decisions regarding who she is to throw to, and communication between players exists without words. There seems to be a knowledge of rules that is integral to the play. The skills seem to be watching, listening, observing, moving, and the throw ins require both the thrower and the other players to communicate regarding where to throw the ball. Marie’s father calls from the side line. He yells “Make yourselves available” because Marie was having difficulty throwing to anyone. (23.8.97/22:1)*

In a similar way to Marie’s father, parents of learners in a judo class yelled support, encouragement and advice that recognised the particular culture. As part of this enculturation, the students themselves learn to offer support and advice appropriate for the sport or activity.

In the following extract, Peter takes part in providing advice at the end of this section and in so doing, joins in the culture. This is not something Peter was observed doing within a classroom context.

*As each pair get to have their turn, the parents yell from the sideline. “Push him down” “Get some big throws” and those at each line also yell out advice. “Keep*

*it up” “Keep working” “Worm out of it, David...worm out”. The person next to Peter asks him the score. So it appears that the two teams have 2 minutes of fighting, before moving on to the next pair. There are winners and losers, therefore. This seems to be an opportunity for them to practise their strategies. The yelling from the coach and the sidelines, and parents continues. A parent calls out, “Stop dancing and do something”. Peter yells out “Into him”. (28.8.97/24:3)*

In another example within the class of judo, students are observed learning both the culture and the techniques associated with the sport. In the following extract, Peter works first with a student who is perceived by Peter’s mother to be stronger than Peter but the coach urges them on in the manner of the sport. His call to “*get a bit more aggressive there*” is associated with judo, and is appropriate in the setting.

*6.10 p.m. The judo class gets going. I watch Peter with another boy. His mother keeps talking to me and I am trying to concentrate. She says the boy is too strong for Peter and that it was an uneven match. I am interested in how Peter manages and his reaction to the challenge. The coach yells out “Get a bit more aggressive there” and makes other comments to pairs as he goes around. (28.8.97/24:1)*

As with school settings, in the out-of-school learning settings repetitive work was often a feature as a means to develop mastery of a skill. Peter was observed during a judo class repeatedly performing a throw, and practising a particular form of backward and forward rolls. However, the difference between the repetitive work in school and out-of-school settings was linked to the *purpose* and *use* of that repetition. In school settings students learned their spelling words or their multiplication tables through repetition and practice, as a means to an end, usually for a test. However in out-of-school settings the students were observed learning to apply the skills in authentic contexts and then learning to develop these skills in more advanced ways [2.8.97/21:2 (gym); 27.8.97/23:1 (dance); 28.8.97/24:2 (judo)]. They also integrated the skills into a greater whole; learning steps in dancing and then integrating them into a dance; learning a particular judo throw and then integrating this into a series of throws; learning a pass at netball and then integrating it into a game.

## 6.2.2 Interpersonal plane

Both the school and out-of-school contexts provided many examples of how learning was a social phenomenon that developed through the interaction between teachers and students, between students and peers, and between students and cultural artefacts such as computers, books and media. The learning process consisted of a mutual involvement of learners attempting to gain meaning through shared endeavours.

In the school setting, the teacher's role was important and integral to the development of student ideas. While there were occasions when the teacher-student relationship was based on a model of teacher control and power, where the student was required to adhere to authority, there were other times when both the teacher and students worked together, learning from each other to form a supportive partnership. The following example is taken from an observation during an indoor sport activity in the hall. The game is a teacher-made game (derived from baseball), consisting of two teams, where a ball is kicked into a field by a member of one team, and fielded by the other team. When the student kicks the ball, she or he has to run around three bases to reach home base, while the opposing team attempts to catch the ball and throw to one of the three bases, essentially to prevent a home run. During the observation, a year 7 girl is reluctant to take a turn because she fears she is unable to kick the ball. Both students and teacher offer the girl support, and the extract below illustrates the way a learner is initiated into a game through the interaction with peers and teachers. By supporting this learner, the teacher and students are also involved in the learning process.

*A year 7 girl arrives to take her place in the new team line up. She is sitting at the end of the bench close to her turn for kicking. She says "Oh no, I don't want to be here". A year 8 girl says "Don't you want to be there? You can go to the back and join Rick if you like. You don't have to be here". My impression from the year 8 girl's comments was that she wanted to get her turn as soon as possible and that by getting rid of another at the top end of the line would strengthen her chance. Her comments were made in her interests, not in the interests of the other student. John was also sitting and listening to this interchange. He said to the year 7 girl. "No, you stay there, it's fun, all you do is kick the ball and run to base 1". She stays. Her turn arrives, and John walks her to the ball and says it's OK. Mr. Jones sees this and joins her whispering about kicking it behind the base to confuse the fielders. She attempts to do this but gets to the ball and stops. She turns to Mr. Jones and says "I can't" and begins to cry. Mr. Jones is not put off by this and encourages her to have another go. He indicates to the main fielder (a member of the opposing team) waiting in front of the ball to "be kind" and gives a knowing look to the fielder. The girl gives it a small kick straight to the fielder who pretends to fumble, and throws it well away from any other fielder in a fumbled attempt. She runs to base 1. Mr. Jones says "great Team spirit" to the*

*girl's team (who are now clapping) and says "thanks to Big C" the boy who "fumbled" the fielding. (6.3.97/3:2)*

In a similar way, a speech lesson demonstrates how students are guided into an activity (speech making) with the teacher. They are embarking on a speech competition and are required to write, prepare and present a speech first to the group, and later to the class, and if chosen, to the school. While discussing features of a good speech, the teacher guides student thinking by developing the ideas they produce.

*9.45 a.m. I join the class and we go to the hall. John, Jane and Deb are in this group. Teacher asks students to sit in a circle on the floor and explains the task. She says they are to say their speech first to their partner and to practise presenting it. She asks the class what they need to consider. Students provide answers such as eye contact, expression (Deb), and speed. At each comment, the teacher expands on their idea. Such as "Don't talk in a monotone" regarding expression, and asks the question "What do we need to know about speed?" John suggests that "We shouldn't move our arms around", and teacher picks up the point about body language. (6.3.97/3:3)*

Teachers were often observed guiding learners in their learning. In a language activity within the classroom, when the students were asked what "empathy" meant, Mr. Jones attempted to build on each student's response. However, as indicated in the following example, in order to build on the student's response successfully, the teacher needs to understand the student's viewpoint. The students provided a variety of answers, including such comments as "a feel", "what it would be like", "know what it feels like". Peter was asked for his definition of empathy and his unusual response left the teacher somewhat uncertain as to Peter's reference. However, while Mr. Jones said to Peter, "I know what you're getting at", he did not elaborate on Peter's answer and moved quickly on to another student. It appeared that Mr. Jones may not have understood what Peter was attempting to communicate.

*Peter is asked for his definition of empathy. He says "in a dream".*

*Mr. Jones looks puzzled and says "Tell me more".*

*Peter: If you had a dream about a clown you'd be running around like in a circus.*

*Mr. Jones: Circus....clowns...Yeah, I know what you're getting at.*

*Mr. Jones asks another student. She says: "If someone has fallen over and hurt themselves you have empathy because you've fallen over and hurt yourself before and know what it's like".*

*Mr. Jones: Yes..it's when you've been in the same situation as someone else. (21.5.97/14:4).*

Students also assisted each other in their learning. Mathematics was an area where there was much evidence of students assisting each other with problems. Even when

assistance was not called for, students would offer advice to their friends if they noticed they were approaching a problem in a way that was counter-productive. The following two examples are taken from an observation during a mathematics session. The students were given a piece of paper and had been instructed to make a rectangular grid to write the team name on. It was designed to be a grid of 32 squares and each square was to be cut up later. The aim was that each class member would get a square and hold it up. When they held it up it would read the team name, and when the square was turned over it would form another word. The students were working on a small piece of paper as a trial before they were to make a large class-sized version.

*9.15 a.m. It is maths and Mr. Jones has the top maths group in his room. Jane and Chris are part of this group. Jane is sitting in a group of 4 – there are 3 other girls in her group. They seem to be working collaboratively. One girl has a calculator and is making calculations regarding the work they are doing – she is then sharing the answer with the rest of her group. She asks Jane “Have you made sure that it can fit across there?” Jane looks back at her work and figures out whether it will fit.*

*Jane has now completed her squares. The girl with the calculator is still working methodically through her measurements. Jane goes to get some scissors. The girl suggests Jane write the name before she cuts up her square. Jane explains that she just wanted to cut off the end of her work because it was messy and a part she didn't need “Cos it doesn't look nice”.*

*The girls are now discussing what is likely to occur in the upcoming assembly. Jane puts the letters on the paper in the lower squares and then wonders how she will fill up the rest of the paper. One of the girls suggests a picture. Jane then rubs out the letters.*

*The group are now suggesting to one of the girls how to work on the other side of the paper. They have to turn over the page to reveal another word. One girl explains this in more detail. They learn from each other. They seem to start a task without really knowing exactly what they are doing, nor knowing how it will turn out, nor the logistics of creating it. They work out how the paper will turn over by trialing it with another piece of paper. The talk moves to other areas such as cooking and the assembly. (3.9.97/25:2)*

The interactive nature of learning was evident in other forms as well, particularly the provision of models for students. This was present in both school and out-of-school learning where students looked to models to understand where they were headed. Often the teachers used models to highlight aspects of work to students, and the models came in the form of actual performance of an activity, or a concrete form of the activity, for example, written work.

Mr. Jones often held up student work as models for the other students to illustrate points he was making in terms of what he expected from the students. He identified what the students could incorporate into their work, or how they could approach a task. This took place on an informal basis during the lesson using ongoing student work as models, and Mr. Jones used phrases such as, “*that’s what we’re looking for*” and “*every person here is heading for this sort of quality*”. This happened in other classes, particularly art, where students were shown pictures of what they were trying to achieve (16.5.97/13:2). Teachers provided models by actually performing the activity, which was a feature of the way they taught drama and movement (6.3.97/3:9).

In learning environments out-of-school, students were guided into the activities as a natural part of learning. Guided participation was very evident in the way students were enculturated into the activity whether it was judo, dance or sport. There were certain ways of knowing, acting and responding in these contexts, and students were guided into these informally by teachers and other students. Unlike a school setting, the other students were not necessarily age peers, as there was often a considerable age range in these community settings. As shown in the following extract, Jane is participating in a dance lesson, where she is practising the waltz (which they had already learned), and is later introduced to the samba. The following extract illustrates how Jane uses her peers as models to learn the dancing steps, while at other times, chooses not to work with her peers when they impede her learning of the dance.

*The teacher tells them they are going to go over the waltz and then they will learn the samba. She tells them to get a partner. The girls are very reluctant to get a partner. Jane follows behind others and dances on her own. She carefully observes a couple dancing and follows behind them. She seems to be getting a bit confused over some steps but it must be difficult to do without a partner. Jane is now with a partner. They have changed partners and the dance continues. One girl gives up on her partner and leaves to dance alone. Some are tripping over their partner’s feet and Jane is also starting to trip. I can see her getting frustrated and she knows it’s not working right. She gives up on her partner and walks away. (27.7.97/23:2)*

In a judo session, peers were used to model both actions and sounds. In a session where the students worked on their forward and backward rolls there were grunting sounds that accompanied these movements. These were evident in the older students who appeared to make these sounds informally and seemingly automatically when they executed a backward roll. However, the younger students attempted less convincing versions of the sounds, although in the lesson the coach did not specifically request

them to include the guttural sound. The young students seemed to attempt to model the sounds they heard from the older students even though their sounds and the movements often did not connect. However, it is evident that these younger students are coming to learn about the cultural expectations associated with this movement.

*6.30 p.m. The group are now in a line practising backward and forward rolls. They have to do three backward rolls and then join the back of the line. After they have gone through these a couple of times, they then do forward rolls. It seems that when they do backward rolls they make a sort of sound. A loud grunt. The adults make a lot of noise associated with their roll, and the children seem to copy. The children are making the noise because it is seen as part of the movement. They imitate the sound but do not seem to have connected it with the movement. Perhaps the first part of learning something like this is in the doing rather than the knowing. The group move on to forward rolls. They have to keep their hands in their belt when they do this. The coach tells them "The faster you do it the easier it is". The group then do a combination of forward and backward rolls. (28.8.97/24:1)*

Teachers in the out-of-school learning settings used modelling frequently to provide the students with exemplar models. This was evident throughout the dancing sessions and judo sessions, although it was not used frequently in the trampolining classes.

*7.25 p.m. The group are now sitting in a circle. There are two coaches. The main coach tells the students a few points they can work on. He tells them judo is about keeping your balance and breaking their (the opponent's) balance. He tells them everything is about triangles. He describes more of this idea in detail and tells them to watch. He tells them the second point is that he wants them to keep control of their partner. "Get a decent grip and walk around". The two coaches are demonstrating this action as he describes and discusses it. (28.8.97/24:4)*

Supportive interaction with teachers and peers was important to student learning when the student was afraid of the consequences of trying a new activity, or was not prepared to take risks. As already described with the young student in the school setting who did not want to participate in the game of kicking the ball, the fear associated with a new learning opportunity can leave students unable to develop their skills and expertise unless guided by another peer or adult. Chris had an experience where he showed both fear and reluctance to tackle a new situation. During the school camp, he was given the opportunity to try abseiling. He was one of the last students to attempt it because of his concerns. The instructor became an integral link in supporting Chris to achieve this goal.

*It is now Chris' turn. He has all the attachments on and is ready to go. Chris looks worried and says he might fall. The instructor said, "You're not going to fall – because I'll catch you". Chris becomes very scared. He is at the top of the cliff unable to move. The instructor gives him much encouragement but Chris continues to be frightened. The instructor told him to put his head and shoulders*

*right back. Chris said "No, I don't want to do that". He goes down slowly and gains confidence on his way down. When it is over I ask him what it was like. He says "What a rush" very enthusiastically. I ask him whether it was scary and he says "The scariest thing is the ledge. I had to put a foot on the ledge but it was widely spaced". (11.11.97/28:3)*

Back at school a few weeks after this event, Chris was asked by the researcher, what he learned while he was at camp and he replied "*Maybe just to overcome your fears in abseiling*".

### **6.2.3 Personal plane**

The personal plane of analysis highlights the process by which individuals transform their own participation and, through this participation, *change*. While the previous planes of analysis have focussed on the learning culture of the activity, and the interaction between peers and teachers, the personal plane focuses on how these factors impact on the individual learner.

In the school settings, students were seen to interact freely with each other and with the teacher, and through these interactions become more aware of their own role in the learning process. In one example, Deb was involved in filming a story that her group of four other students had written and illustrated. While interacting with a teacher, the students looked at ways to include sound effects to go with a series of pictures they had drawn. They had a tape recorder playing music and they read a prepared script while filming the pictures and adding the sound effects. While there was no designated leader, Deb assumed this role, and identified areas of weakness in one of the other students and provided support for her through her lines. Therefore, in this example, both Deb and Helen learned and changed through Deb's involvement, although the observation focus was on Deb. In the example, Deb took a leadership role and therefore was involved in making decisions and directing others, while Helen participated in the activity, following instructions and working with her peer.

*Deb says to another girl "remember you're saying that bit, Helen...". She checks with Helen who is ready to go. Again Deb asks "Remember that bit..". Helen laughs and says "Yes". Each scene (apart from one) has music. In the scene without music, Deb explains she needs a dripping tap. Another student turns on the tap and it drips quietly. She tries to turn it on harder. The teacher helps and it comes out much louder. Deb says "It's supposed to be a dripping sound", so teacher puts his hand in and out of water to break up the constant pouring sound.*

*Deb says "It's supposed to sound like molten lava" and then tells the teacher that that can be his job. (1.5.97/11:2)*

In the following example, a student acknowledges his inability to meet deadlines. In the extract below, Peter attributes this to his own "laziness" but this description does not fit his work ethic observed in class. Consistent with other students in the class, Peter was not motivated to complete work until very close to the deadline given by the teacher. Even when weeks had been assigned to written activities such as projects, Peter would leave completion until the last few days. As Peter was in the top group for mathematics and achieved well in other curriculum areas, it was more likely that he needed increased challenges in the classroom. Therefore, the culture of the classroom to provide extended timeframes for work that could be completed in a short time frame, affected the individual approach to learning for Peter. The personal plane identified that increased academic challenges and tighter deadlines could facilitate changes to Peter's approaches to learning.

*I go over to Peter and ask him about his magazine. He says he is very behind and said it was because he was lazy. I asked him what he meant and he said he would always get work finished but usually waited until the last moment to get it finished. He had 3 weeks to work on this and hadn't spent a lot of time on it. I asked him if he had been given a different deadline (say only 1 week) whether he would get finished. He was sure he would. I suspected that this is the case and he would have completed the work more efficiently under a tighter deadline. Being lazy is not an apt description of himself. I think he really means deadlines are too far apart. (12.9.97/26:2)*

Later during this observation, Peter discussed his need to work through the weekend to complete the project. He was confident he could complete it over the weekend and a girl from his class, in a similar way indicated she also needed to do the same amount of work even though from the observation it was evident that she had already completed much of the work. Through the discussion Peter had with the girl, he identified work that needed to be completed, and set goals for the work he wanted to finish over the weekend. In the following example, where the teacher moves to Peter's desk and asks to see his work, Peter is reluctant to show his book because he is aware that he is not meeting the teacher's expectations. It is interesting that while the teacher identified a goal for Peter to "break the back of it over the weekend", Peter had already independently set this goal.

*I am standing near Peter's group. He is sitting beside a girl who is obviously well ahead in her work. Peter is telling her he is going to work on it all weekend. He figures out he will spend 24 hours on it. The girl beside him said she'd do more. She thought she'd probably spend about 30 hours on it. Peter considers this and*

*then tells her he doesn't think that's possible once you take time off for eating and sleeping. He says to her it's "not likely". Mr. Jones had been going around and talking with individual students about where they were up to. He asks Peter to see his book and Peter tries to slip it into his desk and show Mr. Jones the draft he was working on. Mr. Jones indicated he wanted to see the book. They went through it together and Mr. Jones realised Peter was far behind but tried to stay positive. He tells Peter not to "get yourself down in the presentation" because he noticed Peter was colouring in a section at a fast rate and it looked messy. He then left and said to Peter "It's not too severe, Peter, but you'd better break the back of it over the weekend". (12.9.97/26:3)*

In out-of-school settings, when students provided support to others during a learning activity, it impacted on how they went about their own learning. As previously noted, it was observed that in some situations, students would not attempt new learning activities without the support of their peers. Tasks that initially appeared too daunting for some students, often became accessible with the encouragement of peers. Before students approached a difficult or challenging task, they often sought the opinion and experience of one of their peers who had previously completed it. They seemed more able to believe or trust the judgment of their peers rather than adults on activities that were new to them. This related to physical activities such as horse riding, go-kart riding, and abseiling and, to a lesser extent, activities such as orienteering and archery.

The personal lens was used to explore the way students changed and learned through their involvement in the activity. The guidance of peers helped individual students learn and change through this participation. By being able to participate in a new and challenging activity, these students learned something about themselves and their ability to face risk, fear and excitement, as well as the skills associated with the task. Abseiling at school camp provided a useful example of this. As noted in the extract below, Deb needed the guidance of her peers and the coach, before she would attempt to abseil. Both Deb and Chris were terrified about the prospect of abseiling and, having never experienced this before, waited to be one of the last students to attempt it. They kept asking the other students about their experiences as they reached the bottom of the cliff. One student who came down was asked by Deb "Is it easy?" His reply "It's easy – not easy peasy – just easy" (11.11.97/28:3), was well understood by Deb. It offered her the hope she was after, and she went up to the top of the cliff to take her turn.

*It is now Deb's turn to abseil down the cliff. She has on all the equipment, ropes and safety harness. She is at the top of the cliff receiving instructions from the instructor. She was told by the instructor to put her hair (which is in a long ponytail) down her T shirt. Deb seems terrified. The instructor said to her "Just remember that nothing can happen to you". Deb started, then said, "I can't do*

*that". She got her foot on one ledge and was told by the instructor to position her other foot. Again she said, "I can't do that". When she got down the cliff, she was more relaxed and seemed pleased to have conquered it. I ask her how she found it and she said, "It was bloody scary". (11.11.97/28:3)*

#### **6.2.4 Summary**

The analysis through the three planes provided a means to identify how students became familiar with an activity, how they participated in the activity and how they changed as a result of their participation.

The community plane highlighted the importance of presenting learners with the overall learning goal when developing isolated and specific learning skills within the broader context of the activity. The school setting tended to provide learners with discrete learning skills without presenting a broader picture of the overall context. Some learning activities in school, such as making the petals of the flower open in water during a science lesson, did not provide a basis for students to appreciate the concepts they were studying. However, there were examples within a classroom where the broader aims of the learning were apparent (such as in the speech-making exercise), which facilitated student learning. Learners involved in a variety of communities of practice were exposed to different cultures associated with the learning contexts, and were observed acclimatising and changing according to the context. For example, Peter learned it was acceptable to yell out "*into him*" in a judo context, but it was not acceptable in a classroom or an assembly context.

The results analysed through the interpersonal plane showed that others, such as teachers, tutors and peers had a significant influence on student learning. Students used peers and adults as models for their learning. This involved practical active application such as watching and practising the activity with others, as well as passive application such as looking at student work, having art work featured on the wall and listening to others. Whether students were learning the samba or learning to hit a ball, their involvement with others was key to their ongoing learning. All participants in the activity changed and learned because they influenced others' learning in the same way that their peers or adults influenced their own learning. The dynamic nature of learning contributed to the overall context of learning.

The personal plane identified how students changed and learned as a result of this participation. The results showed that learners were prepared to take risks and, in so doing, were introduced to new experiences through their participation with others. The abseiling and the filming within the classroom examples illustrated how individual students were able to change as a result of their participation. In contrast, the example of a student who could not meet deadlines identifies that the personal plane can be used to examine what barriers are faced in learning. In that example, low teacher expectations for that student prevented the student from changing through more challenging learning.

The following section examines the practices of self-assessment, in a similar way to that undertaken for learning, through the three planes. While learning and self-assessment are activities that are linked, it is possible to examine how students come to know they have learned, and how they approach self-assessment tasks that are either teacher-directed or student-initiated.

### **6.3 Self-assessment practices through the three planes**

This section examines self-assessment practices in a variety of settings using the structure outlined by Rogoff (1995, 1996) through the three planes of analysis. The community plane examines the overall assessment practices. This is followed by an examination of the interplay between the learner and others involved in the assessment process (such as the teacher, peer or parent) using the interpersonal plane of analysis. Finally, through the personal plane of analysis, this section examines how the learner changes as a result of participation in the self-assessment process.

#### **6.3.1 Community plane**

Teachers used a variety of assessment practices in the classrooms. Some of the assessment practices were dictated by the school policy (such as Progressive Achievement Tests), some by the team of teachers (e.g., mathematics pre- and post-tests), but the majority of assessment methods used to evaluate student learning were chosen by the classroom teacher. These included formative and summative forms of assessment methods, all of which were endorsed by the Ministry of Education (*The New Zealand Curriculum Framework*, Ministry of Education, 1993b; *Assessment for*

*Better Learning*, Ministry of Education, 1989; *Assessment: Policy to Practice*, Ministry of Education, 1994).

Two main themes in relation to teacher assessment emerged through the observations. First, the types of learning activities or products rewarded by the teachers, gave the students clear messages about what was and was not worth spending time on, and second, student *motivation* for success in an activity rather than their *ability* to perform that activity dictated the effort they put into the task, and ultimately the outcome of learning. Therefore, while students learned what would be rewarded within the classroom, they did not complete the task to the best of their ability if they were not interested in a particular activity. This happened even when the students knew the criteria for assessment and had the means and competence to meet those criteria. It was observed that teachers often assessed student products that were not necessarily representative of the student's knowledge or ability. There were three main areas rewarded through teacher assessment, accuracy of work, completion of work, and presentation of work.

An observation taken during a spelling assessment activity provides a typical example of how accuracy or correct answers were rewarded, although individual student strategies in spelling were not identified or rewarded.

*11.40 a.m. Spelling test. As this starts, Peter is being pulled by the hair and given a hard time by another boy. Mr. Jones tells students to get ready for spelling test and says there are 20 words, which are related to their story theme. Some are beginning to number the lines in preparation (Peter, Helen and Marie). Jane starts later and John doesn't bother. Mr. Jones says "Keep your work covered..it's not an eyesight test" reinforcing the notion of competition and individual work. As he calls out each word he asks for meanings. The words are animation, infinity, light year, potato, dinosaur, gadgets, permanent, torture, revenge, pizza, galaxy, remote control, battery, atrocity, camera, angle, dissolve, special effects, storyboard, dialogue (which are in effect 23 words).*

*11.55 a.m. Mr. Jones tells class to pass their books to the student on their left for marking. After the students had their work marked, they are asked to fix up errors using the OHP where the words were recorded.*

*Helen: 13/20 – errors included galixcy, angel, dosolved, dialog*

*Jane: 9/20 – errors included dialog, atosity, disolve*

*John: 16/20 – errors included dialoge*

*Peter: 19/20 – errors included desolve*

*Students are called to the mat and asked to call out their marks. Mr. Jones calls their name and then he records their score. There is no recording of the type of errors. The students are given the option of telling the teacher later (presumably in case of a poor score). One child takes up this offer. Others call their number*

*including those who got 5, 6, 7 and 9 out of 20. Deb called out her 8 loudly and confidently. Mr. Jones explains that the spelling test is "to see where you are and to see where you are going to get to". When the students who scored either 19 or 20 (out of 20) respond with their scores, Mr. Jones said "well done, you guys". (19.2.97/1:11)*

The errors were not discussed with the teacher, nor recorded. A large number of students could not spell dissolve, but this was not picked up by the teacher, which reinforced the notion that rules of spelling were not learned by the students. In talking with the students, they explained that they tended to use rote learning and memory to learn the spelling of new words. When words were incorrect, students learned the correct version through repetitive practice rather than looking for a rule which might have facilitated the learning of these words, and subsequent words.

One of the participants, Chris, found the rewards for accuracy particularly reinforcing, and by the middle of the year he showed signs of cheating to increase his score. For example, when correcting his words by checking them against the actual spelling, he would rub out spelling words that were incorrect and adjust them before proceeding to mark them correct.

As well as the type of class assessment tests in spelling described above, students were also placed in specific spelling groups and had weekly spelling tests. The students received their spelling words by sitting a pre-spelling test and were then assigned a spelling group according to the number of words they got correct. Weekly tests were given for each spelling group. The teacher would read out the list of words and the students individually wrote them down. In an observation where a spelling test had taken place and was being self marked, Chris attempted several times to alter an incorrectly spelled word so he could mark it correct. The errors were minor in that they involved either a missing letter or incorrect letter combinations, and it may have been that he was angry or frustrated with himself for having made these mistakes. For example, he had written "foriegn" and "emansipate". As he corrected these words he made statements such as "ei..whoops" and changed the letter combinations ie to ei before marking it correct (23.6.97/19:5). When he finished he gave himself a score of 38/40 (when it should have been 34/40) and asked Peter, who is also proficient at spelling, for his score. Later Mr. Jones informed the researcher that Chris has a fear of failure (23.6.97/19:5). In an interview with Chris 6 months later he noted that "*you've got to get the full facts, otherwise you might end up being wrong*" (10.12.97/Chris:2).

The completion of work in the classroom was also rewarded. Throughout a series of different curriculum areas, it was evident that teachers looked for quantity in students' work. When students were working on equations in a mathematics class, the greater the number of equations completed, the more points the students were awarded in their point system. At the end of the session those students who had completed 15 or more problems were awarded five points to go on their chart, 10 problems were awarded two points and students who completed eight problems were awarded one point. The points referred to the circle stickers described earlier in this chapter, where students were in colour teams and the circles led to a reward system (19.2.97/1:9). Another teacher in the team was observed using this points system in a different mathematics class that Jane and Helen were attending. In this case, speed was rewarded – the students were given points for being the first three groups to finish a mathematics activity. On another occasion, Mr. Jones rewarded a student, who had been absent from school, for catching up on work. He gave John points and said “*John, you've made my day. You've made up for your days away – well done*” (21.5.97/14:5).

While one correct answer was generally rewarded in many of the curriculum areas, there were nevertheless some students, who appeared to be able to think laterally and supply answers that were not anticipated by the teacher. One example was observed during a mathematics session where students, working on a statistics unit in the context of television commercials, were in discussion with the teacher. The students were learning about sampling, formulating an hypothesis and testing an hypothesis using an activity about television commercials. The teacher wanted the students to investigate the hypothesis that commercials were bad. In the following observation, the comments made by John indicate that he took a different stand because it depended on how the issue was perceived.

*Teacher asks the students about the notion of good. They had discussed this before and she mentioned that good needed to be defined. John said that “It can't be good or bad. It's [commercials] good as it pays for the TV programmes but bad because they interrupt the programmes”.* (26.5.97/15:3)

In other examples, it was also observed that teachers had in mind a correct answer even in assessments in curriculum areas that did not generate quantitative data. Art is an example of an activity that is difficult to assess. However, as the teacher in the extract below indicates, there were particular aspects she looked for when assessing the

students' art. For example, the teacher had identified certain criteria based on curriculum objectives, to assist with the marking of the students' art, although she had not made these criteria explicit to the students. Even when the marking of the artwork was completed, the criteria for assessment remained ambiguous. While the teacher stated that she looked for "design elements, repeating patterns and colour reverse patterns", the criteria for assessing these components remained implicit. In Peter's case, the teacher believed he did not perform well, and subsequently awarded him low marks, although Peter did not know the outcome of his assessment until he received his report some months later.

*Peter is finished now and he takes his picture up to the teacher. She tells him and another girl who has also finished to bring their pictures outside to have their photos taken. As she takes the photos she indicates to me the striking difference between the two. While I can see the girl's is bright and symmetrical, I also see depth in Peter's. I'm not sure whether she meant Peter's was the best picture, or whether she meant the girl's picture was better. The girl's picture seemed to me to be very straightforward. So I said to the teacher that I was no art expert, and asked her what she looked for in the pictures and how she assessed them. From her explanation it was obvious she considered Peter's was not so good and she explained he did not work with colour well. She said these were posters and she looked for design elements, repeating patterns and colour reverse patterns. She gave me a copy of the Art report and I asked her where she would put Peter on this. She said lower satisfactory range. She said he had few skills in colour combinations (he chooses the colours he likes). She didn't meet with either of the two students who had been photographed to discuss their work so I sought out Peter who was now working on his pastel picture and asked him about the painting. I asked him what part he liked the best and he said the sea and the waves. He liked the blue in this picture. He said he had been working on it for two sessions. (16.5.97/13:2)*

The presentation of work was given a high priority by all teachers within the school setting. This was observed in both formative and summative assessment systems in the classroom. For example, it was evident in the type of comments made by the teachers on students' work while the students were working. These comments were on the whole orientated to the way students were presenting the work, rather than the content of the work, for example, "that looks nice" (food and nutrition, 28.2.97/2:5); "nice and neat" (theme, 21.5.97/14:4); teacher talks about time and care with presentation (written language, 3.9.97/25:4); teacher tells Peter not to let himself down in presentation (written language, 12.9.97/26:3).

Students were quick to pick this emphasis up, and on one occasion when the researcher asked Deb for a copy of her draft story, Deb became agitated and was concerned that it

was “messy”. Her definition of “good work” as noted in the extract below, is associated with the presentation of the work rather than the content of the story.

*2.10 p.m. Deb is finished and is proof reading her work. I ask her for a copy of her draft. She said “Not while it’s this messy”. I explain that it is how I wanted it so I could compare it with her good copy. She explains that a draft is supposed to be messy and it is not her best work. She said with a draft you can write notes on it and your friends can scribble on it (pointing to a mark) and grinning at the friend opposite her. (28.2.98/2:8)*

The parents noted this emphasis as well. In the interviews with parents, many of them reported that their child spent too much time on presentation, as it seemed to be important for the teacher. John’s mother stated that,

*I would rather see them do the corrections as homework than, for instance, spending half an hour doing a title page, which to me, you know, once you’ve done one I mean it shows that you can do a title page. I don’t think that needs to be part of their homework as often as it is. I mean, the kids enjoy learning it, because of the colouring in and whatever, but they’re not really learning anything then. (6.5.97/John’s mother:7)*

Some parents felt that particular curriculum areas were not given enough emphasis, while the presentation of written work was given too much emphasis. For example, written language was one curriculum area which some parents felt was not given enough stress. Marie’s father noted that “*she’s not great with capitals and sentence structure and, I mean, it’s just something that I thought would probably be emphasised a little bit more, but they don’t seem to in the classroom*” (15.5.97/Marie’s father:3).

As in a school setting, the importance given to particular skills and rituals by the teachers and coaches in out-of-school settings provided subtle messages to the students about what would be assessed. These rituals and the emphases on particular skill areas provided the context for the students to learn where to place their energies when learning.

There were two main differences between the assessment practices emphasised in the school and out-of-school settings: in out-of-school settings the system of assessment was actually more prescriptive than in schools; and students were also provided with role models of advanced performances. These two factors were seen in all out-of-school learning situations that were structured. For example, in judo all students were working towards the next colour belt and therefore the moves they were learning and being assessed on were based on the curriculum for that belt. There were students

with white, yellow, orange, blue and brown belts, and therefore even young novices could literally “see” where they were headed (28.8.97/24:3).

The netball courts also provided the students with opportunities to develop their expertise. Young primary school-aged children played the game of netball alongside secondary school students and adult players. The notion of competition was strong, and during the observation of a netball match Marie’s father noted that the opposition was “*one of the best teams at the moment in the competition*” (23.8.97/22:2).

Students who attended learning activities in out-of-school settings were provided with expert models and usually had goals embedded into the activities. These goals included the acquisition of medals, badges, belts or performances for competitions, examinations or exhibitions. For example, in dancing there were performances and an exhibition (28.8.97/23:3); in trampolining there were badges, and one of the trampoliners in Helen’s group had been in the world championship competitions, which provided an expert model each week during training.

Alongside the clear expectations set up for the students in terms of progression in their sport or art, came reward for accuracy. In one example during an out-of-school learning activity undertaken during school camp, students were involved in an archery lesson. The student teacher was explaining to the students how to use the bow and where to aim. The teacher offered them a piece of confectionery if they hit the bull’s-eye.

*The student teacher then gets a bow and arrow and shows them to the students. She goes through the procedures about standing behind the barriers. She explains that if they get a bull’s-eye they get a K bar [confectionary].*  
(11.11.97/28:2)

However, students appeared to be more motivated by wanting to master the skills of archery, than by the reward associated with that mastery. In the observations, as described later in the interpersonal plane of analysis, offering a reward did not encourage self-assessment practices. In fact, the peers and the models used to assist the pupils in their learning were more effective in facilitating self-assessment practices, than the provision of a reward for achievement.

### 6.3.2 Interpersonal plane

Investigating the data through this plane showed that, for the students, the self-assessment process was a continuous process involving learning and assessing, goal setting and evaluating, and recognising and deciding what was worthy of being assessed.

The data from the school observations indicated that self-assessment was often part of a peer process, particularly in the form of peer assessment. Assessment with peers was an integral part of student learning, and was evident in two forms within a school setting: the teacher directed and initiated peer assessments; and informal peer assessments initiated by the students and closely associated with their learning.

When teachers constructed the peer assessments, they designed them to reflect specific areas to be assessed. Teachers may have felt that by giving students an area to assess, they were also giving them criteria. However, although students knew what they were providing a mark or grade for, they did not have any specific criteria on which to make a judgment on the identified areas for assessment. Even so, when students peer-assessed from these peer assessment sheets, they tended to ignore the specified areas or criteria if supplied, and relied on other factors such as their attitudes towards the student they were assessing. The teacher-initiated peer assessments were generally associated with students assigning marks or grades to their peers, and tended to be more quantitative in nature, which at times created an artificial process of evaluation. This occurred in most curriculum areas such as spelling, language, mathematics, and social studies (which was also referred to as theme).

In an observation involving a speech competition, peers were asked to assess each other's performance and were given a list of areas on which to base the decision regarding the allocated mark. While the students used the assessment sheet that outlined the areas, such as purpose, introduction and content, it became evident that they also chose to alter decisions if their own intuitive judgment did not match the scores they awarded the student. The overall aim of grading the performances was to choose the three best students to enter the school speech competition. The students were supposed to be marking each other on the basis of performance and ability, but other variables such as friendship and popularity tended to have a stronger influence

than the specific areas established by the teacher on determining the peer grade as reflected in the following observational notes. As Deb states later in the observation, when the teacher asked her to put forward the names for the finals, she did not “go by the score”.

*Each student has a turn at reading their speech to the rest of the class. The listening students have a sheet of paper in front of them with room for student name and 6 columns for grades. Each column and grade represented a part of the speech. They were: Purpose (5); Introduction (10); Content (30); Delivery (30); Conclusion (10); and Reaction (15).*

NAME	5 Purpose	10 Introduction	30 Content	30 Delivery	10 Conclusion	15 Reaction	TOTAL

*Jane gives her speech. She writes her name on the board so the rest of the students can write her name on their sheet. She speaks quickly and relies on her cue cards. Some words are mumbled. John’s score for Jane is:  
3 8 28 22 7 10 (78)*

*A boy gives a speech immediately after and John scores him 5 9 29 29 9 14 (95). John uses a calculator to work out the final score.*

*Deb is giving her speech now. She is confident and makes little use of her cards. John’s score for Deb is 4 9 22 25 9 14. He adds it up twice to make sure of the final score. His calculator both times says 90..then writes down 74. (The actual score should be 83).*

*Deb’s score for:           John: 80  
                                  Jane: 74  
                                  Male peer who seemed a popular speaker: 71*

*Jane’s score for:         John: 81  
                                  Deb 78  
                                  Male peer, who seemed a popular speaker: 77*

*John’s score for:         Jane: 78  
                                  Deb 74 (added up to 83)  
                                  Male peer, who seemed a popular speaker: 95*

*The students were then asked by the teacher to select two students they thought should be represented in the finals. I watched Deb make her choice and then asked her how she decided. She said “I had to choose two, but I didn’t go by the score. I scored them too highly yesterday so I decided to score lower today”. (Popular Male peer was asked by teacher to stay along with others selected for final). Deb, Jane and John were not asked to stay. (11.3.97/4:5)*

There was evidence to suggest that students found peer assessment a helpful process in self-assessing their own work, because they often sought advice from each other while they were working. As noted in the following extract, there were some occasions where

students preferred receiving grades, rather than comments from their peers. In an example of peer assessment in social studies, after completing a river model and an accompanying speech about the model, peers were asked to provide both a comment and a grade for the piece of work. Each student was then asked to write their own evaluations in their “home sample books”, which are exercise books where samples of student work are collated over time. The students were also asked to select parts of the peer assessment to include in the overall evaluation, and insert these into their home sample books. The following extract shows that while Deb found the comments made by peers more useful than grades, Marie included the grades because she was proud of them.

*I notice that the students have chosen particular pieces of peer evaluations from the peer evaluation exercise. I take samples of these to illustrate what they have chosen for their evaluations, and also how they have evaluated another person. In their home sample books, they have included the peer evaluations under the heading “These people in my class have made these comments about my work”. They could select out of all the class comments what they wanted to include. Evidently they had presented their river model to the class, and each class member had to write a comment and give a grade. For example, a peer comment to Marie was “well done and don’t say it’s dumb”.. “have original ideas some labels aren’t right”. Marie had also included the scores the peers had given her (e.g., 8/10 and 4/5). When I looked at Deb’s work she had not included the scores. I ask Marie why she had included scores in her work. She said she was proud of them, while Deb said she didn’t include the scores because the comments were more interesting for her. (7.5.97/12:2)*

The second type of peer assessment involved assessment initiated informally by the student. In contrast to the summative teacher-directed peer assessment, it was generally a formative process. Informal peer assessment had an impact on student learning because it generally occurred during an activity, and contributed to how the student undertook the task. The following extract illustrates how students informally talk to each other about their work, and their interpretation of what they are expected to do. Often the students provided feedback to their peers in situations where they believed they had something to offer, even when (as noted in the following example) such advice was not sought. In the following extract, the students are in an art class and are working on their pieces of art on the floor. This episode illustrates informal peer initiated assessment.

*One girl has just told another boy “It would be easier if you did bigger houses”. Then she tells Peter “You’re not meant to colour in, you’re meant to rub it in”. Peter looks worried and looks over to her work. The art method was supposed to fill in the centre of the house with pastel and then rub it in to give it a blurred or smudged effect. He was colouring it in block style. This was an interesting*

*episode given that this girl was monitoring her own and other's work, making comparisons and providing feedback. Girl then sees that Peter looks concerned as he tries to remove some of the pastel with a ruler, and says to him "don't worry. It'll be OK". Peter is still trying to scratch off excess pastel from his picture. (16.5.97/13:2)*

Later, while having morning tea with the art teacher, she discussed her role in the art lesson. She believed peers learned from one another, by looking at each other's work, and asking questions about their work. She said the students often asked each other questions such as "How did you do that?" and "What are you doing?" She noted that peer assessment was informal – not formal – and was something that couldn't be planned for.

Informal assessment seemed to be a natural aspect of student learning that peers enjoyed and was an integral part of each other's learning. The following extract is taken from an observation where students examined each other's written work. They had each produced a magazine. The students were seated in a circle for this activity.

*The students are passing around one another's magazines. They have a magazine for about 1 minute and then Mr. Jones says "Pass on" and they pass it on to the person on their right. The students are reading through and making the odd comment. Marie says "Oh cute.." she looks at the writer and asks "Is that your cat?" When Mr. Jones says, "Pass on" there is sometimes a comment from a student such as "Not long enough". Comments like "This is so cool" and "Oh my gosh..look at that" are coming from the girls. All magazines have the same format and some students go to their favourite page of each one as it comes along, for example, the horoscopes, the kids' page or recipes. Mr. Jones is part of this circle and gets to check each book before he says "Pass On". He makes comments to the person as he goes, giving feedback constantly. For example, "That's an exciting kids' page, Maria" "Good on you Cushla..you worked well on your advert". (3.9.97/25:4)*

The following extract taken from an observation during a story writing class, shows how students know when, and from whom, to request peer support. Again, it is associated with their knowing and identifying each other's skills, and using these for learning support. In this extract, Chris has been working on a peer's story, assisting with feedback about the *content*, not the presentation, of the story. It is interesting that the boy did not find Mr. Jones' suggestion to "write more" very helpful, so he went to Chris to ask for advice.

*Mr. Jones asks the class "Put your hand up if you want another 10 minutes". The majority of them do, so Mr. Jones allows them to continue. I ask Chris what he had been doing with the boy's story. He explains that the boy had been told by Mr. Jones to write more but that he didn't know what to write. He had run out of*

*ideas. Chris suggested a few more ideas. As the story is about a demolition yard he suggests the boy could give prizes, offer refunds and so on. I ask Chris why the boy came to him. "Because he's a friend". I ask Chris whether he takes his work to that boy for the same reason when he needs ideas. Chris says "No". He explains that he takes his work to Peter because Peter gives him more ideas. (3.9.97/25:6)*

The use of peer evaluation also creates expectations for later student performance, and the students quickly ascertain who is good at particular subject areas. John became known for his ability to act and perform in front of others. In one drama lesson he was chosen to act as a commentator in a comedy. As he got up to take on the role, one student was heard saying "This'll be good" even before the performance began. The student had already assessed John's ability before he began based on prior knowledge of John's ability to entertain.

In the following example, Chris illustrates an interesting link between peer and self-assessment. He assesses his peer's performance and uses this to self-assess and ultimately to increase his own performance. Sometimes informal peer assessment is used to enhance students' own learning or performance rather than their peers' performance. In order to assess their own performance students find it necessary to first assess others' performance in relation to the task. This was shown in a Physical Education (PE) lesson, where Chris, who as noted earlier is competitive in mathematics and spelling, also demonstrated his need to win during PE.

*I follow the group that has Chris, Peter and John in it. They start with a warm up, which is running. They are told to run to the first line and back, to the second line and back and then to the base line and back. Chris uses his hand initially when he gets to the line. He touches the line with his hand. He looks around and notices other students are just touching the line with their feet. He starts to use his feet at the next line. It seems to turn into a race with some of the students. They keep an active eye on where others are at. Peter does not seem worried and goes at his pace. However, John gets the hang of it and starts racing. He watches others that are close to him and tries to beat them. He wins the sections after the second running through and seems very pleased with himself. Chris has also been competitive but did not keep up with John. (23.6.97/19:2)*

Peer assessment also occurred in out-of-school learning settings and was generally associated with assisting each other rather than competing. In a judo class, Peter shows how he observed his partner working on a throw in a manner that could harm him (the partner). Peter noticed the inherent danger in the boy's technique and attempted to assist him learn a safer way for completing the procedure.

*They are now practising throws. They are in pairs and working on their own. There is a lot of talking between the pairs. They practise both the throws and being thrown. The coach is walking around and talking to them individually in their pairs. Peter is working with another boy who also has an orange belt. He is talking to his partner about how his head should be during a throw and says, "Don't put it like that because you could break your neck". Each time Peter and his partner throw each other they discuss aspects of the throw. Peter's partner is now crying, as he appears to have hurt his knee. Peter looks around but the coach is busy elsewhere. Peter talks to the boy who is still crying and is now pulling up his trouser to take a closer look at the damage. They seem to sort it out between themselves and go back to the throwing. (28.8.97/24:3)*

While peer assessment and self-assessment activities within a classroom setting were often instigated by the teacher, there were many examples where students took the initiative and self-assessed their own work without teacher direction. Part of student initiated self-assessment in an out-of-school setting involved the modelling of desired behaviour, which was done either by another student or by a more expert member of the team. The modelling of "expert behaviour" often played an important role in ongoing peer and self-assessment because it provided the students with a benchmark for their assessment of themselves and their peers. The student in the extract below, used the expert model as a way to assess his archery skills, but also sought the opinion of his peers as to why he was not meeting the mark.

*The student teacher shows and models the technique of pulling back the string from the bow and positioning the arrow. The students listen and watch. There is enough equipment for two students to have a go at a time. They each get three arrows. Two boys begin. For one of them, the arrow does not go very far. He asks "What's the matter with me? It's not firing". (11.11.97/28:2)*

### **6.3.3 Personal plane**

The personal plane of analysis provides a lens to examine how self-assessment enables individuals to transform their own participation and, by doing so, *change* themselves and others. While the previous planes of analysis have focussed on the wider assessment practices occurring in the various settings, and the ways peers and teachers have been involved in the assessment process, the personal plane examines how an individual's self-assessment impacts on future learning. Student self-assessment occurred within both the school setting and out-of-school setting, and occurred within the context of the established procedures in the various curriculum areas, and sporting or cultural settings.

Two different forms of self-assessment were occurring in the school setting. One involved a formal structured process, usually initiated by the teacher in the form of worksheet-type activities where the student filled in the gaps, completed a sentence or made a mark on a continuum. However, the way students completed the forms were not always indicative of how they felt about their learning or performance but, rather, how they perceived the *function* of these self-assessment sheets, as will be discussed more fully below.

The second type of self-assessment was informal, personal self-assessment, which was generally of a private nature and associated with the actual learning process or product. This form of self-assessment was linked to criteria created or developed by the learner, as opposed to the structured and teacher-led self-assessment sheets where the criteria were often implicit. One of the key features of student initiated self-assessment was that it occurred at all stages of the learning process and tended to be a formative and fluid process, whereas teacher-directed self-assessment occurred at the *end* of a learning situation, rather than during the learning activity and hence was largely a summative process.

The following example illustrates teacher-directed self-assessment. This observation took place during a food and nutrition lesson where all students had cooked and eaten a pie. After they had eaten the pie, the students were given a structured self-assessment sheet and were asked to self-assess the pie in relation to four factors – appearance, flavour, texture, and presentation. The extract from this observation highlights that in this situation the students really did not see the purpose or function of the self-assessment activity in relation to their learning, but viewed it as another process of the teaching session. Specific criteria associated with each factor to be assessed were not provided. The students viewed this exercise as another “hoop” to jump through, rather than as a means to help them jump through the hoop. As illustrated by the following extract, Chris held certain beliefs and expectations about the self-assessments he had been asked to undertake in this food and nutrition class. As a result of these expectations, he completed the self-assessment sheet based on what he believed the teacher wanted to see. Within the following extract, Chris explains to a boy how to complete these self-assessment sheets.

*11.35 a.m. Teacher showing class the self-assessment sheets on an OHT. Students paying attention and sitting at their desks. The self-assessment sheets have questions attached to assist the student. There is a scale of 1 – 3 for rating*

success (3 listed as being awesome). Chris helping teacher hand out self-assessment sheets. Chris going through his self-assessment sheet. Helen working through hers. Girl goes up to Helen and asks a question. Helen continues working. John working through his self-assessment sheet. I go and ask Chris what he is doing. He explained that they have to comment on appearance, flavour, texture, presentation. He had written beside them:

Appearance: Great

Flavour: Brilliant – like the cheese and apple combination

Texture: Dry (referring to crust)

Presentation: Can do better

The students then have to name the pie. Chris calls his pie a traditional American Apple pie. He told me this was because in America that's how they make these pies. He was then asked to design a new shape for a take-away pie.

Boy sits next to Chris and asks him how to fill out the self-assessment sheet. Chris says "Just write a comment. Boy says "Oh, you mean ...just...good".

Chris says "Yeah, but don't just go good, good, good, good".

Boy (and me wondering) "Why not?"

Chris: "Because you get told off for not thinking". (28.2.97/2:4)

Helen and John had also completed the self-assessment sheets in this food and nutrition class. Their responses about their pie, along with Chris' responses, for the same questions are outlined in Figure 6.5:

	<b>Helen's responses</b>	<b>John's responses</b>	<b>Chris' responses</b>
<b>Appearance:</b>	Great	Was a big pie	Great
<b>Flavour:</b>	Yummy	Soil	Brilliant – like the cheese and apple combination
<b>Texture:</b>	Great	Hard	Dry
<b>Presentation</b>	OK	Bad	Can do better

Figure 6.5. Student self-assessment responses during a food and nutrition class

This is an example of how the students received the message that presentation of work (appearance, presentation) is given high priority by teachers. It was interesting that John, who consistently tries to please the teacher, had written "bad" for presentation. As a researcher, I wondered what happened to the self-evaluations, and whether the teacher read them, and so asked John about them. As seen in the following extract, the questions put to John had a marked effect on his responses when he considered the consequences of completing the self-assessment, and when he thought the teacher might use these in her own evaluation. John had made a particularly big pie, with dry

pastry, hence his evaluation that the texture was hard. This extract discusses the presentation.

*John was finding it hard to comment on presentation. When he put down "bad" I asked him what happened to these self-assessment sheets. For instance, did they go on the school report. He looked worried and said "I don't know, should I ask?" I said to him "Oh, I just wondered whether you knew what happened to these..why do you do them?" John looks at his sheet and got his rubber out. He rubs out the word bad. And changed it to "a good effort". He looked up at me and said "I did it the way the teacher told me to do it. It just came out that way". I then asked him whether my comments about the report helped him change his mind. He screws up his face and said "Yeah". (28.2.97/2:4)*

Some months later, when collecting the work samples, another subtle change was observed. The word "soil" to describe the flavour of the pie had been changed to "lingering". The food and nutrition teacher had written in her comments on the work sample, noting "Good work John. Congratulations on your pie". The teacher had neither sampled nor examined the pie.

Teacher-directed self-assessment occurred in many other curriculum areas. In a language session, the students were asked to grade their draft copy of a story out of 25, have a peer proof-read it, rewrite the story and then regrade it. The following observation was taken during the draft grading of the story, where Jane was clearly not pleased with her product. However, it was interesting that neither the student nor the teacher had any specific criteria in mind as to how to evaluate or mark the story as reported below. While Mr. Jones asked the students to circle the "nice" words in their story, he did not provide any basis on which these words would be defined as "nice".

*Jane gave herself 14/25 for her first draft. I read the story and it had a really good introduction. I wondered how she self-assessed. She didn't seem to know how she came to award herself that particular mark (e.g., in terms of any specific criteria). I asked Mr. Jones what criteria students were using when they assigned themselves a mark, but he didn't seem too clear about how the students were basing their grade. (21.5.97/14:6)*

Later in this observation, Mr. Jones reiterated the peer's role in the self-assessment of this work. As this extract outlines, after the researcher had raised the question about criteria with Mr. Jones, he attempted to make it a little more specific for the class. However, again there is no indication on how a grade would be awarded.

*The proof-reading process involved the students circling the "nice" (teacher's word) words and underlining the spelling mistakes. Mr. Jones said it was vocab and interest words and paragraphing that were the criteria for marking. I had asked the teacher about the marking process. Mr. Jones reiterated some of his*

*comments to the class. He said to them "If you've done your job right with your editing you should improve". I wonder how they would know. He said to the class "Be 'fair and just' with yourself". I am still not sure how the students would know what mark to give themselves, and on what basis. Would they compare their work to their friend's? Pick a grade out of the air? (21.5.97/14:7)*

Informal student self-assessments were evident in all curriculum areas, and were not always visible to the teacher because students did not necessarily share these unless the occasion arose. For example, in a speech session, the teacher asked the students whether they had any problems.

*The teacher asks the group whether there are any problems. Jane says, "I don't know it [the speech] yet". Another student said "Mine doesn't make any sense". The teacher asks "Who told you that?" and the student said "I figured it out myself." (6.3.97/3:4)*

There appeared to be a connection between the way students felt about the *outcome* of their work and their enjoyment of doing the task. When they enjoyed doing the task, they self-assessed it in a more positive way.

*I talk to Chris, and ask him what part of his magazine he is most proud of. He likes the poems and stories. I ask him why and he says, "Because they're the ones I liked doing the most". (12.9.97/26:2)*

Another form of self-assessment occurred while students filmed a story they had written. Again, it was unsolicited self-assessment where students showed the ability to critique their work in relation to the criteria they had established.

*The teacher wasn't sure whether the taping had worked so he replayed the recording on a video monitor. It looked and sounded impressive, and the students showed obvious signs of pleasure at their work. However, Deb started commenting on parts she didn't think were up to scratch. She said "That bang doesn't sound good", and all four students stated they didn't like the way the spaceship in the first picture came out as it appeared lopsided with the moon out of sight. (1.5.97/11:2)*

The informal student self-assessment of work involved affective features. Students were proud when they felt they accomplished something particularly well, and this was evident in the way they looked at and talked about their work. In one example, the teacher asked students for examples of their work to show to the class. They had been working on a unit of history in early New Zealand. As part of a homework exercise, the students, as early immigrants, had written a letter to relatives in England regarding their journey in the 1800s to New Zealand. They had tried to make their letter look old and authentic so some had made their letter brown, put wax over it, crumpled it and made a

wax seal. The teacher asked for examples to show and read out to the class, but initially all the offers came from the boys.

*Three boys offer their letter as show cases but no girls offered to show their work. I see Jane and Deb looking at their work and seemingly wanting to offer it to the teacher as a fine example. They look very proud. Jane continues to examine her letter, holds it up, and shows it to her friends but still does not offer it to Mr. Jones. Finally Deb does, and he picks it up and talks about it to the class. She seems pleased. Jane looks on. (29.5.97/16:3)*

Sometimes, the students exceeded their own expectations and their self-assessment often highlighted cases when they surprised themselves. In a classroom observation with Helen during a writing session, I asked her what page she was most proud of in a magazine she had worked on for a couple of weeks. She turned to the “kids’ page” and explained that “*it turned out heaps better than I thought*” (12.9.97/26:2).

There were occasions when students could identify what they needed to learn or perform but barriers to learning prevented them (usually temporarily) from achieving their goals. This is illustrated in the following extract, taken from an observation during a Saturday morning trampolining class, where Helen is attempting a difficult manoeuvre on the trampoline.

*Helen has her run and she completes a sit..turn sit..back turn up..backward flip..tuck..layout back..(pike back) forward flip. She did this too fast and landed on her knees. Helen came over to me after she had finished. She explained what she was trying to do and that she had been trying this particular manoeuvre for a few months. She could explain what she needed to do, and could execute the entire movement but could not land on her feet. She always landed on her knees and fell forward. I asked her how she learnt to do a backward flip. She explained it was easy because two people held her while she went over so she could get an idea of the movement. She prefers the back tuck because she explained “It’s not so scary”. However when she performs the pike back where her legs are straight, she sometimes feels she is not in control. Helen has moved through a series of badges. She ran and got the badges to explain what she was doing. She had completed in this order ..Red ..Blue ..Green ..Yellow, and was now working on the Black badge. The move that is holding her back is a Crash Dive Bail Out. She can explain what she has to do and can do parts of it in isolation, but cannot execute the entire movement. (2.8.97/21:2)*

The criteria for evaluating their individual performance were often created by the peer group and were related to what value they put on certain skills. For example, in go-kart riding at the school camp, a group of girls were learning to ride in a go-kart. Although Helen had explained to the researcher that she needed to learn about the accelerator, brakes and steering in order to drive the go-kart, it was the speed of travel that

determined success within this group. As noted in the observation below, the girls did not concentrate on the fact that they had mastered a number of skills in order to drive the go-kart, but instead became concerned at how fast they went.

*3.30 p.m. I visit Helen's group again at 3.30 when they are on their go-karts. It seems that they get two turns each, and can make three laps. There is only one go-kart and the instructor is a person based at the camp. Again the directions and instruction are varied. All students listen, and are shown how to work the machine. I watch Helen on her second go around. She tells me there is an accelerator, brakes and steering which she needs to be aware of. The students before her are keen on speed but there are a couple of girls who were a bit reluctant to go fast. It seems that "speed" determined how well you did. One girl came back and asked if she went too slow. The others assured her, that really, she was going quite fast. The girl looked pleased. (11.11.97/28:5)*

#### **6.3.4 Summary**

The analysis through the three planes provided a means to identify the practices of self-assessment and to examine how students approached self-assessment activities in school and out-of-school contexts.

The community plane highlighted factors that influenced students' approaches to self-assessment. The learning activities that were assessed and rewarded by the teacher provided the students with cues as to what the teacher considered worthy of learning. The student's motivation in completing a task, rather than their ability to complete the task, determined the energy they put into the activity. Students' self-assessment of the actual *task* played a role in determining their approach to the activity, and, ultimately, to the self-assessment of their own performance.

In the assessments that occurred in the classrooms, teachers provided feedback largely on accuracy, completion and presentation of work. Within out-of-school contexts, feedback was provided on student performance in relation to an activity.

Teacher-initiated self-assessment occurred primarily within a school-based setting, and involved charts and checklists at the end of a lesson. Students adapted to these checklists by providing answers they believed would satisfy the teacher, rather than indicating their perceptions of their own learning. However, student-initiated self-assessment within a school setting involved activities that students enjoyed doing and where they gained personal satisfaction from taking part in the activity. Usually these

self-assessments were more likely to be linked to their perceptions of their learning, than to their perceptions of teacher expectations.

Informal student self-assessment also occurred in learning activities in out-of-school settings, where students were more used to assessing their performance in an informal and ongoing way. At times, the students knew exactly what they were attempting to do, could explain what they wanted to do, but were unable to execute a particular move (e.g., in judo, dance, trampolining or netball). Self-assessment became particularly important on such occasions, because the student inherently seemed to know where they were in relation to the task. This was in marked contrast to a school situation where students were often unsure or unclear about the goals, or did not understand the bigger picture, or the explicit criteria for assessment.

The use of peers in the assessment process occurred both within school and out-of-school settings. Peers often provided each other with models for the desired performance and therefore became a tool in the self-assessment process, because students assessed their own performance in relation to their peers.

## **6.4 Conclusion**

The cultural contexts of learning and self-assessment impinged both on the way the activity was defined and on how students interpreted the learning activity. There was a difference in the messages given to students about the purpose of both learning and self-assessment in school and out-of-school settings.

The students moved freely from one context to another, and became skilled in reading the cultural aspects of each context. The setting played a role in defining the context (such as the assembly hall), but other aspects such as teacher and the activity contributed to the definition of expectations and cultural acceptance. Common settings in a school environment such as the assembly hall, could on the one hand inspire fear and trepidation (during a school assembly) and on the other hand excitement, fun and noisy creations (such as drama and movement or games lessons).

Learning within a variety of contexts required the learner to be cognisant of the features associated with that context. These aspects included the features of the setting, the

teacher approaches to facilitating learning and managing student behaviour, and the relationship with peers and others in the learning environment. Therefore, other aspects associated with learning, such as the *content* of learning and *individual* student attributes, are only some of the many aspects of the total learning context.

When entering a learning environment, the learner became accustomed to the different mores of that culture and practised the advanced skills of the experts already associated with the culture. This form of apprenticeship was evident in schools and out-of-school learning contexts, and the learners were enmeshed in several different apprenticeships.

School and teacher assessment practices in learning situations relayed information to the students about what was worthy of their time and energy. These practices communicated inherent cultural values about learning and about the context of the learning situation. However, students also identified what was important to them, and this combination created a context for their focus.

The analysis through the community plane highlighted some differences in students' experiences of learning and self-assessment in school and out-of-school contexts. In any context, the importance of presenting learners with the overall learning goal to facilitate learning and self-assessment was highlighted. It is particularly advantageous to involve students actively in establishing their learning goals, and the criteria for self-assessment. Students were less able to self-assess their learning or to identify the value of learning when learning isolated and specific skills without a broader picture of the goal.

Choice of participation in an activity did impact on students' ability to self-assess and to their approach to learning. The participation in out-of-school learning contexts was voluntary and the students chose to take part in these because of an interest in the activity. However, in a compulsory school setting, students showed less interest in some of the activities offered through the New Zealand school curriculum. This played a role in how students approached their learning, because there were times when they did not complete work or approach an activity with enthusiasm because they did not like it. Students' approaches to learning in out-of-school settings were categorised by interest in the content, motivation to learn, and clear aims for

achievement. The students were better able to monitor and self-assess their performance in out-of-school settings because there tended to be more clearly identified aims for achievement. There were more examples of students taking “risks” in their learning when in an out-of-school context. This may have occurred because the students had ongoing support from coaches and peers; they had role models from more expert peers or coaches to show them what they were trying to achieve; and they had their own learning goals.

Clear and explicit goals for learning were important factors in students’ ability to self-assess their work. There was evidence to suggest that students who were introduced to the overall learning goal, and could choose their own learning objectives within this larger goal, were more motivated in their learning and were less dependent on the teacher to provide guidance on their self-assessments. In a classroom setting, students were often not aware of the learning goals, or the criteria with which these goals were to be evaluated. It was also interesting that students’ goals for their own learning were sometimes different to the teacher’s, which impacted on the students’ self-assessments because they were assessing their work in relation to their learning goal – not the teacher’s.

Within a school setting, large class sizes impacted on the students’ approaches to learning and self-assessment. With large class sizes, the strategies teachers used to manage classroom behaviour tended to impact on their teaching strategy. For example, teachers set up competitions between and across student groups to keep them working, and behavioural systems were set up in the guise of rewarding learning outcomes. In contrast, out-of-school settings often had fewer students per group, or had a higher coach-student ratio, and there was little evidence of behaviour challenges with the students who had chosen to attend.

Students’ approaches to learning were affected by context. This was particularly evident in the way they “practised” a skill. In a school setting when “practice” was used as a method to learn, it was usually associated with discrete and isolated skills. However, in an out-of-school context, while students still used “practice” as a means to learn, it was used as a way to incorporate skills into a broader context.

Peers played an important role in student learning and self-assessment. Peer advice was utilised by students in both school and out-of-school contexts. While a formal peer support structure was set up in school settings, it was the informal peer support that tended to play a significant role in student learning and self-assessment in both school-based and out-of-school learning.

Each context provided students with diverse opportunities for learning. Whether in a school or out-of-school setting, students needed to adapt to the cultural expectations of the learning context. This entailed a variety of ways of interacting with their peers and other adults, which impacted on their approaches to learning and self-assessment. The use of clear and explicit goals, expert role models, and informal peer support provided students the necessary support to take risks in their learning, and to motivate them to participate fully in the learning activity.

The out-of-school settings provided a further perspective through which to identify some of the practices that impacted on students' approaches to learning and self-assessment. It was interesting to note that self-assessment facilitated student involvement in the learning process more successfully in out-of-school contexts, even though self-assessment as a practice was established more formally within a school setting.

There were some notable differences between the school and out-of-school contexts that have been outlined in this chapter and are summarised for learning (see Figure 6.6) and self-assessment (see Figure 6.7). In particular, teacher-initiated self-assessment practices through charts, checklists and self-grading exercises that were commonly used in schools as part of a summative process, showed that students were not self-assessing their own learning or linking these exercises to their learning, but were completing them to satisfy teacher expectations.

The data from both phases of the study identified the clear roles that learners assume when taking part in a learning or self-assessment activity. These will be discussed in the following chapter. The relationship between students' conceptions of learning and self-assessment in relation to the context in which they are formed, will also be explored.

<b>LEARNING</b>	
<b>SCHOOL</b>	<b>OUT-OF-SCHOOL</b>
<b>COMMUNITY PLANE</b>	
Compulsory attendance.	Choice of participation.
Learning discrete skills as part of a larger goal.	Learning to become an expert in the area (e.g., trampolining, netball, judo, etc.). Apprenticeship model of expert and novices.
Goals not always explicit or understood by the learner.	Clear and explicit goals present in the learning.
Focus on discrete tasks – focus on parts.	Outcome and performance focussed – Focus on the whole, although discrete parts practised within this whole focus.
Large class sizes.	Small groups or high student-coach ratio.
Repetitive learning. Practice – a strategy used to learn discrete and isolated skills without necessarily transferring these to a wider content.	Repetitive learning. Practice – a strategy used to learn skills before integrating in broader context.
<b>INTERPERSONAL PLANE</b>	
Learning goals are teacher initiated and do not necessarily reflect learner's own goals.	Student has clear personal and learning goals.
Formal peer support structured by teacher but informal support present in <b>peer group</b> .	Peer advice utilised by students to increase individual performance.
Predominantly a process led by teachers but evidence of informal interaction with peers.	Interactive process with teachers and peers.
<b>PERSONAL PLANE</b>	
Student learning goals may be different from teacher's.	Student identifies own learning goals.
Limited risk taking observed.	Student prepared to take risks.

*Figure 6.6.* Learning identified through the community, interpersonal and personal planes in school and out-of-school contexts

<b>SELF-ASSESSMENT</b>	
<b>SCHOOL</b>	<b>OUT-OF-SCHOOL</b>
<b>COMMUNITY PLANE</b>	
Teacher initiated: Expectations to provide “accurate” self-assessments.	Student initiated: Usually student has own criteria as well as external criteria.
Structured peer assessment, teacher rewarded.	Students use each other to provide benchmarks.
Largely summative, occurs at end of learning activity.	Largely formative, viewed as an aspect of learning.
Implicit criteria.	Explicit criteria to assess each other.
Quantitative – students are primarily asked to assign themselves a mark or grade.	Reflective – students self-assess their performance in qualitative terms regarding skills developed.
<b>INTERPERSONAL PLANE</b>	
Self-assessment is used to enhance peer performance: students provide each other with models and benchmarks.	Self-assessment is used to enhance peer performance: students provide each other with models and benchmarks.
Discourages risk taking when students believe teachers evaluate the self-assessments.	Encourages risk taking with support.
Informal student initiated peer assessment provides advice on teacher expectations of self-assessment.	Informal student initiated peer assessment is linked to learning and is supportive and encouraging – qualitative.
Teacher-initiated self-assessment directive and often criteria implicit. Checklists and structured evaluation sheets presented by teacher.	Primarily student-initiated self-assessment based on student’s own learning goals. Completed verbally or in the head.
Teacher directed peer assessment occurs at end of activity and is grade or mark based – quantitative.	Students have access to the big picture – how an “expert” performs and utilises “expert” advice to understand criteria.
<b>PERSONAL PLANE</b>	
Students do not link classroom-based self-assessment activities to their own learning.	Usually student has own criteria as well as external criteria, and links self-assessment to ongoing learning.
Teacher-initiated self-assessment is generally not indicative of how students feel about their learning.	Self-assessment is usually private, and linked to own established criteria.
Students not always motivated to achieve teachers’ goals for learning.	Students usually motivated to achieve desired learning outcome.

*Figure 6.7.* Self-assessment identified through the community, interpersonal and personal planes in school and out-of-school contexts



## Chapter 7

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### Learning and Self-assessment

*Learning is just like something that happens everyday, it just happens, even if you don't know that you're learning, you're probably always learning. (M08:6)*

This chapter draws on the results from the phenomenographic and ethnographic results to discuss the influences of the different learning contexts on students' conceptions of learning and self-assessment. The actual conceptions that students hold, in turn influence the way they approach learning and self-assessment activities. Learning and self-assessment are intricate and dynamic concepts because the learners, immersed in these processes, are part of changing communities. In any study of learning, the experiences of learning can be explored and examined. However, the phenomenon itself, being neither static nor readily measured, can not be easily captured. This complexity inherent in the phenomenon of learning should not deter us from trying to "expand and deepen its meanings by looking at it in different contexts and from different points of view" (Greene, 1996, p. 56). In the present study, it has been possible to gain interesting insights into learning and self-assessment by employing methodological approaches that encapsulate the student's perspective about their learning and self-assessment and also examine learning and self-assessment activities in a number of settings and contexts.

This chapter utilises the results from the two previous chapters to argue that students assume a number of roles while involved in learning and self-assessment. The involvement of students in phenomenographic and ethnographic research is discussed first. This is followed by a discussion of the impact that students' understanding of learning and self-assessment have on their learning activities. The discussion then considers the diverse roles students assume while learning and self-assessing, and highlights the variation between the meanings students attribute to learning approaches. Students often talked about the same learning approach, for example, practising a skill, yet meant quite different things about *practice* in relation to their learning. Finally, it is argued that the influence of context on learning and self-assessment influences how

students approach a learning task and their decisions about what involvement they will have during the process.

## **7.1 Involving students in phenomenographic and ethnographic research**

Gardner (1991) argued that “we must place ourselves inside the heads of our students and try to understand as far as possible the sources and strengths of their conceptions” (p. 253). To assist the aim of understanding the student perspective, the present study incorporated methods that focussed on the student voice and experience. A phenomenographic approach enabled the exploration of learning and self-assessment within the specific group of school-aged students, and the second phase used ethnography to help examine these phenomena in school and out-of-school contexts. An ethnographic approach was employed after the phenomenographic results identified the conceptions of learning and self-assessment because, as Carr (2000) points out, “an understanding of the children’s perspective on their learning can only make sense in relation to the local opportunities to learn” (p. 53).

The use of qualitative approaches in this inquiry ensured that the student’s voice was heard. As Paley (1979) observed, “children have much to teach us, if we but stop and listen” (p. 142); something which Heshusius (1995) argued, we rarely do and which is not as easy as it sounds. In the present study, listening to and understanding the voice and experiences of the learners was paramount. However, by entering the various learning contexts in the second phase, as a researcher it was important to “go with the flow” in order to allow the complexities of the learning activities take their natural course. While this meant that the researcher was not able to control the curriculum areas that were observed or the events that took place within the activities, it ensured that the observations were as natural as possible and not contrived for the research. The benefit of such an approach was seen in the rich data gathered, which may not have been possible under controlled conditions. In a similar way, Newman, Griffin, and Cole (1989) argued that “giving away the usual scientist’s control, we hoped, would let us see what we could not know enough to see if we retained full control” (p. 22).

The variety of settings and contexts examined in the second phase of this study provided rich data sets that illuminated the students’ conceptions of learning and self-

assessment. The students provided insightful statements and illustrations about their learning and self-assessment experiences that, consistent with earlier studies, demonstrate children can learn to examine and think about their own learning and thinking (Ginsburg, 1997; Pramling, 1983, 1988).

Perry and Weinstein (1998) observed that, “children are rarely asked, but are able to share a great deal about the quality of their early school experiences, both about how they feel and what they have learned” (p. 189). This was certainly the case with the students in the present study, who shared a wealth of information about their experiences of learning and self-assessment, and demonstrated these views in a range of settings. Their views on what constitutes learning, and how they knew they had learned, highlight the variation of learning and self-assessment experiences and practices within a same-age cohort.

While data gathered within this study have derived from both second-order (phenomenographic) and first-order (ethnographic) perspectives, the data are used collectively to discuss the students’ experiences from their point of view. The students’ views were actively sought and were integral to the understanding of the data in both phases, and therefore while the discussion takes a first-order perspective, it takes place within a second-order context. Both perspectives are seen as complementary.

## **7.2 Students’ understandings of learning and self-assessment processes**

The results from both the phenomenographic and ethnographic data sets suggest that students experience learning and self-assessment in a number of ways. They are influenced by the context as to how they approach learning and self-assessment activities and, depending on the context and the nature of these activities, the students assume a number of roles. The variation in the meaning attributed to these learning and self-assessment activities is related to the way in which students viewed the point of learning.

### 7.2.1 Conceptions of learning and self-assessment

Within this study all learners were involved in a diverse range of learning activities, some of which were given higher priority or value by either teacher or student. The context of the activity influenced how the learner ultimately perceived and approached learning and self-assessment. There were five identified conceptions of learning that largely demonstrated consistency with previous findings on tertiary student learning (Säljö, 1979; Marton, Dall'Alba, & Beaty, 1993), even though the analysis phase of this study did not employ the categories previously identified by Säljö (1979).

There were two main differences identified in this study. First, the fifth learning category, *different ways of knowing* identified in the year 7 learners was not the same as Säljö's (1979) fifth learning category *seeing something in a different way*; and second, the previously identified sixth conception, *changing as a person* (Marton et al., 1993), was not present with the learners in this study.

In this study the conception of learning as *different ways of knowing* was expressed by students as realising "knowing something" could involve different perspectives. For example, three tenths was no longer just three tenths for one student, when he realised it could also be 30%. In this cohort of year 7 students, the awareness that there were different ways of knowing about a subject or concept was quite distinct from the earlier category of *learning as understanding (D)*, where students sought meaning from the content but were not necessarily looking for different perspectives. In Säljö's (1979) study, adult learners who expressed the fifth learning category also took a wider perspective but moved their thinking from the particular subject area to the wider world. The young learners in this study, did not move into the wider world.

The second difference noted in this study from the earlier study undertaken by Marton, Dall'Alba, & Beaty (1993), was that students did not identify learning as *changing as a person (F)*. Given that the students in the present study were young, it is perhaps not surprising that the most sophisticated conception of learning identified in an adult cohort was not present in this study.

There were six identified conceptions of self-assessment that have not been identified in previous studies. The variation of conceptions of self-assessment indicated that even

within a same-age cohort, students come to know that they have learned “something”, in a variety of ways.

Students mainly viewed learning within a school context and tended to conclude that learning is an activity that occurs at school. In the phenomenographic phase, the students generally associated learning with tasks undertaken at school. This was explained through the ethnographic phase, where it was observed that structures such as assessment systems, curriculum content and school procedures strongly influence the way students experience learning. Gardner (1991) has previously observed that students soon realise that school is about the acquisition of knowledge and skills, and about determining whether they have the ability to attain these skills. As Eisner (1994) also contended, “the child’s problem becomes largely one of learning how to follow rules and to complete assignments – in short, to learn how to do what is expected by others who know what the correct solutions are to the problems students encounter in school” (p. 60). It is perhaps not surprising that students develop the attitude that “*you’ve got to get the full facts, otherwise you might end up being wrong*” (10.12.97/Chris:2).

It is evident in this study that the less sophisticated views of learning were reinforced for the students by the school assessment structures. Consistent with other studies, the results from this study indicate that many students believed assessment systems in the school are designed to identify whether learning had occurred (Entwistle & Ramsden, 1983). While other studies have primarily looked at tertiary students and the impact of assessment on their learning (Entwistle & Ramsden, 1983; Ramsden, 1988), it is disconcerting to note that even with younger learners, years 7 and 8 students, assessment practices can have a strong influence on their learning.

While Marzano, Pickering, and McTighe (1993) believed assessment practices should *reflect* the learning process in the classroom, it does appear from the results of this study that the students’ conceptions of learning are in part reflecting the school’s and the teachers’ assessment practices. The timely warning of the impact of tests on student learning (Gipps, 1994; Nicholls & Hazzard, 1993), should also include the impact of assessment practices on students’ conceptions of learning, which influence the way they approach their learning.

In effect, students' conceptions of learning were influenced by the school's assessment system. This was apparent in the students' conceptions of learning, particularly when referring to a school context. For example, in a school situation, students generally held less sophisticated conceptions of learning (such as memorising and reproducing, and being able to recall facts quickly) that, as demonstrated in the ethnographic phase, are encouraged through school assessment systems. Marton and Säljö (1976) indicated that "students adopt an approach determined by their expectations of what is required of them" (p. 125).

The results from the present study also demonstrated that students conceptualised learning differently in out-of-school contexts. For a start, some of the students held a wider view of learning and recognised it as a process occurring beyond the school gates. As seen in Phase Two of the study, in out-of-school learning situations the assessment systems were quite different, which impacted on how the students approached their learning. Consistent with earlier studies, the out-of-school contexts impacted both on how students viewed learning, and how they approached the learning task (Boaler, 1993; Ceci & Roazzi, 1994; Lave, 1996; Rogoff, 1995; Wertsch, Minick, & Arns, 1984).

This study highlighted the dialogical relationship between learning and self-assessment, where each process influences the other. While Ramsden (1988) argued that the way students perceive assessment influences students' learning, there was evidence in this study to suggest learners' conceptions of learning might impact on their conception of self-assessment. As identified in chapter 5, students who held relatively low sophisticated conceptions of learning, also held relatively low conceptions of self-assessment. Similarly, if students held more sophisticated views of learning (learning categories D and E), they were more likely to actively develop criteria for self-assessment and set goals to assess their own learning (self-assessment categories D and E), rather than rely on teachers or grades to confirm it (self-assessment categories A and B). In contrast, the students who experienced learning as the acquisition of skills or the recall of information (learning categories A and B), were also the students who conceptualised self-assessment as requiring external sources (self-assessment categories A and B) to verify that learning had occurred. The student's conceptualisation of learning, then, is inextricably related to their conceptualisation of

self-assessment because the two phenomena are aspects of a greater phenomenon – awareness of learning.

The variation in the experiences of learning and self-assessment, as demonstrated through the categories of description, was likely to affect the way students *approach* learning rather than their performance or outcome of learning. In Phase Two of the study, the results from the participating students' Progressive Achievement Tests (PATs) and classroom-based assessments, indicated that students with a less sophisticated view of learning were not necessarily performing at a lower level than their peers. This confirms an earlier research finding, where in a study on years 7 and 8 students' learning in science and social studies in an intermediate school setting, Nuthall (1996b) observed that “students whose percentile scores on school-administered PAT tests indicate very high levels of ability appear to learn in exactly the same way as students whose percentiles scores are relatively low” (p. 2).

What is this telling us then? For a start, students' performance on tests and other school-based assessment tasks, are neither good indicators of *how* students learn nor the motivation they bring to the learning. This is already documented at both primary and secondary school levels (Broadfoot, Abbott, Croll, Osborn, Pollard, & Towler, 1991; Nash, 1997). However, what the results from this study point out, is that the ways students conceptualise learning and self-assessment impact on how they approach a task. If they believe that learning is largely about memorising and reproducing, they will adopt strategies to facilitate this type of learning. Even students who perform well on PAT and other tests, will approach learning in this superficial way if they have a less sophisticated conception of learning.

The type of assessment procedures used in the school and the classroom for these students tended to focus on recall of knowledge rather than on understanding. This may inhibit students from striving for understanding, meaning and purpose in their learning (Bereiter & Scardamalia, 1996). In addition to this, the way in which the school and classroom systems rewarded certain types of learning suggests that students are rewarded and therefore encouraged to take a less sophisticated conception of learning.

Within classroom settings in the present study, the focus of the learning task was often placed on presentation, speed and completion of work, and the assessment emphasis

was placed on accuracy, “getting it right”, and the “one correct answer”. This confirms previous research findings on the link between this form of assessment practice and student learning. For example, earlier research on the relationship between assessment and learning has identified that this assessment emphasis can have a detrimental effect on student learning and hinder the development of reflective skills in learners because it encourages an atomistic and surface approach to learning (Crooks, 1988; Gipps, 1994; Ramsden, 1988).

As indicated in this study, some students tended to focus on getting the “right” answer at the expense of creativity and problem solving, because this was rewarded through the school assessment system. A change in focus to problem solving solutions may result in a range of answers, some better than others, and encourage learners to think more laterally. This is not new, because as Donaldson (1978) pointed out over 20 years ago, “if one wants to encourage the development of reflective skills in the early stages, then speed and certainty will *not* be the things to stress” (p. 98).

The less sophisticated conceptions of both learning and self-assessment reflect students’ reliance on support from teachers or parents to provide some form of measure to indicate learning. However, irrespective of how students conceptualised self-assessment, they were influenced by the classroom context when completing self-assessment sheets for the teacher. Within a classroom setting, whether the students required the guidance of a teacher’s grade to self-assess their work, or whether they placed confidence in their own ability to self-assess without the grades, on the whole they tended to present their work or their self-assessment sheets either to please the teacher or to satisfy the teacher’s expectations. This is consistent with a number of studies that have identified that students attempt to deliver what they think will be rewarded (Marton & Säljö, 1976; Ramsden, 1988). In contrast to the school context, when students in the present study referred to out-of-school activities, they were more likely to hold more sophisticated conceptions of self-assessment. This meant they were not reliant on teacher’s grades to self-assess their work and, interestingly, they were not driven by the intention to produce work they believed the out-of-school teacher would reward.

While the conceptions of learning and self-assessment identified in this study are hierarchical, they are not linear. Therefore, depending on the context referred to by the

student, a number of conceptions of learning and self-assessment could be held. For example, a student could express a higher conception of learning when discussing cricket techniques and learning about stance in cricket, but revert to a lower level of conception of learning when expressing experiences of rote learning multiplication tables during a mathematics class at school. This was mainly the case for students who held relatively more sophisticated conceptions of learning and self-assessment in one context, who also referred to lower conceptions in another context. In general, the school-based conception of learning tended to predominate. However, those students who generally held the least sophisticated view were unlikely to see either learning or self-assessment in more inclusive and therefore sophisticated ways, and were therefore less likely to hold more than one conception. Students who demonstrated a sophisticated conception of learning or self-assessment could move back towards less sophisticated views when describing particular contexts. In relation to earlier research where it was argued that learners operate in a number of systems and need to be flexible in their approach to learning (Boaler, 1993; Rogoff & Toma, 1997), the results from this study further the case that some learners adapt even their conceptions of learning and self-assessment according to context, which in turn influences the way they approach the task.

In the present study, the most common variation within individual students was observed when they described learning in both school and out-of-school contexts. Learning in out-of-school contexts was usually described in more sophisticated and inclusive ways with self-assessment closely linked to goal setting and personal motivation. For example, when students had specific goals in mind, such as a trampolining manoeuvre, a correct judo throw, or a particular way to play a piece of music on the piano, they were motivated to persevere to achieve their goals. The self-assessment of their performance was largely based on the criteria they had established or were using, rather than being solely dependent on teacher feedback. The link between personal motivation and performance was made by Ceci and Roazzi (1994) who highlighted the mathematical ability of street vendor children in a street setting.

### 7.2.2 Different ways of experiencing learning

While other studies have indicated that students experience school-based learning as “work” (Bereiter & Scardamalia, 1989, 1996; Lancy, 1993), which they dislike (Woods, 1990), it is important to note from this study that the way “work” or “boring” is defined differs from student to student. While students in the present study used a common language when talking about learning within school, they often placed different meanings on these ideas. They used the notion of “work” to be done, and made a distinction between fun and boring learning. However, the way in which they used, understood and explained these terms varied. For example, “boring” for one student was clarified as work that was too hard, while for another student “boring” referred to work that was considered too mundane and repetitive. Interestingly, students in Pollard et al’s (1994) research, were more likely to define “boring” as “teacher-framed work” and work that involved “doing what the teacher says” (p.173). The students in Filer’s (1997) study used “boring” in relation to news items they gave that would “please” the teacher, rather than the “deviant comedy” that would appeal to their peers. In another way again, boring was identified in Anthony’s (1994) study of secondary school students in a mathematics context as, “the result of the work being too hard or uninteresting” (p. 230).

In a school setting, students experienced learning in a different way from the activities they undertook in out-of-school settings. This is in part the result of the school curriculum and organisational structures in schools, and partly the different teaching methods used. As noted by Shank (1996), “the disparity between the information-dense and ever-changing lives our children lead outside of school, and the linear relatively information-sparse and curriculum-driven activities they do in school, are growing every moment” (p. 205).

The effects of students’ experiences of learning on their approaches to learning can be observed in the strategies they adopt. Rote learning and practising were two strategies students used to learn, although these strategies were different and held different functions for the students, depending on the student’s *goal* for learning and conception of learning and self-assessment. It was evident through both phases of the research that *practising* skills or tasks played an important role in student learning and self-assessment. While this was evident in the phenomenographic phase, it was the

ethnographic phase that highlighted the importance of context as to how students viewed the role of practising in relation to their learning. Rote learning was one strategy students used to regurgitate facts and figures and as a technique for memorising material such as spelling words and multiplication tables. However, practice and the use of rote learning as a strategy also had other functions. For example, through the observations it was noted that students sometimes used repetition (i.e., rote learning) to practise *ideas* rather than facts or figures, and when giving speeches the students used these ideas as a basis for their speech. In this scenario, the students were not using rote learning to memorise the speech but to recall ideas that they then discussed. Therefore, in this instance, students were using rote learning and practice as a means to identify important information they understood and could discuss, rather than as a vehicle to recall facts in a mechanical manner. This means that when students use the strategy of practising and rote learning, they do so for different purposes according to context and according to their conception of learning. While earlier studies have shown incongruity between students' and teachers' goals for learning (Bereiter & Scardamalia, 1989, 1996; Lemos, 1996; Marton & Säljö, 1976), this study identifies that even within the student group, there is disparity between what students mean by specific learning approaches.

In the present study, there appeared to be a connection between why students “practise” and the transmission model of teaching. This was particularly apparent in the less sophisticated conceptualisations of learning (learning categories A, B, and C) that focussed on the recall of information, and was primarily evident in the context of school learning. Consistent with the study undertaken by Berry and Sahlberg (1996), that identified students' views of learning in the classroom were about “transmission of information and reproducing memorized bits of it” (p. 34), students in the present study who held the less sophisticated views of learning used practice as a strategy to reproduce facts. However, this is not surprising, given that school-based learning rewards students who are able to recall information in tidy, well-presented exercise books, which often has little relevance to the actual learning that has occurred. As indicated in Ramsden's (1988) work, the students were delivering what they thought the teacher would reward. The problem for educators is, that students' success in terms of scores on their performance or assessments do not necessarily reflect real learning but rather their ability to memorise facts (Pasi, 2000).

In the present study, the students who made a connection between learning, rote learning and their memory are a case in point. The student who stated, for example, “*right, we’ll call up the memory and they write it down on the paper inside your head*” (F08:9), illustrated the connection she made between rote learning and memory. Another student attributed low marks in a test to a poor memory – not his understanding. As he stated, low marks in a test would mean “*I’m losing my memory. I’m badder than I was*” (M03:4). However, for other students, remembering was about connecting their old experiences with the new information. For example, in the river trip, the “braided river” was described by the teacher as similar to girl’s braided plaits. When asked about braided rivers, students recalled the girl’s plaits rather than anything specific about the type of river. In Alton-Lee and Nuthall’s research, students were observed learning both *what* they were taught and *how* they were taught (Alton-Lee & Nuthall, 1997; Nuthall, 1996a, 1996b, 1997, 1999). In their studies, students remembered the content of their learning in relation to the context within which they learned. Sometimes the actual learning activities helped identify curriculum content. For example, the students could remember completing a particular activity and then relate the activity to the specific learning material.

However, the assumption is that even when students remember the activity, they know what the aim and goals of the learning content are in order to recall the learning material. As the results from the present study identified, there were examples where students did not know the aim of the lesson, for example when they were involved in science activities with paper and water. It is doubtful, therefore, whether these students would identify what they had learned even though they may recall the actual learning activity.

There was evidence in this study to suggest that students did not always recognise the aims or objectives of a learning activity, nor did they always interpret those aims in the way the teacher anticipated. At times students had different goals for their learning from their teacher. Students perceive and therefore approach tasks in different ways from their peers and from their teachers (Ames, 1992; Marton, 1981; Pramling et al., 1993; Woods, 1986, 1990). It is perhaps not surprising that self-assessment strategies adopted by the classroom teacher will not always be conducted in a meaningful way by the student. As the way students perceive a problem affects the way they approach the learning task (Marton & Booth, 1996, 1997; Marton & Ramsden, 1988; Ramsden,

1988), this variation in interpretation of both task and goals needs to be addressed and acknowledged by the teacher.

Boaler (1993) has argued that in a mathematical context, students should be encouraged to analyse mathematical problems in relation to their perception of the problem. By this Boaler means that students need to establish their own understanding and meaning for the task before embarking on the analysis. Otherwise, “school mathematics remains school mathematics for students when they are not encouraged to analyse mathematical situations and understand which aspects are central” (Boaler, 1993, p. 17). Students for whom the point of learning is not clear and who have not identified the meaning of the task, will not be able, as Boaler urges, to identify the central issues. Students’ understanding of the “point of learning” also influences their approach to learning.

### 7.2.3 The point of learning

*I think the point of learning is just to help you get through life...I think you only really learn if you listen, if you want to listen to it. I think it all depends if it's fun, because kids don't like school because it's not fun.*  
(F10:8)

As noted by the student above, learning for some students was viewed as a means to “get through life”, but the meaning attributed to *why* this is so, and *how* it is done, varied. The students in this study placed a strong emphasis on the point of learning. The significance of the students referring to the point of learning is related to Robson’s (1993) claim that there is a relationship between how children view learning and what they think school is about. In the present study, the students explained the point of learning as job related or to secure their future in the workforce. They made a link between learning and the income and type of job they wanted.

The marked difference between how students viewed learning in school and out-of-school settings was demonstrated most strongly through their view on the *point* of learning. In out-of-school learning contexts, students viewed the point of learning in a different way. It was not related to job or future income, but tended to be about interest and fun. As the students saw it, out-of-school learning activities were undertaken freely and through choice because of an inherent interest or drive in their chosen area.

Whether it was tennis, judo, making fences or picture frames, the students made the decision to learn because something in their “mind’s eye” drove them to succeed and to learn new skills. In these cases, the students strove to achieve for their own purposes and on their own terms. They felt a certain amount of freedom because they knew, as many of them explained, that if they became bored, tired or unhappy with this learning, they could choose to opt out.

From the students’ perspective, the point of learning was related to their conception of learning and self-assessment, and ultimately to how they approached a task. If students believed the point of learning was to get a good job and therefore achieve high grades, they were more likely to connect assessment to grades and marks to allow this to happen. In a similar way, other studies have shown that students adopt a strategic approach to learning when their goal is to maximize their grades, rather than to understand the content of the material (Burns et al., 1991; Gipps, 1994; Ramsden, 1988).

Although students were not explicitly asked *why* they learned, they were asked, *what is the point of learning?* As noted in the phenomenographic results, the point of learning for one student in particular, was to recall what she already knew, because what she was going to learn was “*already in there*”. She stated, “*I think just before I was born, I think that it was actually all in there but everything I was going to learn was already in there, but I had to actually experience and have it told to me, learn it*” (F10:9). While this student had a more simplistic view of learning, it was reminiscent of Plato’s theory of learning, where he identified learning as the process of recalling knowledge based on one’s life already lived. Other students believed they came into the world with a mind devoid of content which is similar to Locke’s theory, and they therefore believed that learning was about filling the mind. For example, students made statements such as, “*you don’t know anything when you’re born*” (F06:13); and “*when we’re born we have a brain...and it’s kind of empty and we need something to fill it up*” (F09:5).

Through both the phenomenographic and ethnographic phases, it was apparent that students needed some reference to the “point” of learning because this related to the way in which they experienced learning. For example, in out-of-school contexts, students had a very clear view of the point of learning. They knew why they were attempting to improve in a number of areas such as a netball strategy, a bowling

movement in cricket, producing different speech productions according to genre, or improving on the production of picture frames. In contrast, in a school context when they did not always appreciate the point of learning an isolated spelling word or a particular multiplication table, they tended to refer to learning as “boring”.

In both the phenomenographic and ethnographic data sets, students focused on the *whole* of learning out-of-school, whether it was making picture frames, jazz dancing, or playing the piano. In contrast, students viewed school-based learning with a sense of having learned in isolated units, such as learning to spell specific words, learning an individual multiplication table, or writing stories on a theme. The learning appeared to be experienced from parts to the whole, and often in the school context students were unaware of what the actual *whole* was. For some students, this affected their understanding of the point of learning because they could not see where the activity was leading. Therefore, for the students at school, the point of learning often came to include future jobs because there was ambiguity (unlike out-of-school settings) as to what the present learning was about.

Students’ conceptions of self-assessment were linked to their approach to learning. When students held one of the less sophisticated conceptions of self-assessment, such as requiring a grade, mark or a teacher to confirm learning, they also tended to view learning as acquiring facts or recalling information, and were therefore more likely to adopt a surface approach to learning (Bereiter & Scardamalia, 1989; Marton et al., 1993; Säljö, 1979).

In a converse way, the students’ conception of learning and perceived point of learning, was linked to their approach to self-assessment. In the example of making a tepee, one student explained that for him on that occasion the value of learning was not considered a priority because he would never have to live in a tepee and therefore would never have to build one. His self-assessment of that tepee was that while he knew the criteria for marking, and could describe the rationale for each criterion, he chose not to meet those criteria. Therefore, his final product, when graded by the teacher, was not representative of what this student actually knew. However, his conceptions of both learning and self-assessment impacted on his approach to this learning task, and ultimately to the final outcome. Broadfoot, Abbott, Croll, Osborn, Pollard, and Towler (1991) have cautioned that, “it is as well to remember that there is an important

distinction between what children can do and what children will do on any given occasion” (p. 166). It is not only the motivation of the student in relation to the learning task that determines how the student will approach a task, it is also the associated conceptions of learning and self-assessment, and the perceived point of learning that have an impact on the student’s approach to learning. In a secondary school setting, Nash (1997) observed that there was a link between the way students viewed the approach to learning and their overall performance at school. As Nash (1997) claimed, “If there is a belief, for example, that nothing useful is learned from class discussions, then students who adopt that position will take little part in such exercises and probably gain nothing from the experience” (p. 4).

### **7.3 Diversity of effective student roles**

As learning is such a complex phenomenon, it was important to examine the learner’s roles and expectations during actual learning activities as well as understand the variation in their conceptions of learning and self-assessment. In the present study, students assumed a number of roles and responsibilities when they participated in learning and self-assessment activities. While it has been argued that the centrality of others is a critical factor in the learning process (Vygotsky, 1978, 1981, 1987, 1988; see also, Kozulin & Presseisen, 1995; Lave, 1996; Resnick, 1988; Rogoff, 1996, 1998; Rogoff et al., 1996), this study highlighted the importance of the *role* assumed by the learners in this centrality with others, and the role others, around the learner, assumed.

As identified in the literature review in chapter 2, there are different theories of learning that place the role of the learner in different relationships with their learning, the knowledge and the teacher. As this study has shown, students themselves have a range of conceptualisations of learning, and therefore while teachers may adopt a particular theory of learning and teach accordingly, students may have quite a different theory and learn accordingly. This perhaps explains why earlier research has identified that teachers’ and students’ goals for learning and their interpretation of the tasks differ (Bereiter & Scardamalia, 1989, 1996; Lemos, 1996; Marton & Säljö, 1976), because the learning theory driving teaching practice may differ from the learning theory held by the students involved in the learning process.

Bruner (1996) stated that, “learning, remembering, talking, imagining: all of them are made possible by participating in a culture” (p. xi), and it is therefore pertinent to this study that context is examined in relation to student learning. The results from the present study indicate that the *role* of the learner is dependent on context as well as on the form of assessment. In addition to this, the role of the learner is influenced by his or her conception of learning and self-assessment. For example, when students primarily held a less sophisticated conception of learning, their experiences and roles in learning were limited to replicating the material they were learning. These learners were observed practising a skill until they could master the task, or rote learning until they remembered the facts, and appeared less inclined to utilise opportunities to learn through other roles.

The students in both phases of the present study were engaged in a number of roles during their learning experiences, and it is these roles we can learn from to assist the facilitation of more sophisticated views of learning and self-assessment for all learners.

These included:

- The goal setter
- The self-assessor
- The peer teacher
- The peer assessor
- The collaborator
- The adventurer

### **7.3.1 The goal setter**

The point of learning, as already discussed, impacted on how the learner approached the learning task, but so too did their personal *goal* for learning. As Paley (1999) noted after years of working with young children and their views on learning, there is a “natural tendency of a young child to study, with great concentration, that which interests her at the moment” (p. 64).

In the present study, the goal of learning was most often teacher, rather than learner, driven. It was sometimes made explicit by the teacher, but at other times was implicit in the form of assessment that was used to “measure” the learning. Learners received information either directly through the teacher, or indirectly through the assessments

used in the classroom to suggest what was important to learn, or what the goal of the activity was. However, at other times, learners had inherent aims (such as when trampolining, or learning a speech), which they used as the basis for their goal. Therefore, the level of ownership for the learning assumed by the learners depended on who identified the goal (teacher, parent or student). The role of the learners was therefore influenced by the formulation of the goal. This is integrally related to self-assessment as demonstrated in the present study, because when learners set their own goals they: took more responsibility for their learning; had a better appreciation of what they were trying to achieve; and developed the criteria to identify when they had learned. Some examples include the trampolining, the tepee and the speech observations. These students were less reliant on needing the teacher, parent, a mark or a grade to inform them that they had learned. It also became apparent from the students in the present study, that they were more motivated to learn when they chose their own learning goals.

When a teacher set the learning goals however, some of the control that learners enjoyed was diminished. This effect can be minimised by teachers ensuring that learners clearly understand both the goals and criteria for assessing their learning. It has been recognised that when learners recognise their ability to meet externally set goals they are more likely to be motivated to achieve (Kagan, 1981, Stipek et al., 1992). So while not all students are active in their own goal setting, they need to be encouraged to take some role in the process. As Kagan (1981) has argued, knowing the standard, or being aware of the criterion necessary to measure one's performance against that standard, assists the learner.

Consistent with Boekaert's (1991) claim, this study argues more pressingly, that learners, when identifying the goal and the standard to meet that goal, are more likely to create awareness of learning and motivation for that learning. This is particularly so, when learners feel confident that they can attain it, and value the goal. However, if learners do not value the goal (as shown in the tepee example), there is less likelihood of a commitment to that activity.

The results from the present study, indicated that both the context and the students' conceptions of learning and self-assessment influenced the degree to which they actively set goals. Through the phenomenographic data, the categories of description

outlined indicated that students came to know they had learned in different ways. Some students placed more reliance on the teacher or a grade, while other students took a more active role in the self-assessment process.

While previous research has identified that self-assessment practices contribute positively to student motivation for learning (Broadfoot, 1979; Ralph, 1995), results from this study suggest that this only occurs when the student finds the self-assessment activity meaningful, and have been active in setting the learning goals. In examples within the school setting during the self-assessment of the pie or of the written activity, students were involved in self-assessing their work because it was part of the teacher's requirements. In these examples, self-assessment was undertaken by the students with little reference to their learning. In contrast, when students had clear learning goals, such as in the trampolining class, self-assessment was closely linked to their learning, and is more consistent with the view that self-assessment is central to learning (Kozulin & Presseisen, 1995).

Students who held more sophisticated conceptions of self-assessment actively set goals to assist their own learning. These students formulated both goals and criteria with which to measure their progress. This had the effect of providing more autonomy and responsibility for their learning, as noted by the students in both the phenomenographic and ethnographic phases. Students were less reliant on teachers to identify that they had learned, and were more confident in attempts to learn new skills because they identified what these skills were within the framework of the teacher's goals. For example, in the ethnographic phase, the student who attempted the difficult flip on the trampoline knew what she was trying to achieve based on the teacher's instructions. However, her personal learning goals specific to this activity were related to where she was on the continuum of learning the skills associated with the flip. The student was not reliant on the teacher to tell her what part of the manoeuvre she could or could not do, because the student had ascertained this already, and was intentionally able to focus on specific aspects of the flip.

The goal setter was an effective role because it clarified the learning outcomes for the learner, and provided clear learning goals. This ultimately assists with the drive, commitment and motivation learners bring to an activity. As demonstrated in an earlier study, by identifying learning goals, students are able to focus on an activity in an

intentional manner and develop useful learning strategies to aid successful completion of the task (Anthony, 1994).

### **7.3.2 The self-assessor**

The phenomenographic results in Phase One of the present study illustrated the variation in the way students self-assessed their learning. Those students who held a more sophisticated conception of self-assessment, indicated they were more actively involved in the self-assessment process, and placed greater reliance on establishing their own goals and criteria for assessing their learning, and less emphasis on teachers' marks or grades. Following from this, in the ethnographic phase it was observed how some students took on an active role of self-assessor.

The influence of context was highlighted in the ethnographic phase, where students self-assessed to satisfy teacher expectations (during class activities) while others self-assessed in relation to their own learning goals (during judo, abseiling, and while making a tepee). While self-assessment was a practice used by teachers in schools, students did not necessarily take on a "self-assessor" role while completing the prescribed self-assessment sheets. In fact, many of the examples within art, mathematics, social studies and food and nutrition showed that students took compliant, passive and submissive roles that were not conducive to reliable or valid self-assessments.

The self-assessment activities that took place in the classroom were often summative, as opposed to student-initiated self-assessment activities, which were largely formative. When students self-assessed their work within a formative assessment environment, their relationship changed with their peers and their teacher. For example, self-assessing as part of a formative assessment, tended to involve a close working alliance with teachers and peers. This relationship between teacher and learner is a key characteristic that differentiates formative and summative assessment (Black, 1993), and the shift in relationship becomes a factor when self-assessment is incorporated into the curriculum (Barnes, 1997; Eaton & Pougiales, 1993; van Kraayenoord & Paris, 1997).

In the present study, self-assessment in the school situation was structured in such a way that it did not have many formative elements. For example, in the school setting, the self-assessment forms were teacher-developed, used tick boxes or quantitative Lickert scale format, and were used often at the end of an activity or module. The effect was that learners tended to take a more pragmatic view of self-assessment and therefore assumed particular roles. The students completed these self-assessments as another task with a motive of “pleasing the teacher”. Gipps (1994) argued that this would not increase the motivation for the learner unless the teacher uses the self-assessment in a positive or constructive way. In the present study, where the teachers did not use the learners’ self-assessments, or where these self-assessments were prescribed and constructed by the teachers, the learners quickly adapted to a process of completing the forms without thought or without linking it to their actual learning. It is somewhat disconcerting that there were no identified occasions in the school where teachers actively used student self-assessment. In out-of-school contexts, there was also minimal use of student self-assessment, although coaches were observed asking students how they felt they performed. At this level, self-assessments were used by the coaches to improve student performance. For example, while attempting to abseil, a student constantly noted her fear and inability to undertake the activity, so the coach was able to adjust his teaching and support for her.

When students assigned themselves grades as a result of self-assessment in the classroom, they tended to give themselves average marks (as demonstrated in the phenomenographic phase), and were clearly influenced by their perceptions of the type of responses teachers expected on the self-assessment forms (as evident in the ethnographic phase during food and nutrition). These were essentially often no more than “self-marking” exercises. The self-assessment activities in the classroom were neither true indicators of what the students believed represented their work, nor were they based on any criteria for determining the outcome of the learning. Given that there are “two key elements in classrooms where students appeared to be highly motivated: formative evaluation and student self-management” (Benson, 2000, p. 30), it is particularly relevant that learners are encouraged to self-assess their learning based on their own or pre-established criteria. The self-assessor is a critical role for the student, but not when so clearly prescribed by the teacher.

Through examining the variation in students' conceptions of self-assessment, a pattern emerged that demonstrated that the more sophisticated and inclusive the conceptions of self-assessment, the more likely students intentionally involved themselves in goal setting to focus on the desired outcome. It also showed that these students reported placing less dependence on teachers to know they had learned, and less reliance on norm-referenced tests. Instead, they used criteria first established by the teacher (self-assessment category D), and later by themselves (self-assessment category E), to determine whether learning had occurred. This evaluation also tended to be something the students thought about or conducted privately, as opposed to public statements on paper about their work.

The self-assessor was an effective role because it enabled students to take responsibility for identifying when learning had occurred and also for identifying steps required for further learning (van Kraayenoord & Paris, 1997). The role of self-assessor is integral to learning because through self-assessment learners are able to facilitate further learning. By self-assessing in a formative way, learners develop reflective thinking skills (Kusnic & Finley, 1993) and can apply more metacognitive strategies (Pramling, 1996a).

### **7.3.3 The peer teacher**

Many students took on a role of sharing their information, skills or expertise with their peers. Even when students believed they had not mastered a particular activity, they were willing to contribute their understanding of the task to assist another. This was apparent in both school and out-of-school settings, although there was a fundamental difference between the two settings. In out-of-school settings, it was usual for an older peer to be informally involved in teaching the younger peer the activity. This primarily occurred while the learners were engaged in an activity where one had more mastery than the other in a particular skill, for example, a throw in judo, a double flip in trampolining, or a dance movement. The interaction and involvement between peers became more of an apprenticeship role. The term apprenticeship is used here because it assists in the emphasis of "the centrality of activity in learning and knowledge and highlights the inherently context-dependent, situated and enculturating nature of learning" (Brown et al., 1989a, p. 39).

In a school setting, the peers were involved in assisting with the learning through teaching others, although it was informal and tended to be peer initiated. When students assumed the role of peer teacher, they took the responsibility seriously and attempted to explain or demonstrate the desired outcome for the other learner. While this had benefits for the peer receiving the advice or explanation as indicated in both the phenomenographic and ethnographic phases of this study, it was likely to be equally beneficial for the peer providing the explanation because, as Brandt (1994) identified, students improve their own understanding while teaching a peer. A similar observation was made by Nuthall (1997) who found that the private talk of students in a classroom setting was frequently related to task requirements and played a critical role in their learning.

Consistent with Vygotsky's (1978, 1981, 1988) theory that learners can be encouraged to a deeper level of understanding when working with more knowledgeable peers, it was evident that such levels of support were critical in both the learning and self-assessment processes. In both the school and out-of-school settings it was observed that there was a range of abilities among students, and it was this diversity that students recognised and used when requesting or providing assistance to their peers. This was particularly evident in community settings where there was a range of ages involved in an activity (e.g., judo, and dancing). It has been shown in a New Zealand study that positive gains can be made in both cognitive learning and the facilitation of social skills (Borg & McDrury, 1996). Therefore the notion of peer teacher is worth pursuing, both for the gains learners can make by teaching, and the gains they can make by learning from the language of their peers. As noted in the phenomenographic phase, the use of peers and siblings to "translate" teacher and parent concepts and language was used frequently and successfully by many students. This was later confirmed as an integral part of learning in the ethnographic phase where learners assisted each other, modelled from each other, and taught each other in a variety of contexts such as mathematics, dancing, abseiling, and speech making.

While working in partnerships, the peer teacher was an effective role because it enabled the learners who were "teaching" or "explaining" to clarify their own understanding. In a sense, the role of the peer teacher required metacognitive skills that enhance learning. In the present study, it was usually friends who chose to assist and work with each

other, which is known to have positive effects on student learning (Berndt & Keefe, 1992; Cullingford, 1997; St. George & Cullen, 1999; Zajac & Hartup, 1997).

#### **7.3.4 The peer assessor**

In contrast to the peer teacher, peer assessors tended to examine their peer's work or activity and offer suggestions in relation to the other learner's work. They did not demonstrate or explain the activity at hand, but rather used the peer's work as a basis for discussion.

While there were semi-formal situations of peer assessment established in the classroom, it was during informal peer assessment where learners assumed the unique role of assessing peer's work in relation to either teacher-initiated or peer-established criteria. What was interesting though, was that while peers assessed each others' work, there were no instances of them asking the peer they were assessing what their goals were or what they were attempting to achieve. Therefore, the assessments occurred within the framework of the peer assessor, rather than the learner. At times this assisted the learner because the peer had a clearer understanding of what the teacher was requesting. During an art session, a particular art technique was carefully explained to a student by a peer, because the peer assessed the work of the student as not following directions with the way he was using the pastels. In this instance, the peer involvement assisted in improving the student's artwork, although the peer did not ask the student what effect he was attempting to achieve with his pastels.

While teachers established occasions when students were asked to assess their peers' work, this was usually less successful than the informal peer assessments. When students were asked to peer assess they used qualities such as friendship, popularity and other social aspects to influence their assessments of their peers. However, the effective peer assessor role was an informal role, where peers actively sought or provided each other with advice or opinions. This is consistent with research carried out with fourth graders in the United States, where Sperling (1993) found that peer input during the assessment process was beneficial for the students because of the type of questions their peers asked on an informal basis. Sperling (1993) stated that "sometimes a student's most probing thinking occurs during an assessment session with a peer" (p. 75).

The peer assessor was an effective role because it assisted the peer who provided the advice with clarity about perceived goals, and it provided the learner with another interpretation of the activity. It also helped the student receiving advice to self-assess, because through sheer necessity, the peer was directing attention and focus, on the performance.

### **7.3.5 The collaborator**

Students found that learning in a community of learners was a means to learn new skills and activities, and also to achieve the desired outcomes as established by the teacher. Learners naturally collaborated in their learning in both school and out-of-school settings, although there were exceptions. For example, the student who refused to show his peers how to make rounded corners on a pencil box did not collaborate.

Whether students held a less sophisticated view of learning or a more inclusive view of learning, they tended to work with others in their learning activities to achieve their goals. There was evidence of this through activities in the classroom such as mathematics and writing stories, as well as out-of-school contexts such as judo, abseiling and dancing. Students in the present study who held a fear for a new activity, such as abseiling or attempting a mathematics problem, utilised their peers' experiences and support when undertaking the new task. Students who collaborated successfully, were acting neither as peer assessors nor peer teachers. They encouraged, cajoled and offered advice to support their friends. Through collaborating, more students became active participants in the learning process. Vygotsky (1978) identified the centrality of others in his theory of the ZPD, and noted specifically that learners develop "in collaboration with more capable peers" (p. 86). In this study, collaborating with others seemed a natural process for the learners, although this was undertaken in different ways.

There were times when students collaborated in establishing the goals of the learning, or the intended focus of the task. For example, during a mathematics lesson one student asked "what are we meant to be doing?" and others in her group explained the intent of the activity. In school situations such as a mathematics class, the students supported each other in attempting to problem-solve solutions, irrespective of whether this was the teacher's intention. These students collaborated in other activities such as sports and

speech making, food and nutrition, art and any activity where peers were involved in the general setting.

In earlier studies, that examined collaboration amongst learners, it has been established that the communities in which learners participate (both at home and school) influences their propensity to collaborate (Matusov, Bell, & Rogoff, 1998; Rogoff & Toma, 1997). In the present study, learning contexts that encouraged collaboration with others included judo, dancing and sports because the learners did not participate in these activities alone. These settings also facilitated learners working together collaboratively because, within a team or activity, co-operation rather than competition between learners was encouraged. As learners within these contexts became familiar with collaborating, some attempted to use these strategies in a school setting. On some occasions it was discouraged, for example during individual mathematics work or when taking tests, but at other times collaboration was encouraged, for example, during art or food and nutrition classes.

The collaborator was an effective role because it enabled students to work together on a common learning goal. Collaborative problem solving is an effective learning process as it emphasises the support and skills of others when working together (Matusov et al., 1998). Some students scaffold difficult concepts for their peers through collaboration, and by so doing, work within a framework of a community of learners (Lave, 1996; Matusov et al., 1998).

### **7.3.6 The adventurer**

Whether it was through a practical activity, such as abseiling, judo or trampolining, or a conceptual learning activity, such as solving a mathematical problem, this role was marked by the notion of risk taking and moving beyond the safe boundaries of what the child could do. As Rogoff (1990) identified “learning involves functioning at the edge of one’s competence on the border of incompetence” (p. 202). Therefore, the learner as adventurer was prepared to take a few risks in order to learn, that is, she or he was prepared to fail, or fall a few times, on the way to learning a new skill. In particular, those learners with the most sophisticated conception of learning, where learning was identified as understanding (learning category D) or different ways of knowing (learning category E), and where students used criteria to evaluate

their learning (self-assessment category D), set their own learning goals (self-assessment category E) or evaluated the learning content (self-assessment category F), were the students most likely to see learning as an adventure.

The role of adventurer was apparent in both phases, either by students talking of their adventures on their mountain bikes or through the thrill of attempting new activities. In the ethnographic phase, students were observed attempting new skills such as abseiling, which resulted in excitement and adrenaline, but the role of adventurer was equally evident in the school setting where a child attempted to take part in a ball game with limited success.

The ability to take risks in learning is an important factor in approaching and undertaking new tasks. The challenges faced by learners on a daily basis required sophisticated self-assessment skills to identify the requirements of the task and the skills they bring to the task. This aspect of learning is a critical role for the learner and one that contributes to the overall context for successful learning.

Risk taking in learning can be attributed to more sophisticated conceptions of learning and self-assessment. In out-of-school contexts, students were more active in goal setting, and discussed using pre-established or own identified criteria to ascertain whether learning had occurred. In these instances, rather than attempting to deliver what might be rewarded, these students attempted to perform activities based on their own goals and their own expectations for themselves. Such students were more prepared to take risks in their learning in their endeavour to achieve their goal, which, as identified in another study, even where students provide incorrect answers through risk taking, is an important factor in further learning (Alton-Lee & Nuthall, 1992).

There was some evidence in the present study to suggest that the role of the adventurer was stifled or discouraged by school assessment systems that encouraged the “right” answer or the one way of thinking. Students quickly identified that teachers already had an answer in mind when asking a question, which resulted in the game of determining what the teacher was thinking. Examples include the incidents observed during a self-assessment activity in the food and nutrition class where a student changed his self-assessment of the flavour of his pie from “soil” to “lingering” when considering what would happen to it, and where another student told his peer that he should not write

“good, good, good, good” because the teacher would tell them off for “not thinking”. The assessment of the tepee, and the art produced in the art class were other examples whether students were encouraged to follow the lead rather than attempting new or creative ways of approaching and solving the task.

So what happens when students are not adventurous in their learning? For a start, they come to rely on identifying their learning through comparison with peers and through examining individual differences. In order to encourage more reflective learners it is important that the focus move towards individual learning rather than individual differences (Broadfoot, 1992), and to move away from encouraging speed and the one correct answer (Donaldson, 1978). It has long been established that learners often feel a social pressure to “get things right” in schools (Holt, 1969), and this has been documented in the area of mathematics (Brown, 1996). As Ginsburg, Jacobs, and Lopez (1993) have observed in the context of mathematics, “teaching students to get the right answer in the shortest possible time with the least possible amount of thinking is no longer a useful goal” (p. 238).

The adventurer was an effective role because it enabled the student to take risks in learning. This is particularly important, as attempts are being made to move away from the notion of school as an institution that provides rote-like and intellectually limiting instruction (Moll & Whitmore, 1993). In order to facilitate interesting learning experiences that help learners see learning as more than a transmission of information (Berry & Sahlberg, 1996; Bruner 1973), students need to be actively encouraged to be adventurous in their learning.

#### **7.4 The influence of context**

The dialectical relation between the individual and the social group drove Vygotsky’s theory on learning and development. Such a relationship was evident within the present study where learners were as influenced by the environment, as they influenced their environment. The critical relationship between context and the learner is also evident in the work of many educators who take a sociocultural approach to their educational research and theory (e.g., Filer & Pollard, 1996; Lave, 1996; Resnick, 1988; Rogoff, 1996, 1998; Rogoff et al., 1996; Pollard, 1997). As

Gipps (1994) identified, “context has a crucial role in both learning and assessment” (p. 166).

Factors that contributed to the different ways in which learners approached the learning or self-assessment activity were their conceptions of learning and self-assessment, and the contexts within which that learning occurred. In the classroom, for example, the present study indicated how the teacher created atmosphere in the classroom through “sayings” placed strategically on the board and through songs and drama. Gordon (1966) believed that subtle messages about the context for learning and behaviour are communicated to the learner through these sayings. Gordon (1966) stated that:

the classroom presents to the pupil a body of information regarding expectations for learning and behaviour. These are communicated to him [sic] not only through the physical arrangement of space but also through the nature and types of displays on bulletin boards in the room (p. 90).

Both phases of the research identified that some learners placed greater value on teacher feedback while self-assessing their work, while others placed more value on their own beliefs about their work. In particular, students who held less sophisticated conceptions of learning and self-assessment were more likely to require the support of teachers while self-assessing their work. These students were also inclined to talk about self-assessment in relation to presentation and appearance of “work” rather than in relation to their performance or learning associated with that task. They were more likely to focus on the discrete assigned learning tasks, rather than the “bigger picture”. The students’ conception of learning and self-assessment impacted on how they perceived the learning task, and therefore how they approached the task. For teachers to facilitate further learning for these students, the focus needs to be on changing learners’ conceptions *rather* than necessarily changing the activity.

It is clear that context makes a difference to the way students approach a learning task. As the present study identifies, learners’ conceptions of self-assessment and learning are influenced by context, but the context is also dependent on how learners perceive it. The context is in part, made up of the learners’ perceptions of the activity and cultural components of that activity. Therefore, the activity, or the task itself (whether it is a learning or self-assessment task), is dependent on both student

conceptions of learning, and the context in which it occurs. This highlights the significance of studying learning in both school and out-of-school settings.

This is consistent with earlier research, where context has been shown to make a difference in students' approaches to, and outcomes of, learning (Lave, Murtaugh, & de la Rocha, 1984; Säljö & Wyndhamn, 1993). For example, Boaler (1993) demonstrated that performances in mathematics were inconsistent across school and "everyday" settings. However, Prosser (1994a) posed the problem of what extent the role of context plays in developing appropriate conceptions. He believed that a major issue for educational research is based on the question "how do contexts, and perceptions of contexts, in which students and teachers adopt more appropriate conceptions of, and approaches to, learning and teaching, differ from those in which they do not?" (p. 40). Basically, Prosser is seeking an answer with regards to the contextual significance of learning as well as the influence of teacher and student conceptions. Another way to pose the problem is through Rogoff's work, where she focuses on the *activity* as a point of analysis that takes place within the context and between the learner, others, and the activity (Rogoff, 1995, 1998; Rogoff et al., 1995; Rogoff et al., 1996).

## **7.5 Conclusions of the study**

The use of Rogoff's (1995, 1996) three planes of analysis provided a useful vehicle in the present study to investigate the dialogical relationship between an activity and the interaction with others in the learning and self-assessment processes. By examining an activity through the community plane, it was possible to determine how cultural expectations varied across contexts. The community plane demonstrated that students became familiar with different ways of learning and self-assessing. The interpersonal plane highlighted the role that "others" play in the learning and self-assessment processes, and showed that self-assessment is not just a solitary activity. Through examining the learner through the personal plane of analysis, it was possible to identify how the learner approached learning and self-assessment and ultimately changed as a result of working within the context of the activity.

Exploring students' conceptions of learning and self-assessment, and examining them in the variety of contexts in which they occur, highlighted the role of the student in the

activity. Students assume a number of roles across different learning settings, according to each context. An examination of students learning in out-of-school contexts clearly showed how cultural contexts provide learners with a range of cues, expectations and experiences which affect how they approach learning and self-assessment. Learners in out-of-school contexts generally use peers and expert models to assist with self-assessment of their own performance, or to assist with the vision and goal setting of future performances.

The way students perceive a task, and their role within the task, impacts on both their motivation for learning and their aims for learning. A closer link between the learner's goals for *learning* and the teacher's goals for *learning outcomes* needs to be established in order for the learner to be fully supported during the learning and self-assessment process. The teacher also needs to establish transparent criteria for assessing those goals, and these criteria need to be clearly understood by the students. Mau (1995) used the metaphor of archery to identify the link between establishing clear goals and assessing them.

Archers are better able to shoot an arrow and hit a bull's eye when the target is clearly seen and within range. Similarly, students are better able to hit an achievement target when they are given a clear vision of what is assessed and the methods of assessment that reflect that vision. (Mau, 1995, p. 77)

Mau's (1995) example is related to a teacher establishing clear goals for, and with, the learner. However, the students in the present study who were active in self-assessment, created their own vision and assessment criteria for achievement.

Students are more likely to perceive assessment in a positive way when they have a sense of vision. Peddie (1992) claimed that "the clearer learners are about what is expected, and the more encouragement they receive to reach their goals, the less any assessment programme will be seen as threatening or negative" (p. 6). This must of course happen, with the learner's identified goals in mind, not necessarily with pre-established outcomes of learning. Learners are capable of setting goals when activities have meaning and purpose, and whether in a school or out-of-school setting, a supportive learning environment that provides clear vision for future learning creates an atmosphere of trust where students can reflect on, and take risks in their learning.

The notion of reflection and self-assessment is an activity that both teachers and learners need to engage in, within their community of learning. As Prosser (1994a) explained, teachers need to focus on issues of reflection and self-assessment.

My belief is that problems of teaching and learning are not likely to be solved by attempting to prescribe how teachers and learners should approach their teaching and learning, but by developing techniques and ideas which will help teachers and learners critically reflect upon their present teaching and learning practices (Prosser, 1994a, p. 39).

Teacher-learner interactions and the quest for shared meaning both by teacher and learner, is critical in this process (Mead, 1934; Pollard, 1996). Teachers need to understand and appreciate that learning is about developing students' awareness of their learning through reflection (Pramling, 1995; Robson, 1993). An understanding of the student's perspective (Ramsden, 1988), therefore, is a useful starting point to facilitate this reflection. This can be initiated by involving learners actively in the learning process and moving away from the "one-right-answer" expectation. Marton and Ramsden (1988) believed the improvement of learning comes about when the goals of learning and learning itself, are seen through the eyes of the learner. This study contributes to understanding the diverse nature of learning through the learner's view.

The following chapter will explore the implications these findings have for teachers, learners and policy. It is clear that the more sophisticated the conceptions of learning and self-assessment, the more intentional the learner, and the more the learner is able to take an active role in the learning process. In the following chapter, recommendations are made to facilitate the development of more sophisticated conceptions of student learning and self-assessment.

## Chapter 8

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### Implications for Teachers, Learners and Policy

*It is now Deb's turn to abseil down the cliff. She has on all the equipment, ropes and safety harness. She is at the top of the cliff receiving instructions from the instructor. She was told by the instructor to put her hair (which is in a long ponytail) down her T shirt. Deb seems terrified. The instructor said to her, "Just remember that nothing can happen to you". Deb started, then said, "I can't do that". She got her foot on one ledge and was told by the instructor to position her other foot. Again she said, "I can't do that". When she got down the cliff, she was more relaxed and seemed pleased to have conquered it. I ask her how she found it and she said, "It was bloody scary". (11.11.97/28:3)*

The day Deb learned to abseil, she conquered a fear and became part of a community of learners who can say, "I have abseilled. I know what it feels like". While not all learning is "scary", or necessarily exciting or thrilling for the learner, it is about moving from a state of knowing *about* something, to *experiencing* it, that is, experiencing the unknown. In Deb's case, she went through a series of stages from being scared to being thrilled. Her instructor was supportive and placed belief in Deb that she could and would learn to abseil that day. This example is illustrative of challenging students in a supportive learning environment. While the setting is abseiling, the principle equally applies to all curriculum areas and is recognised by the New Zealand Ministry of Education in the discussion paper, *Legislation for Learning*: "excellence in education comes from challenging and extending students" (Ministry of Education, 1999, p. 10). It is ironic then, that teachers themselves, in their assessment practices with students, feel the pressure to conform to assessment procedures that, as a result of ERO reviews, stifle their creativity and associated calculated risks in developing and extending their teaching and assessment practices (Hill, 1999; Lovegrove, 1997; Thrupp & Smith, 1999).

This chapter discusses how the results of this study can facilitate further progress in student learning and self-assessment, first by examining the implications for teachers in terms of teaching and assessment practices, and second, by examining the implications for learners. The implications of these results for educational policy is also considered.

While this study has not focussed on how teachers teach, it examines carefully the way students think about learning and self-assessment, and how students adopt multiple

roles in their learning according to context, setting and their conceptions of learning and self-assessment. Teachers need to be aware that diversity in student learning is not necessarily about different learning styles, or different abilities, but rather about different ways learners think about and approach the learning task. It is also critical that teachers are aware of the impact of their assessment practices on student learning and on students' conceptions of learning and self-assessment.

## **8.1 Implications for teachers**

Lave (1996) has argued that research into learning invariably turns to research into teaching practices, and that this “disastrous shortcut equates learning with teaching” (Lave, 1996, p. 158). This results in learners being lost in discussions about teaching and instruction (a point also noted by Marton & Ramsden, 1988). However, Lave does note that improvements in teaching practice can be made through examining issues of student learning, using both learners and teachers as subjects. Through identifying what learning means to students in the present study, it is possible to focus on some implications for teachers, including issues pertinent to curriculum, organisation, teaching and assessment. Teachers themselves are learners. They should feel the freedom to learn more about their students through allowing them to discuss what learning means. This may mean some changes to assessment practices and teaching strategies. As Lovegrove (1997) urged, “if we [teachers] can be allowed to make a few more mistakes, we might make a few more discoveries” (p. 3).

Through identifying the students' conceptions of learning and self-assessment, and identifying the multiple contexts of learning that take place, we are better able to understand children as learners. This knowledge can be used to facilitate teaching in the classroom. For example, from a phenomenographic theory of learning, Ramsden (1988) stated, teachers “must learn to see teaching as a process of changing student conceptions” (p. 21). This requires teachers to develop classrooms where students are confronted with unique situations, or where there is diversity of ideas (Ramsden, 1988). In classrooms where teachers can talk with learners and “problematise in a child's world” (Pramling, 1995, p. 12), the students will become more aware of their own learning.

Furthermore, Dahl (1995) argued that educators need to “pay attention to what children value as learners and consider children’s voices if we are to genuinely support children’s learning” (p. 129). Encouraging teachers to develop strategies that involve learners in decision making, goal setting and self-assessment would facilitate general student learning and develop students’ conceptions of learning and self-assessment. Recent work on developing the role of empathy in teaching and learning is relevant because by taking an empathic approach to teaching, teachers need to understand learning from the learners’ viewpoints. An empathic model of teaching and learning is inherently person centred with the intention to create and facilitate meaningful learning environments (Arnold, 1998).

If the teacher’s ultimate aim is to change students’ conceptions (Marton & Booth, 1997), then teachers will need to think about changing the context of their practices. That is, it is not enough to change practice (such as incorporating self-assessment forms), as students will only approach these tasks within the institutional context of the practice (as noted in the ethnographic phase). However, changes in the way practices are introduced, and in the value these practices have for the teacher and learner, will change the context. Prosser (1994a) argued that “changes in context can result in students (and I suspect teachers) adopting different conceptions and approaches” (p. 40). These changes will only occur in a school environment that supports new initiatives and changing practices, and where teachers are convinced that the learner’s “voice” is worthwhile and empowering (Lincoln, 1995).

Johnston and Nicholls (1995) believed that schools need to create democratic conditions within each classroom if students’ voices are to be encouraged. Simple changes such as establishing rules for listening to multiple views and respecting difference and diversity can be developed by the teacher. This supports a rich learning context where a range of ideas and solutions are explored taking into account student ethnic culture and the more general student culture of the classroom. The teacher as a listener, and encouraging students to listen are a keys to such a classroom (Johnston & Nicholls, 1995; Pollard, 1997). As Ramsden (1988) pointed out, it is rare for students to have *no* knowledge or *no* strategy when working with problems. It is therefore a case of developing and using this prior knowledge in such a way that students’ conceptualisation of problems change, and of teachers facilitating students’ understanding, rather than recall, of material (Perkins & Blythe, 1994). The greatest

challenge in teaching for understanding has often been identified as giving students opportunities to participate actively in discussion and dialogue, and this takes time (Unger, 1994). While teaching for understanding is recognised as being a problematic factor in some classrooms, it is important that the allocation of time to the learning and teaching process, is given priority because students have diverse learning experiences that they need to express and share.

To facilitate student learning, and to develop more sophisticated conceptions of learning and self-assessment, teachers need to recognise and value the students' culture developed over time and in different settings and contexts (Brown et al., 1989a, 1989b). In listening to and learning from the student voice, through the data examined in the current study, certain aspects were identified that would facilitate this process.

Results from the present study indicate that teachers can facilitate student learning and self-assessment in a number of ways. In particular, they can involve learners and their peers in learning and self-assessment practices by:

- having clear outcomes in mind for the students;
- developing clear and explicit criteria of which the student is aware;
- encouraging learners to develop their own criteria;
- identifying learners' motivation for completing the activity;
- encouraging learners to consider the value of learning;
- providing a vehicle for learners to talk about the *process*, *goals* and *assessment* of learning;
- providing the bigger picture, the rationale, the whole;
- facilitating the use of peers in formal and informal ways;
- allowing peers to explain (teach) certain concepts to the class; and
- themselves taking calculated risks, in teaching and assessment.

However, although it is useful to discuss ways teachers could facilitate student learning and self-assessment through changing their practice, in reality where tradition dictates educational practice, it is not easy to create change. Government policies on assessment and curriculum will not in themselves bring about Government's desired practice, if the institutions within which these policies are to be implemented do not change. As Noble and Smith (1994) claimed "if one expects practitioners to change their practice, and for some this means challenging their current views of themselves and their students, an

environment conducive to such change must be fostered” (p. 132). This environment refers to the school environment, school policies and teacher expectations, and the general administration within the school.

### **8.1.1 Teaching practices**

For New Zealand teachers to facilitate student learning and improvements in the quality of their own teaching programmes there is a need to acknowledge that there are diverse ways in which learners conceptualise learning and assess their own learning. It is important that teachers develop an awareness that students think in a qualitatively different way from teachers (Dall’Alba, 1994b). This is important for two reasons. First, by appreciating learners’ conceptions of learning and self-assessment a starting point can be established in an attempt to bring about change (Dall’Alba, 1994b; Pramling, 1995); and second learners’ perspectives on an activity or an assigned task affect the motivation, intention and goals students bring to the learning (Paley, 1981; Pollard et al., 1994).

In her work with young children, Paley (1981) always attempted to search for the child’s point of view, and would say to them “if you keep trying to explain yourselves I will keep showing you how to think about the problems you need to solve” (p. 223). In her work Paley believed that when talking with children, and getting their point of view, as a teacher she could assess both what they knew and what they did not know (Paley, 1981, 1992, 1999).

Students need support to see the value of their learning at school. This could be done by providing a contextual framework for the discrete skills they are learning. Black (1993) argued that students will improve their learning if they are made aware of the nature and processes of their learning. While it is not always possible in a school setting to provide learners with a full appreciation of the whole in some curriculum areas, such as mathematics, it is helpful to provide mathematical problems within the language of the mathematical community (Boaler, 1993; Brown, 1996). In this way, learners see the wider context and bigger picture. It has also been demonstrated that learners are more successful when they understand the aims and purpose of the learning activities they are presented with in the classroom (Gipps, 1994; Pollard et al., 1994; Stobart & Gipps, 1997; van Kraayenoord & Paris, 1997). Therefore, while it is important to ensure the

criteria for assessment are clear to the students, it is even more important for teachers to ensure that learners understand *why* they are undertaking the task. This means that the teacher also should be cognisant of the learners' understanding of the words used. For example, in the present study, when learners used the work *practice*, or *boring*, they meant different things depending on their conception of learning. For a learner with a less sophisticated view of learning, practice meant remembering facts for later recall, while for a student with a more sophisticated view of learning, practice involved applying the knowledge and skills to a new task. This also changed according to context, so for the same learner practice could mean different things. In the present study, for one learner, practice in trampolining was different from practice in spelling. For those learners with a sophisticated conception of learning, *boring* may mean repetitive arduous tasks undertaken when they already understand a concept, and for others it may mean a difficult task which the learners do not understand. For other students boring is a term used when they do not see or value the point of learning. The implication for the teacher is that it is important to find out the learners' understanding of a task or word as it impacts on the way they approach the task.

The Ministry of Education identified commitment to enhancing learning for students through assessment practices through such documents as *The New Zealand Curriculum Framework* (Ministry of Education, 1993b) and *Assessment: Policy to Practice* (Ministry of Education, 1994). However, while the Ministry of Education promotes assessment in a formative manner, schools have experienced a tension between the Ministry of Education ideals and the expectations of the Education Review Office for summative and quantitative measures of learning. Perhaps this could be alleviated by ERO focusing "more attention on formative assessment" (Hill, 1999, p. 184). Change towards self-assessment in the classroom, while promoted by the Ministry of Education, must come about through teaching practice and the teacher's belief that it will make a difference to student learning. As Eisner (1994) has noted, "schooling and teaching cannot be treated as if they could be remote-controlled from afar. Teachers and school administrators who do not understand or have no commitment to change are unlikely to change" (p. 10).

Teachers who encourage learners to take an active role in the learning and assessment processes will facilitate learning through giving the learner more responsibility. One example is provided by Little and Allan (1988) who designed a system of student-led parent-teacher conferences. These conferences were developed to share information

about student learning with parent and teacher, where the learner participated fully in the meetings. Little and Allan (1988) found it advantageous to move away from traditional parent-teacher conferences and incorporate the learners actively in the conference process. As indicated by the work of Commeyras (1995) “if school is to foster student voice, conditions for democratic talk must be established in the classroom” (p. 98). The inclusion of the student voice into these parent-teacher conferences is one means to achieve this. When students are involved in decision-making processes within the classroom, they are more likely to view school and learning in a positive way and redefine what they think is the point of learning (Commeyras, 1995; Nicholls, 1992; Nicholls & Hazzard, 1993).

The evidence from the phenomenographic and ethnographic phases suggests that peer involvement and collaboration in learning and self-assessment should be encouraged in a variety of ways for a number of reasons. First, students find their learning is facilitated if they understand the language of the teacher, and they find their peers can be used effectively to translate difficult concepts into language they can understand. Second, peers use each other as models to demonstrate what can be achieved, to provide benchmarks for their learning, and also to provide vehicles to problem solve. Third, students offer each other informal networks of support and guidance, which are critical if learners are to be encouraged to take more risks in their learning.

### **8.1.2 Assessment practices**

As indicated in this study, teachers attempted to move beyond developing assessment systems for accountability to assist learning, by introducing authentic measures such as self-assessment. However, such changes were not viewed by students as making any difference to their overall approach to learning because these measures were viewed as summative checklists with little reference to learning. Therefore, students’ perception of assessment or of learning did not change. As Ramsden (1988) has noted, “perhaps the most significant single influence on students’ learning is their perception of assessment” (p. 24). Indeed, research has demonstrated quite clearly that students employ a particular approach to learning (mainly a surface or strategic approach) when attempting to maximise grades (Bereiter & Scardamalia, 1989; Burns et al., 1991; Gipps, 1994; Ramsden, 1988).

This study identified that for students, self-assessment practices along with other assessment practices, focused on the completion and presentation of student work. In order to quantify learning, teachers assessed what was completed (quantity), how it was completed (accuracy), and the speed of completion. This was then identified as “student learning”, yet ironically, while students could complete work accurately, it did not necessarily mean students were learning. As Pollard (1997) argued, “pupil learning should thus not be confused, as it so often is, with mere completion of tasks. Indeed, in the routinized work of many classrooms, children may complete a task ‘correctly’ but have learnt nothing new” (p. 118).

Educators have long held the belief that radical changes to assessment systems in schools will bring about a general reform of educational practices, but this alone will not address the way students experience assessment through pedagogy and curriculum. The *technique* of assessment practices will not make a difference to students’ conceptions of learning and self-assessment if still couched in the institutional mould. While Holloway (2000) argues that “pupil assessment is crucial in bringing about reform” (p. 84), it is more likely that reform will only come about when policy makers, curriculum developers and practitioners make a concerted effort to address wider educational issues, such as the content of the curriculum and the delivery of assessment practices (Soodak & Martin-Kniep, 1994). Noble and Smith (1994) cautioned that the “power of assessment to reform schools must be tempered” (p. 113).

As identified in the present study, it is not the actual assessment strategies used that will make a difference but *how* learners are involved in the process. This was evident in the way self-assessment, as an assessment strategy, was introduced to the classroom setting. As a strategy, it is an effective means to facilitate learning, but not as it was implemented as a summative, teacher-directed and “institutionalised” process.

In the classroom context, the teacher-initiated self-assessment practices identified in this study would be better described as *institutionalised* self-assessment because the teachers, while attempting to introduce authentic assessment measures, do so within the constraints of the institutional context of the school, Ministry of Education assessment policy, and ERO requirements. One reason for this, is that despite the argument that one of the functions of assessment is to facilitate better learning (Black, 1993; Gipps, 1994; Ministry of Education, 1994), teachers have still tended to use assessment as a

tool for accountability rather than for learning (Black, 1993; Bourke & Willis, 1998). In England and Wales, when Standard Assessment Tasks (SAT) were introduced for 7-year-olds (1990) and 14-year-olds (1992), there was an associated negative impact on teaching practice, teachers' morale and student motivation (Pollard et al., 1994). Some teachers became "assessment magpies, collecting and storing performance evidence and information at every possible opportunity but making little use of it to adjust the learning program of individual pupils" (Black, 1993, p. 197). In the United States, a similar phenomenon of fanatical assessment occurred (Noyce, Perda, & Traver, 2000), where teachers assessed student learning vigorously in reaction to a model of "data-driven decision making" (Nichols & Singer, 2000, p. 34).

Holloway (2000) advocates types of assessment such as value-added testing but this will not necessarily improve learning because "the biggest single impediment to improving teaching and learning is the way we evaluate student achievement" (Barr, 2000, p. 21). This study supports the notion that student assessment will be a major player in educational reform *only* if these assessments actively include the learner in the process. This may require a change in teaching and assessment practices such as the introduction of group and peer assessment. Borg and McDrury (1996) encouraged the use of peer and group assessment and believed teachers need to put in the time and energy required to make group assessment successful because "the skills which are being encouraged are valuable for the students throughout their whole life" (p. 6).

Learners' own questions are considered one of the more powerful sources of student learning (Alton-Lee & Nuthall, 1992; Heckman, Confer, & Hakim, 1994; Nuthall, 1997). Commeyras (1995) believed that teacher control of educational practices, particularly in some forms of assessment, inhibits learners asking questions, which in turn stifles the creation of an environment of creative problem solving. This has also been noted by Black (1993) who argued that pupils' questioning is inhibited through the use of forms of summative assessment. As Doverborg and Pramling (1993) observed in their studies with young children, questions are used by children as a form of learning, and it is through working with peers and asking questions that learning occurs at a deeper level (Borg & McDrury, 1996). Interestingly, Alton-Lee and Nuthall (1992) noted that questions and comments from students relevant to the curriculum occur at a "private level" so as not to disturb the classroom rules of not talking in class. The implications of this finding is that teachers are losing valuable teaching moments

because they are not aware of the types of questions learners are asking, and therefore reflecting on in terms of the content. Teachers need to spend more time with their students in reflective dialogue, a technique that has proved successful in learning situations such as road safety intervention (Cullen, 1996, 1998).

The power relationship during the assessment process between student and teacher is another issue raised through the two phases of this study. In particular, those students who held a less sophisticated conception of learning or self-assessment relied on the teacher for feedback on their learning. This was demonstrated first through the phenomenographic phase where students indicated a reliance on teachers for confirmation of learning, and later in the ethnographic phase where students undertook their learning or self-assessment task as a way for the teacher to decide whether they learned. When students maintained a dependency on an outside source (grades, marks, teacher) for providing confirmation of learning, they were less likely to actively set learning goals, to use criteria for assessment or indeed to develop their own criteria to assess their learning. These students are not therefore likely to become independent intentional learners until their view of learning and self-assessment is challenged and changed. This is in part an issue for the teacher because if students continue to conceptualise learning as “that which can be measured and defined through quantitative measures”, they will continue to approach their learning tasks in a surface, superficial manner.

One way to include learners more actively in both the learning and assessment processes is through the use of group assessment (Borg & McDrury, 1996), which also has the effect of increasing student motivation (Crooks, 1988, 1993). Again, as indicated in this study, this will only be effective if learners view it as valuable and fair. Informal peer assessment is a powerful means to facilitate student learning, and the teacher needs to be careful that it is not institutionalised to create another “hoop”. If this happens, as the learners in this study demonstrated with teacher initiated self-assessment, they will approach the peer assessment in a superficial manner.

Educators are increasingly encouraging students to take a more active role in the assessment process and, as Gipps (1994) suggests, to “think rather than tick alternatives or regurgitate facts” (p. 159). One means to do this is through the use of rubrics both in the development of criteria for assessing student work and as a means to assess the

level of accomplishment (Andrade, 2000). Rubrics would facilitate the systematic use of peer and self-assessment because they provide a focus for students when they evaluate their work. As identified in this study, however, the students need to believe the point of learning is more than just meeting the criteria as indicated in the rubrics.

Collaborative assessment within classroom settings would enhance learners' participation in both learning and self-assessment, because both teachers and learners could gauge what learners are capable of with support. In this way, teachers could identify the potential skills within the learners' reach. It is encouraging to cite examples where some learners are being encouraged in the assessment process through the development of their own test questions (Nichols & Singer, 2000), establishing rubrics (Andrade, 2000) or student-led student-teacher conferences (Little & Allan, 1988; Nichols & Singer, 2000). The problem remains that these systems are established by teachers to fit an existing schedule of statewide assessment programmes. Without the indepth research or analysis of how students experience these forms of assessment within the systems, it is difficult to determine how far the changes have really been made.

## **8.2 Implications for learners**

If learning is seen as participation in fluid communities of practice where change is evident in both the community and the participation that takes place (Lave, 1996; Lave & Wenger, 1991), then learners must actively seek change through questioning their own participation in the learning activity. One of the most effective ways to do this is to help students monitor their own learning through the self-assessment of learning goals. Students who are encouraged to self-assess while engaged in a learning activity are also provided with the tools to seek change in their learning, thereby creating opportunities for further learning.

Some of the learning strategies students were using in the present study could be developed further, such as the link between rote learning, memory and thinking. Rather than allowing students to rote learn in a meaningless manner (as was seen by some students in this study), they could be encouraged to use rote learning to assist develop their understanding and thinking about a topic (as seen by other students in this study). As indicated in the present study, some students used recall as a means to develop their

speech rather than to regurgitate facts. This provides an example of the notion that remembering and problem solving are closely linked. In order to problem solve a learner must be able to recall knowledge and information that will *inform* the problem solving process. For Vygotsky, the function between memory and thinking was closely linked, and is particularly relevant in encouraging learners to a more sophisticated conception of learning and self-assessment. He stated that:

Memory in early childhood is one of the central psychological functions upon which all the other functions are built...for the very young child to think means to remember; at no time after very early childhood do we see such a close connection between these two psychological functions. *For the young child, to think means to recall; but for the adolescent, to recall means to think.* Her memory is so 'logicalized' that remembering is reduced to establishing and finding logical relations; recognising consists in discovering that element which the task indicates has to be found (Vygotsky, 1978, p. 50).

In relation to memory performance, Rogoff and Mistry (1990) outlined the importance of identifying a person's goals and social context, and noted that "remembering in everyday life is usually in the service of accomplishing some other goal rather than being itself the end for the activity" (p. 206). This reiterates the point made through this study, that students' goal-setting activities are integral to the learning process, and self-assessment of learning is critical to this end.

Regardless of the institutional systems for assessment practices put into place through Government and school policy, or through individual teacher initiatives, student learning and development will continue within the context of their lives and in interaction with the social milieu of their culture. Educational policies on assessment seem to be an attempt to control the learning *outcomes* of students in an effort to increase learning and ultimately productivity. However, learning cannot be controlled, and unless we begin to understand and address students' conceptions and experiences of learning, new assessment or learning initiatives will not impact greatly on the experiences of the students.

### **8.2.1 Learners in research**

Students involved in both phases of the current research provided a unique opportunity to explore learning and self-assessment from their perspective, and increasingly students' views are being used to explore aspects of learning, schooling and education (Dahl, 1995; Jahnukainen, 2000). Educational research has been acknowledged as

being closely related to teaching (Ramsden, 1988; Rasberry, 1996), and involving students in educational research makes the link between teaching and educational research even more pertinent. Oldfather (1995) argued that, “students can and should participate not only in the construction of their own learning environments but as research partners in examining questions of learning” (p. 131). This has started to occur in educational research, for example, where 10<sup>th</sup> and 11<sup>th</sup> grade students participated in the publication of the results (see Garcia, Kilgore, Rodriguez, & Thomas, 1995, where the students are the first three authors) and where learners were encouraged to be partners in the research process by being trained as interviewers to assist data collection involving other children (Taylor & Smith, 2000). Various methods have been used to incorporate the child’s perspective, for example interviewing (Gollop, 2000; Piaget, 1979; Pramling, 1983, 1996a), ethnographic methods (Carr, 2000; Jones, 1991, Pollard, 1997) and focus group interviews (Kerslake Hendricks, 2000).

Reports from the participants in the present study indicated they enjoyed the experience of talking about learning from their perspective. Kvale (1996) stated that, “just listening to what people have to say for an extended period of time, as well as the quality of the listening, can make an interview a unique experience” (p. 116). In relation to young participants, Ginsburg (1997) has noted these interviews are one of the rare occasions where the adult genuinely seeks the child’s view. Research interviews are different from talking with a child in the day-to-day activities in the classroom. The common element of these approaches should be that there is an attitude of respect from the interviewer to the child. This is an ethical issue because the child being interviewed needs to feel accepted and realise that the primary aim of the interviewer is to understand the child’s viewpoint not to ascertain whether a child’s answers are “right” or “wrong” (Ginsburg, 1997).

When talking with students in both phases of the study, their use of metaphors to describe and explain what they meant was interesting. As with earlier studies, the use of metaphors is a way students use to describe their experiences (Dall’Alba, 1994b; Marton et al., 1993). For example, within the present study one student referred to tape recorders when discussing memorising information, while another used the notion of clouds when discussing knowledge. Dall’Alba (1994b) also noted that students in one of her studies “used rich metaphors to capture their understanding of what learning is”

(p. 79). This suggests that teachers could capitalise on students' use of metaphors to clarify ideas and explain complex issues.

The students participating in the ethnographic phase of the study provided an opportunity to explore issues related to student learning and self-assessment in a variety of settings. The seven students came to know the researcher and provided unique insights into the way they engaged in different learning activities. Often they would initiate conversation when involved in an activity and explain to the researcher what they were attempting to achieve. Similar to a study undertaken by Eisner, where research assistants shadowed a high school student for a 2-week period, these students "provided both guidance and a passport to what was going on" (Eisner, 1991, p. 194).

Teachers could involve learners in research within their own classroom by listening more to the student voice. This has the benefits for the learner as well as the teacher because it has been acknowledged that teachers find their own voice through listening to student voices (Heshusius, 1995; Lincoln, 1995; Smith, 1996). However, through the encouragement of student voice, teachers must recognise the implications of increasing student questions about the very nature of learning, which will ultimately affect the status quo in the classroom (O'Loughlin, 1995).

### **8.2.2 Learning and self-assessment as processes for student liberation**

Learning provides a freedom to explore the world, which when initiated by the learner is a liberating experience. Within the present study, students learned within a variety of contexts and held different conceptions of learning and self-assessment. It was through these different contexts that students could explore the different meanings of learning and were exposed to different processes to determine how they knew they had learned. Through changing their participation in a variety of learning communities, these students were provided with a greater range of tools to set goals, develop learning criteria and assess their learning in relation to the goals and criteria. Matusov et al. (1998) argued that "people develop by participating in diverse and overlapping complex cultural systems with associated practices and philosophies" (p. 33).

Students will need to face increasing developments in technology, which will result in fast-paced change both in schools and the workplace, and in order to take an active part

of the changing society they must be aware of their own learning within it. The new millennium brings a challenging new educational and social climate to young learners. Palincsar (1989) argued that learning is a process that assists learners take control of the school tasks as well as events in their lives. She believed that as learners become part of a community of learners and are comfortable with their roles, “they become more comfortably situated, [and] the learners can draw relationships between the demands of specific new tasks and the challenge for them as individual learners” (p. 6). Therefore, as educators, we need to develop strategies to assist these learners take on a number of roles and to feel comfortable with learning in multiple contexts. One means to achieve this is to develop the learner’s awareness of learning so they can adapt to changing learning environments and tasks.

To adapt to change, and indeed to become agents of change, we need to develop learners who have problem-solving abilities, thinking skills and a willingness to accept change (Broadfoot, 1992). Kusnic and Finley (1993) have observed that self-assessment is a process that helps make learning real for students, and that “all learning is about change: about changing the way we see things and changing the skills we have to new and different ones” (p. 11). One means to facilitate this is through assisting learners to develop reflective learning and self-assessment skills in order to be proactive rather than reactive to change. By being able to set goals, develop criteria to evaluate progress and then critically assess those goals, students can become more independent and self-sufficient learners.

While Pramling (1988) called for a move to develop young children’s awareness of learning through changing teaching practices, this study argues that learners can be encouraged to become aware of their learning through their own goal setting and through striving for a variety of learning experiences and settings. Through providing explicit criteria for self-assessment, teachers can develop critical and reflective learners who will eventually be able to develop their own criteria for their own standards. Self-assessment or self-evaluation is neither a form of learning nor assessment. It is the link between the two processes and is an integral aspect of both.

Learners need to become more reflective in their self-assessment and learning. As Cullen (1992) has indicated in her study with early childhood learners and teachers, teachers need to encourage “independent self-regulatory approaches to learning” (p.

120) to help learners develop the skills to make decisions about their own learning (Cullen, 1992, 1998). Self-assessment practices can then become liberating for the students, in that they place less reliance on the teacher or others about their goal setting and evaluation of progress. While an external form of evaluation is always going to be necessary within a school setting, self-assessment is a vehicle that allows the learner to become less dependent on this external source.

Consistent with the work of Eaton and Pougiales (1993), this study argues that students who can reflect on their learning are in a stronger position to become liberated self-empowered learners.

### **8.2.3 The chameleonic learner**

The term chameleonic learner is used in this thesis as a metaphor to describe the way learners were observed in this study adapting to the multiple contexts and settings in which they learned. The learners assumed a number of roles as described above and these roles contributed to the ever-changing learner. As the students used metaphors freely when discussing learning, it seems appropriate that a metaphor is used in turn to describe the way students learned to adapt and change according to the learning context.

Chameleons use their ability to change colour both to adapt to changing environments, and to communicate states such as anger, fear, calm and distress. A green chameleon is peaceful, calm and serene, whereas a yellow chameleon is surrendering. It takes baby chameleons a year to learn the language of colours and to read the messages portrayed by these colours through interacting with more mature chameleons (Darling, 1997). Children also learn the language of their culture, and learn to adapt to changing environments. Like chameleons, students enter a number of different learning settings. As noted in chapter 6, one single setting, such as the school hall, came to mean different things to the students depending on the *context* of the learning activity. The students adapted their behaviours by adhering to the cultural expectations of each context. As indicated in earlier studies, learners operate in a number of systems and need to become flexible in adapting to the expectations and culture inherent in each system (Boaler, 1993; Rogoff & Toma, 1997).

A similar finding was found in the ethnographic work undertaken by Dahl (1995) with first-grade learners. In her work, she remained in the school setting but observed learners in out-of-class settings that were different from the structured class settings. An example of such a setting was a remedial reading class. The conclusion drawn by Dahl was that learners changed their behaviour, learning patterns and attitudes to learning according to the different learning contexts and settings.

It was evident in the present study that as part of this general context, assessment also portrayed inherent messages to the learner. Assessment practices in learning situations relayed information to the students about what was worthy of their time and energy. These practices communicated inherent cultural values about learning and about the context of the learning situation. However, students also identified with what was important to them, and this combination created a context for their focus.

It is apparent that different contexts for learning are important for learners to develop a sense of their own learning. The activities undertaken in different contexts and with different communities enable the individual to develop and learn. The chameleonic learner is a learner who can successfully adapt to these different contexts, multiple settings and variety of teaching styles. As Rogoff, Matusov, and White (1996) stated, “different instructional models involve different relations of learners to the information and its uses in sociocultural activities” (p. 390).

Both learning and assessment takes place in a social milieu of communities of practice, where adults and peers play an integral role in the context of student learning. Gardner and Sternberg (1994) referred to the notion of “novelty”, to the idea that people are continually exposed to novel, new and challenging situations that require some response or interaction from the individual. They believed that the type of response to these novel situations is linked to intellectual ability. However, it could equally be argued that the type of response to these novel situations is dependent on the individual’s ability to adapt to the different environment (i.e., using the chameleon metaphor to change colour) in response to the context they face. This is consistent with studies where contextual features make a significant difference to the performance of learners (Ceci & Roazzi, 1994; Lave, Murtaugh, & de la Rocha 1984; Rogoff, 1984). These studies demonstrated that differences in performance cannot be attributable to *intelligence* because the same students were involved in the activities, but performed

differently within a variety of settings, or as Gardner and Boix-Mansilla (1994) point out, even across different disciplines, students need to adapt to different styles and approaches to problem solving.

In a similar way, students within the present study showed that context made a difference in how they conceptualised self-learning and assessment. The way they viewed learning, or self-assessment, contributed to the way they took part in the community of practice.

The zone of proximal development and the social nature of learning as described through Vygotsky's concept of cultural development highlight the importance of *others* in the learning process (Vygotsky, 1981, 1987, 1988). However, while this study acknowledges that student learning is mediated in all settings by where and with whom the learning is situated, it is argued that the essential element in successful learning is the learner's *awareness* of his or her response to the contextual setting.

One interesting aspect of chameleons, is their ability to swivel their eyes in opposite directions. Their eyes provide both a 360 degree view and three-dimensional vision, and each eye moves independently from the other. Therefore, they simultaneously receive two different images of their world. There is an old saying from the Malagasy people of Madagascar, that *Wise men are like the chameleon: They keep one eye on the past and one eye on the future* (Darling, 1997). Perhaps, we could equally say, that wise students are like chameleons: They keep one eye on the activity and one eye on themselves. As with chameleons, the ability to change colours according to context, while retaining the sense of self, is critical to the learners' preservation.

### **8.3 Implications for policy**

Teachers generally used self-assessment exercises as indicated in the Ministry of Education *Assessment: Policy to Practice* document. In this document, while one of the aims of self-assessment is identified as being to *develop* students' ability in setting, evaluating and achieving realistic goals, teachers are also subtly encouraged to take a prescriptive and static approach to self-assessment. In the MoE document, prescribed forms are provided as examples teachers may use in the classroom with their students. These forms include a 6-point scale from "rarely" to "almost always" alongside a

number of statements about “work habits” and “relationship with others” for students to indicate where they stand on the continuum. There is also a form that provides space for learners to note their contributions to their class and to write their goals for the next six weeks.

Within this study, however, it became evident that students manipulate self-assessment forms to conform to peer expectations or to satisfy teacher expectations. For example, some students made attempts to “please the teacher” by including interesting words to describe their performance rather than using repetitive descriptive words such as “good”. As indicated by one student, the use of “good, good, good” would suggest to the teacher that the student was “not thinking” about his self-assessment. Other students manipulated their forms in attempts to please their peers. The results from this study cited an example where a student in a food and nutrition class, changed his adjective of his pie’s flavour from “soil” to “lingering”, and the presentation of it from “bad” to a “good effort”, after he was asked what happened to these exercises. The fact that the teacher had not been involved in “assessing” the quality, presentation or flavour of the pie, but read only the student’s interpretation of the self-assessment suggests that the teacher did not place any great value on the self-assessment exercise.

Ironically, while teachers in this study attempted to incorporate “authentic” assessment practices, such as self-assessment, they did so in an “institutionalised” fashion. This had the unintended effect of disassociating the student from connecting their self-assessment to future learning. Given that both teachers and students in this study use self-assessment exercises without connecting these to further learning, it may be appropriate that the MoE document be revised to look more closely at the aims of self-assessment for teachers, learners and how these are *connected* to learning. As noted in this study, students do not necessarily use these exercises consciously to reflect on their work, but often adhere to peer or teacher expectations of how they should describe their performance.

In contrast to the school context, this study showed that learning in out-of-school contexts is facilitated through student involvement in goal setting, establishing and identifying explicit criteria for assessment, and through assessment practices that have meaning for the student. This is a process usually undertaken at a personal level, often

with “expert” assistance in goal setting, and is not necessarily recorded for public display.

Within the classroom setting, teachers adopted self-assessment exercises as part of the MoE drive for *Assessment for Better Learning* and therefore teachers in this study were adopting endorsed and perceived useful assessment practices. The fact that these exercises did not necessarily facilitate student learning was not the teachers’ fault. Indeed, teachers in this study used similar forms as indicated in the MoE documents, so they were making attempts to incorporate authentic assessment strategies. It is possible that teachers are caught up in the system of incorporating perceived “effective practice” yet are not facilitating student learning. As indicated in the literature review, there still remains in New Zealand, as in other countries, the tension between assessment for accountability purposes and assessment for better learning. If the Ministry of Education (1993b) remains true to the spirit that “the primary purpose of school-based assessment is to improve students’ learning and the quality of learning programmes” (p. 24), then self-assessment practices need to be re-examined. The tension experienced by teachers trialling qualitative self-assessment practices to improve student learning, while also feeling compelled to use quantitative assessment practices to appease ERO (Bourke, Poskitt, & McAlpine, 1996; Bourke & Willis, 1998), needs to be addressed. As Thrupp and Smith (1999) argued, “teachers appear to have begun to internalise a new set of values and practices related to ERO’s review requirements” (p. 195).

The way self-assessment is introduced and placed in an “assessment” document institutionalises this activity as an “assessment” activity. However, students in this study who initiated their own self-assessment, their own learning goals, and their own criteria for evaluating these goals, made little distinction between the learning and assessment aspect of self-assessment. This association between learning and self-assessment requires a greater focus in the MoE curriculum and assessment documents. As indicated in this study, there was little evidence to suggest that self-assessment, in the form that was being used in the school, was valued by either teachers or students.

## 8.4 Recommendations

As identified in the preceding three sections, the present study identified a number of areas that could facilitate further learning. The implications for teachers, learners and policy were discussed and, in summary, are that:

1. Students should be actively supported to set goals in learning activities, and be assisted to identify criteria *before* the learning activity so that self-assessment can become intentional.
2. Teachers need to make criteria for assessment explicit and ensure learners understand them. Wherever possible, learners should take an active role in determining the criteria.
3. Teachers and parents should encourage out-of-school learning experiences, but these should not be compulsory activities for learners.
4. Opportunities for peers to be involved in the learning and self-assessment processes through seeking their experiences and understanding of the activity should be facilitated by teachers and parents.
5. Learners should be continually exposed to expert models to help them develop personal vision and purpose.
6. Teachers, parents and researchers alike, need to listen to the learners' points of view.
7. The teacher should identify the learners' motivation to a task when assessing their work (i.e., What did the learner want to get out of this activity? What value did the learner place on this activity?).
8. The link between learning, assessment and self-assessment needs to be more explicit in MoE assessment and curriculum documents, and teachers should be discouraged from using prescribed self-assessment forms.

### 8.4.1 Further research

It has been useful, and for the researcher personally enlightening, to explore years 7 and 8 students' conceptions of learning and self-assessment and examine these in relation to each other, and through a number of contexts. This provided a basis to identify the diverse ways learners experience learning and self-assessment, and to explore the role

context plays in determining how learners approach either a learning or self-assessment activity.

It would be interesting to extend this study, and explore years 7 and 8 students' conceptions of learning and self-assessment in low decile schools, and across different ethnic groups. However, any research undertaken with specific ethnic groups, such as with a Maori population, would need to be completed by a researcher who identifies with, and belongs to, that culture.

Further research also needs to focus on the type of interventions that could be used by teachers and parents to support learners in developing more sophisticated conceptions of learning and self-assessment to facilitate ongoing learning. Educational researchers need to work with learners and their teachers to identify how goal setting and intentional self-assessment could link to learning in more meaningful ways for learners.

In particular, a collaborative and participatory framework, in an ethnographic or action research paradigm, would be effective. In this way, the researcher, teacher and students could work together to identify the overall learning goals and establish a common understanding between teacher and learner as to the *intention* behind the outcomes. It would be interesting to ascertain how students within a school setting could be supported in developing increasingly sophisticated goals for their learning, and how they could self-assess these goals without the process becoming institutionalised.

The challenge in such research would be to create awareness in teachers that first conceptions of learning and self-assessment make a difference to the way students learn, and second that teachers can learn how to help learners develop increasingly sophisticated conceptions of learning and self-assessment. This actually means, for the teacher, that changes to practice will be inevitable if their assessment systems are to portray useful messages about learning to the students. In particular, the message needs to be communicated to students that it is not only speed of completion and presentation of work that are valued and assessed.

By valuing students' self-assessments, and through linking these to learning, teachers may encourage more reflective learning. This requires further research to identify both the impact on teacher practice, and the impact on student learning.

## 8.5 Concluding comment

When teachers appreciate the learners' views on learning and self-assessment, and can identify the multiple contexts and settings in which this learning occurs, they are in a stronger position to facilitate meaningful learning for all students. The present study has examined and identified the role of the learner in self-assessing and critically reflecting upon their learning. The data from the first phase of the research identified that year 7 students experienced and conceptualised learning and self-assessment in diverse ways, and the results from both phases of the study identified a relationship between students' conceptions and the context in which they were formed. There was a tendency for students to conceptualise learning and self-assessment in more sophisticated ways while discussing learning in out-of-school settings. The study also found that students' conceptions of learning and self-assessment impacted on the way they approached the learning and self-assessment activity. Their conceptions also influenced the type of role they assumed in learning, which in turn influenced the way they interacted with others in the learning process. Effective students essentially become chameleons, skillfully adapting to the context. As educators, therefore, it is important for us to understand what learners *think* about learning and self-assessment in order to facilitate further learning for the students, and to help them adapt successfully to each context.

Ultimately the assessment and learning questions and challenges are not technical ones but ones pertaining to educational quality that meet the "various social purposes that assessment fulfils" (Broadfoot, 1992, p. 12). The personal meaning students bring to learning and self-assessment tasks contributes to the way they approach the learning. Their conceptions of learning and self-assessment are therefore an integral aspect of the ongoing dialogue about how to help students become "better learners" (Pramling, 1996a). As an *approach* to learning is not essentially "inside" the learner but "between" the learner and the learning activity, both personal and situational elements of the context are important (Ramsden, 1988).

Teachers can facilitate student learning and self-assessment by encouraging students to actively set personal learning goals, and by showing students how to visualise the end product and their achievements in order to set appropriate goals. Perhaps, then, as educators, we will have students who know why they are learning, who know what the

point of learning is, and who want to complete learning activities to learn rather than because the teacher told them to do it.

Finally, results from this study show that learners' views are an invaluable source of information for the teacher, if the teacher is prepared to listen to the students' voices and come to understand their conceptions of learning and self-assessment. Essentially, the decision "to listen to, reflect and act upon the perspectives of pupils lies in the hands of their teachers" (Pollard, Thiessen, & Filer, 1997, p. 10). By identifying and recognising students' conceptions of learning and self-assessment, teachers and students alike can create an environment for learning that is responsive, reflective and collaborative.

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## Appendices

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## **Appendix A: But is it right? Students' conceptions of assessment.**

Bourke, R. (1996, December). *But is it right? Students' conceptions of assessment*. Paper presented at the Conference on New Zealand Association for Research in Education (NZARE), Nelson, New Zealand.

### **Abstract**

If assessment were a person, it would be an actor. If it were an animal, it would be a chameleon. As a concept, it is both. Assessment plays a large, diverse, and ever changing role in the life of students and educational institutions. Its roles include accountability, measuring student progress, identifying effective programmes and effective teachers, and recognising patterns of need within a school. Internationally, assessment has been identified as a vehicle to effect change in educational systems with the belief that it can be used as a means to raise standards. However, this has created the paradoxical position that while test scores may increase, student learning may become marginalised. This paper uses the results of a pilot study undertaken with students from 5 to 17 years to identify and examine students' conceptions of assessment. Initial indicators suggest that students view assessment as a process to measure their learning, which they see largely as a process of measuring "themselves". The need to "get it right" was experienced from 5 years to 17 years. Students across the age ranges saw assessment as a powerful mechanism for the teacher to determine learning outcomes in an attempt to increase learning and ultimately productivity. Using initial results from the pilot study, this paper examines the importance of researching students' conceptions of assessment in order to assist the current international agenda of developing authentic assessment practices.

### **Introduction**

Assessment systems within schools currently encourage an individualistic, surface and atomistic approach to learning, and can have a debilitating effect on student learning. Despite research that has shown how assessment procedures influence what and how students learn (Entwistle, 1987; Entwistle and Ramsden, 1983), little attempts have been made to incorporate authentic assessment measures in classrooms. Where efforts have been made by educators to utilise more formative assessment procedures through authentic assessment strategies (for example portfolios, self-assessment, performance based assessment see Bourke, Poskitt, & McAlpine, 1996; Perrone, 1991; Zessoules & Gardner, 1991), often the intended effect of including the learner more fully in the assessment process is not realised (Harris, 1994).

It is widely recognised that there is a need to change assessment practices to better reflect current knowledge of learning (Marzano, Pickering, & McTighe 1993; Harris, 1994, Nisbet, 1994), but at the same time there are tensions between reforms that reflect assessment for accountability versus assessment for better learning (Nisbet, 1993, 1994). This is reflected in New Zealand where school assessment practices have been used on the one hand to make broad evaluative claims about institutional performance while on the other hand to improve student learning.

Although *The New Zealand Curriculum Framework* states 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), the assessment *practices* required by schools to generate the data for accountability and for learning are quite different. While one approach highlights norm-based standardised testing, the other agenda requires more authentic assessment measures. The irony is that often teachers use the same practices for different purposes.

During 1995, the New Zealand National Education Monitoring project commenced national testing of year 4 and year 8 students to “get a broad picture of the achievements and other educational outcomes of representative samples of New Zealand school students”. Part of the agenda in the introduction of this national programme of monitoring New Zealand school students was to “address issues of accountability”. Although there are some fine examples of authentic and interesting assessment activities designed by the NZNEM project, the *purpose* of these assessments tasks are not for individual student learning, and as such must be necessarily standardised. While this is not in itself a major concern, assessment change must occur at the classroom level if standards are to be raised, and if schools are to be held accountable for student learning. The notion of centralising assessment data will not necessarily raise standards or change classroom practice.

A number of countries (including France, Germany, the Netherlands, Spain, Sweden, Britain, the United States of America and New Zealand) are encouraging authentic assessment practices and a greater involvement in student participation which is ironic given that students *are* the integral facet of assessment anyway. Although the rationale for changing assessment practices has included to keep up with changes in the way learning is conceptualised and to focus on student learning, there is also the belief that assessment has the potential to raise standards. The rationale to “raise National standards” underpins much of the reform, but there are two directions that these reforms have taken (Nisbet, 1993, 1994). Nisbet (1994) distinguished between these two directions as a political imperative with an accountability agenda being the driving force, and a paradigm shift towards integrating assessment with learning. These directions occur within a wider socio political framework where assessment has far reaching implications. For example, Broadfoot (1996) highlights the more insidious function of assessment as means of “*socio control*” and states that “assessment is arguably *the* most powerful policy tool in education” (p. 21).

It would be fair to say that within New Zealand, there is a degree of understanding between principals and teachers about the different nature and purpose of such practices, but clearly within the student population there is neither the understanding nor appreciation of the political subtleties underlying both approaches. This is of particular concern because there is clear evidence that the message students receive about how they are to be assessed, affects their approach to the learning task. They do not differentiate between the purposes of assessment. So what messages are we giving them?

## Assessment and learning

It is well documented that from an early age, children are forming beliefs, conceptions and ideas about school and learning (Gardner, 1991; Nicholls, 1992). Assessment practices in schools are one way in which messages are conveyed. For example, Masters and Forster (1996) noted that "assessment methods send powerful messages about the kinds of learning considered worthy of recognition and reward" (p. 19).

There is a clear need to look at the effect the current assessment systems have on student learning and explore the students' perceptions of learning and assessment. As Boekaerts (1991) has argued "school is a context in which evaluation of competence is pervasive and continuous ... assessment and self-assessment are central, unavoidable and highly informative components of daily functioning" (p. 2). She goes on to suggest that students need to grasp the meaning of the assessment system in order to understand the criteria for measuring competency. Through more understanding of the assessment system, students are in a stronger position to link assessment closer to learning. Marzano, Pickering, and McTighe (1993) recognise the integral link between assessment and learning and argue that assessment practices must change "so they mirror the learning process" (p. 11). Nicholls and Hazzard (1993) believe that the assessment process should be "no more separable from teaching than the attempt at mutual understanding is separable from an ongoing conversation among friends" (p. 44).

Regardless of the institutional systems for assessment practices put into place through Government and school policy, or through individual teacher initiatives, student learning and development will continue within the context of their lives and in interaction with the social milieu of their culture. The way society makes decisions about how and what to assess in school settings is essentially a political decision (Broadfoot, 1996; Shor, 1992). Educational policies on assessment seem to be an attempt to control the learning *outcomes* of students in an attempt to increase learning and ultimately productivity. However student learning cannot be controlled within prescribed curricula, and unless student conceptions of learning experiences are addressed, new assessment or learning initiatives will not impact greatly on the experiences of the students.

Assessment can be a constructive and positive process when assessment practices are more closely linked to learning (Drummond, 1993). It is critically important therefore, to acknowledge the learner in both researching learning and assessment, and in the process of adopting alternative practices. Nisbet (1994) states that "we should be more concerned with the interests of the group with least power, the learners. In designing the future pattern of assessment, the prime consideration should be the effect on learning, and decisions about assessment should be made as close as possible to the learners" (p. 168). This is an admirable philosophy, but challenges to the system will be seen as a political threat because assessment systems in schools are "an instrument of *system control*" (Broadfoot, 1996, p. 21). Therefore, changes to assessment practices, in effect challenge the system within which they are developed.

Herman, Aschbacher, and Winters (1992) argue that assessment is not an end in itself, but rather plays a fundamental role in providing authentic and meaningful feedback to students to improve their learning, alongside the instructional practices and educational options. If we are to understand assessment, the outcomes of assessment must be examined alongside the *purposes* (Drummond, 1993). One of the outcomes will involve the impact on the individual learner, and how it directly affects him/her. The learners' experiences and conceptions of assessment need to be explored.

Shaul (1972) argues that there is no such thing as a *neutral* educational process because the objective is either to integrate the learner into the present system through encouraging conformity or allowing "the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world. The development of an educational methodology that facilitates this process will inevitably lead to tension and conflict within our society" (p. 14).

### Student views

The New Zealand Commissioner for children, Laurie O'Reilly, has emphasised the importance of including children's voice into research. Pollard, Broadfoot, Croll, Osborn, and Abbott (1994) state that "we still know relatively little about life in infant schools – particularly from the pupils' point of view" (p. 3). Oakley (1994) has also spoken out regarding the need to include children's voice in research. She noted that children have been an invisible and excluded group in social science work just as women were twenty years ago.

Smith (1996) argues that "even where people claim to be working on children's behalf there is little attempt to understand their ways of seeing the world" (p. 10). Taking research as an example, student perceptions are usually interpreted through questionnaires and interviews. However, these attempts often provide external structures that are in direct contrast to the purpose of identifying student voice. Predetermined items are presented and the student is asked to rate or indicate their belief using a numerical scale (Schunk, 1992). These rating scales do not allow for surprise (i.e., the researcher has already identified a set agenda through the questions or items presented).

In addition to the problems associated with the methodological processes of obtaining student voice, much of the research using students perceptions have been as a means to some other end. For example, within the social cognitive theoretical framework, Bandura (1986) identified the importance of students' perceptions as a function of learning where the acquisition of skills, knowledge, rules and so on are gained through observing others. Schunk (1992) identifies the need to "investigate how well perceptions translate into actual classroom behaviours" (p. 19). This means that if we are to gain a clearer understanding of *how* students undertake assessment tasks we also need to know *why* and *what* their understandings of these tasks are. This encapsulates their conceptions of the political, social and cultural milieu associated with the tasks. In order to do this, research methods need to be broadened which may included longitudinal studies, case studies and oral histories (Schunk, 1992).

As Powney and Watts (1987) state "educational research in general, and interviewing as a particular methodology, are inseparable from people and are very often exclusively about people" (p. 161). Interviewing, while being a useful tool to gather understanding about the way people experience the world, has the difficulty that words limit the communication of this experience. In the introduction to Bakhtin (1981), Michael Holquist states that, "...all transcription systems including the speaking voice in a living utterance - are inadequate to the multiplicity of the meanings they seek to convey. My voice gives the illusion of unity to what I say; I am in fact, constantly expressing a plenitude of meanings, some intended, others of which I am unaware" (Bakhtin, 1981, p. xx).

The use of interviews through a phenomenographic inquiry is a useful approach to identify the multiple ways of viewing socially constructed realities. As it is important to understand the participant's views, a research specialisation is necessary to gain a second order perspective. Marton (1981, 1988; Marton & Booth, in press) makes the distinction between a first-order and second-order perspective. He argues that it is possible to explore people's experience of the world (second-order perspective) but not study *the* world (first-order perspective). Marton (1981) points out that from a phenomenographic framework "conceptions and ways of understanding are not seen as individual qualities" (p. 177) but when considered as categories of description can be used to better understand the variation in experiences of a phenomenon. These categories of description are seen as denoting a "kind of collective intellect" (p. 177). This research approach "aims at description, analysis and understanding of experiences" (Marton 1981, p. 180). The assumption that conceptions of a single phenomenon appear different to people because their experiences are shaped by complex contexts.

### **Piloting the possibilities**

The present pilot study was used as a means to trial questions, identify key issues in students conceptions of assessment and learning and to trial the suitability of the methodology against the research question. The specific research questions in relation to this paper, were - How do students conceptualise assessment? What are students experiences of assessment? Do they link it to learning? to other processes? How do they know when they have learned something? How do they know what they know?

While the study also generated a rich source of data in relation to student learning, it is the focus of assessment issues that this paper addresses. Twenty four students from four schools were interviewed. Two primary schools, an intermediate school and a secondary school were chosen to take part - all schools were coeducational and part of the state education system. The students were invited to participate by their teachers, and those who themselves willingly consented were selected to be interviewed. Each interview consisted of 45 minutes. The 5-year-old children were interviewed for no longer than 15-20 minutes. All interviews were audio taped and transcribed.

### **Debating the highlights**

Assessment, testing and evaluation are terms used to describe processes that accumulate evidence to say something about student learning. While assessment is a

more comprehensive term which encompasses a range of strategies to analyse student learning, it is (as with tests and other forms of evaluation) the means by which teacher makes judgements about student performance. Within this pilot study, no one term was used to elicit discussion from the student. Instead questions such as "how do you know when you have learned?" and "how do you know you are getting better?" were used when students described their learning experiences. Therefore, they described what was most pertinent to them within the given context. It became apparent that the different contexts of learning encouraged different forms, and even philosophies of assessment. For example, a 17-year-old used self-assessment within a supermarket setting, but did not employ this strategy intentionally within a school setting even when it was encouraged because he recognised that within the institutional setting of the school, it carried no weight, no grade, in short, it had little fiscal value.

The pilot study indicates that students' conceptions of learning do not reflect a constructivist view of *school-based* learning, nor do they see assessment practices reflect a holistic approach to learning. The younger students see assessment and learning within a behaviour paradigm, while the older students also view learning in this way and see assessment practices as a social engineering process. While some students (9yrs, 12yrs, 17yrs) reported a move towards more authentic assessment practices including self-assessment, their views reflected a scepticism and recognition of conflicting messages about learning, and about their role in the process. Harris (1994) identified this in a British study in a school that actively encouraged students in the learning process. However Harris noted that even with these deliberate attempts to include the student "the student voice remains peripheral – they are essentially observers rather than participants in their own development" (p. 63).

Before any major innovation, such as authentic assessment methods like portfolios, self-assessment and peer assessment, students need to become more autonomous in the assessment process. Where students rely heavily on external sources for the identification or grade or mark, they will be hindered in the development of internalising a set of standards (Stipek, Recchia, & McClintic, 1992). This concern is particularly pertinent to the development of authentic assessment strategies. While these students were interviewed about learning and assessment in general, there was little indication that they understood a close link between assessment and learning. The links they made were about *measuring* performance rather than associated with their ongoing learning. Assessment was seen as a mechanism to test how well they could "remember" what they had learned, rather than how well they "understood" what they learned. Although all students alluded to the fact that the content of their learning was predetermined in some way, only the older students (16–17yr olds) questioned the relevance and wisdom of this prescribed curricula.

Of greatest concern to me as a researcher and as an educator, is that the students do *not* feel part of the assessment process, and do not see it as a positive process. They have identified the process as an external value and attributed it too much power. While this may not be surprising in itself, what does need to be questioned is why *authenticate* assessment measures if the structures associated with the traditional history of testing remain. That is, when attempts are made to develop authentic assessment practices, the politics and philosophy also need to be changed if the learner is to be fully involved. Otherwise, these assessment practices will continue to hinder student learning if they (a) hold no currency and (b) do not genuinely involve the student.

From the students' perspective, the real measure of learning seems to derive from external tests and examinations. It is viewed as a means to achieving ultimately higher grades, and in the cases of the senior students, a ticket to higher education and employment.

Five points are worth making at this stage and will be outlined and discussed below. Although this is neither a comprehensive analysis nor a definitive statement, these indicators did emerge throughout all age groups. In the extracts below, interviewer questions or comments are in brackets.

**1. Students see assessment as an external source of control over their learning where the purpose is either to tell them what they have learned, or how much they have learned.**

This idea begins with the 5-year-olds. Some of the children interviewed had been at school for as little as five weeks. Already they measured progress through stars, stamps and stickers, and whether they had moved from a pad to a 1G2 exercise book in writing. In exploring this issue of progress further, writing was attributed success when it was written by a sharp and dark pencil. When asked, how they would make their writing better, most children would sharpen their pencil. For example, one child stated:

*When your writing looks nice you start to be on a 1G2... (how will you know?) ... 'cause I've got a sharpened pencil and it makes me do nice writing ... and you get stickers if you've got good writing. And that's my first day. And that's my second day and that's my next day. (Shows a page which didn't get any stickers and stated) ... 'cause it looks messy.*

*(If you wanted to make that better what would you do?) ... um ... you could just keep doing it. you could try out another row and see if it's better. (how would they look different?) 'cause I'd push the pencil down harder and it makes them ... um ... nice. If I've got to do nice one I'd push the pencil hard because it makes them look nice. (Nice?) yeah ... then its dark.*

With older children, they relied on the assessment process to indicate whether they were learning. These assessment practices tended to be in the form of tests. One 9-year-old stated "if you do better than that last test that means you're learning". Another child of the same age stated

*Oh if it was reading we normally do a worksheet and she gives us ticks for every answer if we get it all right. Then we have a look at it and we know that we are getting them right. That we are learning ...*

The 12-year-olds tended to be more quantitative in determining the learning. One stated,

*If you give a percentage well you have learnt ... like if you get 65% then you've learned 65% of named things in this math test or algebra or something.*

Another child stated in regards to the importance of tests,

*you learn more and then you have a pre-test and then you have a post-test. And the pre-test is like you haven't done anything on the unit and then you just go and do the test and then you learn about it for about 2–3 weeks and then you go and do the same test again ... (do you learn anything during the test?) um ... not while you are doing it ... not really ... they are just for revision and stuff.*

The pre-test/post-test must have been a popular strategy in this school as all students mentioned it. Another one stated:

*we do a pre-test and a post-test. So we do a test before we do it and the test after tells us how much we have learnt compared to how much we already knew ... and we assess how much we have learnt on that ... you can minus the amount you got from you pre-test from your post-test results and see how much percent you got ... or you can just see how much you went up ... how much your score went up...*

## **2. Assessment is a means to sift out the winners and the losers.**

This was most evident in the older students. The students at a younger age (9yrs, 12yrs) talked about the need for education, learning and school to get a job or go on to higher education, and had preconceived ideas about their options if they neither worked nor received tertiary education. However, it was the 16- and 17-year-olds who made these ideas explicit. The following extract is taken from the interview with a 16-year-old student. We had been discussing assessment and examinations, and this is in response to the question, "Can you tell me then, what the point of tests and exams are?" His answer was:

*... to get the winners and the losers. You know...to help create a margin between people who pass and the people who fail. So that employers know this person is better than this person, so we'll take him. (So it's got nothing to do with your own personal learning? It's to do with employers?) yeah... they [the teacher] say you've got to work at your own pace and stuff. But really that's not how society works. You know if you're not as good as the other people then the other people are going to get employment and not you ... when you're an adult if you're unemployed and not doing much, I can't really call them losers or anything. They just ... yeah, if someone has got a nice job because he has a good education, then he would be considered a winner ... and if someone who had the same amount of brains but or maybe not the same amount of brains, but didn't do well at school and is unemployed, then he's a loser ... I want to be a winner.*

## **3. Assessment is separate to learning, and institutionalised self-assessment is regarded as a waste of time.**

This was an interesting theme throughout the age groups. The 5-year-olds had no concept of self-assessment at this stage, but were able to describe situations where they could tell they had learned. These primarily involved performances such as making cheese and crackers in the microwave, and painting pictures of people. Ultimately, they relied on teacher assessment, even in these situations. The 9-year-olds had some idea about self-assessment because it was being used as a strategy in the school. However, most had little idea of the application of it, apart from the smiley/sad face distinction, and felt it was an activity which was isolated from other people and other activities.

One 9-year-old stated:

*you have to do it by yourself and you go, um, um ... and you can't work it out ... it's doing stuff by yourself and seeing what you've done by yourself.*

The older students had clear ideas of self-assessment in a school setting, but did not feel it held much credence with the teachers and with the system. One 17-year-old stated:

*... for yourself, I don't think it's that important to assess yourself, 'cause it's only your own opinion and whoever is marking it could have a totally different one and you could let yourself down ... if their opinion is totally different to yours then it could mean if you fail or not. So their opinion is what goes because they are the ones who say if you have passed or if you haven't.*

A 16-year-old had similar views:

*in my log book every three weeks or so you do an assessment ... saying what you've done well and what you shall improve in ... and lots of crap like that which I never bother about. (why don't you bother?) well I don't know. Um... um... well I'm always under rating myself quite a bit, for some reason. (under rate?) yeah...um...yeah... (you've got a log book and every three weeks you have the opportunity to assess yourself, but you don't bother with that?) well you do bother with it 'cause it's compulsory.*

**4. There are times when the learner already knows she/he has learnt something without an external source identifying that the learning has occurred.**

This was most evident when the learners talked about situations outside of the school setting, and it is these learning environments that will need further exploration. However, within a school setting there was also evidence that students were able to recognise and acknowledge learning as taking place.

One 12-year-old stated:

*we learn Maori quite often here ... you don't really need tests to learn that 'cause we just ... a language is ... you just learn it and you know it ... 'cause you can just say it and ... you just know it in your head and you just say something. Say it off your head. If you can do that, you know you have learned it.*

Another 12-year-old also noted this feeling of "knowing":

*sometimes the teacher didn't tell me, I know I've done better because I feel better about myself and some of the questions I know I have got right ... I feel proud of myself ... you feel better inside yourself ... if you get a test or something, you say 'I know that' and you write it down ... I don't know ... you just know it because you just know ... you get a funny feeling inside of you and you say 'I know that' and you write it down.*

One interesting situation arose where a 5-year-old was able to identify learning had taken place, after explaining an activity he had done as a 4-year-old. In later discussion, he identified what he knew now (as a 5-year-old), and differentiated it from what he knew as a 4-year-old.

He was describing how he drew pictures of people:

*you draw faces then nose... then a nose ... then a mouth, the ears. Then another ear ... then ... I don't do hair and I don't do eyebrows or eyelashes. And then you do that (referring to the body) and then you do the arms and then you do the legs ... (Why don't you draw the hair?) Because I didn't know then.*

Later the same child was discussing something he did not know when learning to read a new word. In this way, he was able to identify when (and where) learning is *not* taking place. He was responding to the question, "How do you learn to read that?"

*you look at it ... you look ... you, um ... um ... when I'm reading this ... you don't read, you only silent read ... means being quiet ... read it in your brain ... But if I don't know it, then I can just go like this [he began turning pages and pointing to the words as he went] (So you are just pointing to the word now?) Yea. And the teachers think I am just reading. (Oh ... but really you don't know the word?) Mm. (But how will you learn the word?) ... I don't know ... (Do you have to point very often?) ... Um yes ... in silent reading.*

##### 5. Assessment is a means ... to different ends.

This requires further analysis, because assessment was a means to an end for most of the students but there were different "ends". Some students clearly identified with institutionalised ends, and better grades, marks and credit. Some students, when discussing how they assessed their work in relation to outside school activities, such as cricket, music, and hobbies, had more intrinsic ends, and were not motivated necessarily by external rewards, nor did they require external sources to structure and acknowledge their success. In the following extract from an interview with a 17-year-old, he points out the dilemma of wanting to answer questions in exams in the way *he* would see fit, yet knowing that there is a *preferred* way of seeing the world, and if he wants the marks he must adhere to this. His "end" is defined by the system of which he is aware. This same student later referred to his work within a supermarket setting, where he could be creative and innovative and be rewarded for this. Assessment in this setting was owned more by this student and therefore it served a different end.

This is part of a longer sequence about the need to know what was being assessed, and what answers were expected within that assessment.

*... basically we've got to learn to pass the exams. That's basically ... like the teachers in English we learn stuff for the exams ... there might be another way, a better way of doing something, you don't worry about it. It's done this way so you get the marks. If you don't do it this way, you don't get the marks. Basically that's the entire years work is to sit the exam and pass it. Otherwise you might have lots of knowledge about something ... about biology right. You've learnt about the liver and how the body functions and stuff like that. You become a real expert in it, but they're not studying that in the exam. But the teachers always give you guidelines in what to study, but um ... it's like poetry. Someone or not someone ...man ... has sort of made a way that says 'this is nice poetry' and 'this poetry is garbage'. And who is to say this poetry is garbage and this poetry is good poetry? Basically you have got to have the right answer ... like you might think the garbage is nice poetry, but if you write that down in the exam you don't get the marks.*

### The next stage ...

A pilot study is itself a learning experience, where constant assessment of the research questions and methodology is present. This study did not just trial the questions, but also the ideas, concepts, and the research aim itself. As a researcher, it is imperative to remain open minded as to both the process and the outcome of the research. Therefore, the direction for further study is assisted by the piloting of questions, concepts and possibilities.

1. Students' conception of learning and assessment need to be examined within the context with which they are formed.
2. A phenomenographic framework, while useful in determining variation can not examine contextual issues. Therefore, the research design requires a more anthropological and sociological emphasis.
3. Where students discuss learning in a wider framework than school, they discuss *assessment* in very different ways.
4. Learning *is* living and assessment *is* learning. However, testing is neither living nor learning.

Therefore the main study requires the researcher to explore learning and assessment in a variety of contexts. For example, jazz dancing classes, sports training, art/music classes, home and so on. This is consistent with research findings that have demonstrated how the same students can approach assessment tasks within one discipline (for example, mathematics), quite differently according to context (Lave, Murtaugh, & de la Rocha, 1984). The interviews are a useful starting point to contribute to the description of learning and assessment as experienced by the learner. Participant observation and further interviewing will assist with the *understanding and explanation* of these experiences by situating them within the various learning contexts. As phenomenographic research is not intended to explore or attribute *meanings* to the variation of descriptions, the methodological framework for further study will require an interpretivist approach in order to further inform the work.

Further research in students' conceptions of assessment will inform the development of formative assessment. As Black (1995) observed "much of the investment in assessment and testing ... has been devoted to the certification and accountability functions, to the neglect of the formative" (p. 7). With an increasing emphasis on validity in assessment (Crooks, Kane, & Cohen, in press; Nisbet, 1994), and in particular, the introduction of consequential validity (Messick, 1989), we must be looking at the implications summative and formative assessment have on students. If we are to take consequential validity seriously in education (Crooks, Kane, & Cohen, in press; Gipps 1994; Messick 1989), it is imperative to take account of the students' views of how assessment is impacting on their lives and their learning.

The stage is set for changing assessment practices, and indeed, may educators have already commenced auditions. However, it is not just a case of changing the stage setting. Authentic assessment practices will not mask the problems of the past until a consistent and concerted effort is made to address the structures, the power and the influences surrounding assessment practices. It's time for another play ...

*We see the puppets dancing on their miniature stage, moving up and down as the strings pull them around, following the prescribed course of their various little parts. We learn to understand the logic of this theatre and we find ourselves in its motions. We locate ourselves in society and thus recognise our own position as we hang from its subtle strings. For a moment we see ourselves as puppets indeed. But then we grasp a decisive difference between the puppet theatre and our own drama. Unlike the puppets, we have a possibility of stopping our movements, looking up and perceiving the machinery by which we have been moved. In this act lies the first step towards freedom. And in this act we find the conclusive justification of sociology as a humanistic discipline. (Berger 1966, concluding paragraph).*

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## Appendix B: Information sheet: Phase One



**MASSEY  
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**FACULTY OF  
EDUCATION**



DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY

- Title of research:** Learning and Self-assessment:  
The student's point of view
- Researcher:** Roseanna Bourke  
MEd (Otago) PGDipEdPsych, BEd, Adv. DipTchg
- Contact details:** Department of Educational Psychology, Massey University,  
Phone 3569099 x7527
- Research supervised by:** Dr. Janet Burns and Dr. Alison St. George  
Massey University

### What is the study about?

The aim of the study is to explore how students view learning and self-assessment, and what factors influence the learning process. This research is part of my doctoral study and may result in publications. The study involves identifying students' conceptions of learning and self-assessment. During 1995 I trialed some questions in interviews with a small group of students ranging in age from 5 years to 17 years. I have narrowed the age range for the major study to 11–12 year olds currently in year 7 of schooling (Form one). There are two phases to the study.

*Phase One* of the study will involve undertaking a series of interviews with up to 30 year 7 students. *Phase Two* of the study will involve in depth observations and conversations with year 8 students in a variety of contexts where learning takes place. During Phase Two parents of the participating students will be interviewed. The class teacher and syndicate teachers of the students will be interviewed.

This research has been designed with the Massey University Code of Ethical Conduct for research involving people, and has the approval of the Massey University Ethics Committee.

### If you take part in this study, you have the right to:

1. Refuse to answer any particular question, and to withdraw from the study at any time.
2. Turn off the tape (if the interview is being audiotaped) at any stage during the interview.
3. Ask any further questions about the study that occurs to you during your participation.
4. Provide the researcher with information on the understanding that it is completely confidential to the researcher. All information collected is confidential and it will not be possible to identify individuals in any reports that arise from the study.
5. All tapes will be destroyed at the conclusion of the research process.



## Appendix C: Letter to parents



**MASSEY  
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**FACULTY OF  
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**DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY**

May 1996

Dear Parents and Caregivers,

My name is Roseanna Bourke and I am currently undertaking a doctoral study in the area of learning and self-assessment.

I would like your permission to interview your child to gather information about students' understanding of learning and self-assessment.

I have enclosed an Information sheet which describes the research project. As I am interested in interviewing year 7 students, your child is being invited to take part. After discussing this with your child, if you both agree to the interview please send the consent form back. Your child will then be given a consent form to complete. Some students from the group of students I interview will be invited to take part in Phase Two of the project. However, by taking part in Phase One does not mean the child is obligated in any way to taking part in Phase Two.

In Phase One I would like to interview up to thirty year 7 students. This will involve a time commitment of approximately forty minutes. There will only be one interview. The methodology requires that the interview be audiotaped. If I receive permission from parents and students that exceeds the number I need to interview for the study, students will be selected at random.

*If your child takes part in this study, you and your child have the following rights:*

- Refuse to answer any particular question, and to withdraw from the study at any time.
- Turn off the tape at any stage during the interview.
- Both parents and students have the right to ask any further questions about the study.
- Provide information on the understanding that it is completely confidential to the researcher. All information is collected anonymously, and it will not be possible to identify you in any reports that arise from the study.
- All tapes will be destroyed at the conclusion of the research process.

If you are happy to allow your child to take part in this study, please complete the enclosed form and return it to your school.

Many thanks for considering this request,

A handwritten signature in cursive script that reads "Roseanna Bourke".

Roseanna Bourke



## Appendix D: Parent/caregivers consent form: Phase One



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Version 1.0

DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY

**NAME OF STUDY:** Learning and self-assessment:  
The student's point of view

**RESEARCHER:** Roseanna Bourke, MEd (Otago) PGDipEdPsych

I have read the information provided in the letter about this study. My questions about this study have been answered to my satisfaction, and I understand I can ask questions at any time.

I also understand that my child has the right to withdraw from the study at any time and decline to answer any particular questions in the study.

**I give permission for Roseanna Bourke to interview my child \_\_\_\_\_ during school hours about his/her understanding of learning and self-assessment.**

**I understand the interview between Roseanna and \_\_\_\_\_ will be audiotaped and will be used only for the purpose of this research. I understand that my child has the right to request the tape be turned off at any stage of the interview.**

**Child's name:**

**Child's date of birth:**

**Class Room Number:**

**Name of person completing the consent form:**

**Relationship to child:**

**Signature:**

**Date:**



## Appendix E: Student consent form: Phase One



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**FACULTY OF  
EDUCATION**

DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY

**NAME OF STUDY:** Learning and self-assessment:  
The student's point of view

**RESEARCHER:** Roseanna Bourke, MEd (Otago) PGDipEdPsych

I have read the information provided in the letter about this study. My questions about this study have been answered to my satisfaction. I understand I can ask questions at any time.

I also understand that I have the right to withdraw from the study at any time, and decline to answer any particular questions in the study. Neither my name nor identifying features will be used in any report that results from this study.

**I give permission for Roseanna Bourke to interview me and I understand the interview will be audiotaped and will be used only for the purpose of this research. I have the right to turn off the tape during the interview if I need to.**

**Student name:**

**Class Room Number:**

**Signature:**

**Date:**



## **Appendix F: Interview schedule – Students: Phase One**

### **General introductions followed by..**

*Thank you for agreeing to talk to me about learning. I am doing research in education and I'm especially interested in the learning that takes place with students of your age, intermediate school students. I'm curious to know what learning is all about for you, so I want to hear what you have to say about learning.*

### **When you decided to take part in this interview about learning, what sorts of things did you think we might talk about?**

*What sorts of things came into your mind when you heard I wanted to talk to you about learning?*

### **Can you tell me something you have learned this year?**

### **Can you tell me more about that?**

*When did it happen? Where did it happen? How did you learn that? Were other people involved? Who? What did you do with them? Were things involved, like books, computers? How did you feel at the time?*

### **How did you go about learning it..?**

### **When did you know you had learned....?**

### **How did you know you had learned...?**

### **Is learning always the same, or are there different sorts of learning? (*doing, knowing, understanding*)**

### **What is the point of learning?**

### **Does your teacher know when you're learnt something? *How? Who knows first when you've learnt something – you or the teacher?*** *(tests, assessment raised?)*

### **Sometimes teachers talk about assessment. Has your teacher ever talked about assessment? What sorts of things do they say? Does it help with your learning?**

### **You've talked about learning in \_\_\_\_\_ Does learning take place in other places? Where?**

### **Do you learn in places other than \_\_ (school) \_\_?**

### **Does your parent/guardian know when you're learnt something? *How? Who knows first when you've learnt something – you or your parent?***

### **Is there anything else you would like to tell me about learning or assessment?**



## **Appendix G: Example of interview transcript: Phase One**

### **Interview with M03 (10.6.96)**

**(Researcher) When you first heard that I was going to talk to you about learning, what sorts of things did you think we'd talk about?**

(Student) Um, school work, ah work, um .. anything to do with learning – like what I do on the average day anything.

**Is learning about work?**

Some ways, it just depends on what you do. Like metal work and all that, but it's to do with listening and book work is in class and listening and writing and reading.

**It sounds like you do a lot of learning?**

Yeah.

**What would be something you've learned recently?**

Recently would be ..... um, the Sioux Indian and where they live and what they eat and what they do with buffalo and how they hunt.

**Have you learnt all that?**

Yeah.

**How did you find out about that?**

Because for theme we're doing Sioux, and um, we've been doing some reading, writing, listening, um.

**When you do your reading, what sorts of things do you do there?**

Um, reading books, um, pieces of paper that the teacher gives us with writing on it.

**The pieces of paper have writing on?**

Yeah, just writing and you read it.

**And then what do you do?**

Well, there was this one yesterday, no on Friday, we had this piece of paper and we're doing, like, a script thing and it had a picture of what the camera would be looking at and some story – we were given a story and we had to put in the main parts, written out onto the side of the picture and you had to draw the picture.

**And when did you know when you'd finished doing that, when you'd learnt something?**

When I know I'm finished, when I've written it all out or the teacher says to stop.

**In school, how do you know when you've learnt something?**

..... I'm not quite sure, um ... by remembering it.

**Okay, so is remembering important in learning?**

Yeah.

**And does that tell you if you've learnt something?**

Sort of, yeah.

**Sort of?**

Yeah, because you can, like, the teacher will ask you a question and you can remember it, so you've shoved it in your brain, you've learnt it – you understand it.

**Oh, you understand it?**

Yeah. You know what's going on, sort of thing, like you've learnt it – it's stuck in your brain.

**Oh, that's interesting. So you have to learn it and you have to remember it and understand it?**

Yeah.

**Oh. When you understand something what do you do with that information?**

I write it down or I remember it.

**You seem to do a lot of remembering?**

Yeah.

**How do you know what to remember and what not to remember?**

Well, when I'm remembering something that I have to remember I keep saying it and saying it and saying it in my brain, I just keep saying it over and over again.

**Okay, and by saying it over and over again...**

I remember it. Like this morning I had to remember that maths – I'm not doing maths tomorrow and Friday, and I just kept saying it in my head to remember it.

**What did you have to remember?**

That I've got no maths with Mrs Soap on Thursday and Friday... oh no, I mean tomorrow and Friday.

**So you've just told yourself that over and over again?**

Yeah.

**When you're trying to learn something when do use that way of learning?**

Um, ..... when something, like, sometimes when we're doing a test I just remember – like for the Sioux I had to remember that they lived on the plains and they used to be farmers, so I just kept saying it in my mind.

**That they lived where?**

That they lived on the plains in America and they used to be farmers that lived on the hills.

**And why did you have to know that?**

Because the teacher was going to ask us questions the next day.

**Okay, and when the teacher asks you the questions, why do they ask you those questions?**

To know if we've learnt something.

**Who knows first if you've learnt something – you or the teacher?**

The teacher.

**Why is that?**

It's hard.

**What's hard?**

To know that I've learnt something, because you don't know if you've learnt it or if you already know because ....

**Oh, what would make it less hard for the teacher to know if you've learnt something?**

Um, for us to tell them.

**Right, so you said it's hard for you to know if you've learnt something sometimes, how will the teacher find out if you've learnt something?**

Well, when he asks us questions and if we answer them and we remember well, so it means that we've learnt it, otherwise we show him our book and it's got it all written out and so we just look at our book to remember.

**Where does understanding come in, then, if you're trying to remember all these things, why do you have to understand it?**

To know what you're talking about, to know what it means. So, like, when you're talking you know what you're talking about not that you don't. So when you talk you know what you're talking about when someone asks 'what does that mean?', you can tell them.

**So when you know what you're talking about then, you know that you've learnt something?**

Yeah.

**Do you have tests then to find out what you've learnt?**

Yes, we have maths tests, we have all sorts of tests.

**Okay, can you tell me about the maths tests?**

Um, well, they go into home sample and you get a piece of paper and it has all these questions on it and it gets put in a file or something from you and it's got all the answers and what your maths age is, and stuff like that.

**Your maths age?**

Yeah, like, um, I'm in special needs for maths so I could be like a 7-year-old maths age or 8- or 9-, anything.

**Well, if you have the tests to start with then, why do you have that test to find out where you're going to be, why do you have that test?**

To find out what you need to learn to find out what age, so they can teach you that age and just know where you are.

**Okay, and then you have some lessons and then do you have another test after that?**

Yeah.

**Well, what's that one?**

That one is to see if you've made your age higher so you're up to another age or you're at the same and you need to be re-taught it or, um, to see if you've forgotten it, see if you've gone down or up in your marks.

**If you go up in your marks what does that mean?**

Well, then you get taught harder stuff.

**Okay. What does it tell you about your learning if you go up in your marks?**

Then that means that I've learnt something.

**And what if you go down in your marks?**

I'm losing my memory. I'm badder than I was.

**Is that possible?**

It is possible.

**Do you usually go up or down?**

At my other school I was going up and at this school I've only had one test so I'm not quite sure yet.

**Okay. So when you said about being special needs in maths what does that mean?**

Um, that means that I'm under my age for maths.

**So do you learn different sorts of things?**

I learn easier things for divided by.

**Is divided by one of the things you've learnt this year?**

Most of my times tables except for my 7's and 8's, um, what was the question?

**In maths, what you've learnt this year.**

Okay, um, what to do if you're times-ing a double digit number by a huge number.

**Okay.**

And ...

**So you're learning quite a bit?**

Yeah, and geometry.

**That as well. Lets take your tables. You were saying you are going to learn your 7 times table – have you started that one yet?**

Yeah.

**What one have you done that you've finished and you know really well?**

My 5's, 10's, 3's, 2's and 1's and 0's!

**Okay. How did you learn those?**

Well, I got a piece of paper and I looked on a chart, because we've got this chart and it tells you all the answers, and I got one set of answers and I just kept writing it out so I'd remember it.

**How did writing it out help you remember it?**

Because my hand was getting sore and if I didn't remember it my hand would get even sorer. So I kept saying it in my mind.

**You figured it would be a good idea to remember it?**

Yeah.

**Can you choose to remember things?**

No, not really, sometimes, once you get something in, like this morning for Thursday and Friday, I only need to remember it once and I can't get it out of my head right now.

**What was that?**

That there's no maths on Thursday..I mean tomorrow and Friday.

**Okay. What about your tables, can you get those out of your head?**

.... Sometimes, but now I have to remember them again.

**Why can some things go out of your head quite easily and then other things don't?**

Well you've said it too many times or you haven't said it enough times.

**Right. How are you going to go about learning your 7's times table that you want to get better at?**

Remembering, writing and these special colouring-in sheets that it has these equations, the teacher writes these equations written in pencil and you colour in the right ones, like we had one today that was if the answer was wrong you had to not colour it in, if it was right you had to colour it in orange. We had this other one when the answer, if say the answer was 38, and another answer was 42, you'd go down to the bottom and you'd look for 38, and then it was green, then you'd colour it in green, and then you went to 42, and then it would be blue or something, and then you'd know what colour to colour it in, and then you'd rub it out at the end.. the equations.

**Learning it that way, why do you find that so helpful?**

Because it's fun, it's funner than just writing it down and writing it down and writing it down.

**So learning can be fun?**

Can be, yeah.

**What does it have to be, to be fun?**

Something that you like doing. Like for metal work I like building and making stuff out of old stuff and that, so learning how, for metal work we made a cup holder so I learnt that, I learnt how to make it but it was also fun. And for colouring in, well, I like colouring in and drawing which made it quite fun because I like it.

**When learning is fun, does it make it easier or harder to learn?**

In some cases easier, some hard. It's because you get too carried away with it sometimes and you forget that you're meant to be doing the work and you don't end up doing it because you're too carried away.

**Too carried away with what?**

With, um... the other day we, um, for the Sioux Indian we had to draw because we were reading this book – the Indian in the Cupboard, and we had to draw Boon or Little Bull – he's the Indian in the cupboard, and if you get too carried away with it you forget that you've got to draw it onto a thing and you make it too – but, so I had to draw that pool table and I drew all the lines and make it just perfect and I couldn't do it again, well then I'd be in trouble because I can't do it again onto a good piece of paper and I'd stuff up. Sometimes you get too carried away.

**Yeah. So you like metal work by the sounds of thing?**

Yeah, and wood work and art and, what else have I done – cooking, um, yeah.

**Are all those fun learning?**

Yeah.

**What wouldn't be fun learning?**

Well learning that isn't fun it's getting a, like at my old school we were doing a project on the Sky and Comets and all that and Mrs Cheese, that's my teacher, she just kept writing heaps and heaps and then she'd say "have you finished?" and if we said "oh yes", she'd rub it out and then she'd write more and we'd just keep going through and it would be boring.

**Oh so learning can be boring?**

It can be, yeah.

**In maths, what's that sort of learning?**

Um, times tables, divided by, plus, take away, geometry.

**But, like, how would you describe it in terms of fun or boring?**

Sometimes fun, sometimes boring – it's sort of a medium. That's 'cause sometimes you do boring stuff and sometimes you do fun stuff.

**Well, what's the difference, like if it's maths, how can you tell if it's boring or fun?**

'Cause, if it's boring, well, you're just writing it out and writing down the answer and it's boring, and if it's fun, well, you actually get into it and do it properly.

**You get into it?**

Hmmm.

**But what does that mean?**

It means like get on with it and try and get everything right and make it look your best.

**What does boring mean then?**

Um, you don't really like it, it's boring – it's hard to explain. It's, it's when you don't like the activity but you have to do it and you don't really like it and you find you're bored.

**So you have to do it?**

Yeah.

**Why do you have to do it?**

To improve your learning skills and to remember it and in case you need it in your future.

**Oh. So what's the point of learning then?**

For your future when you grow up.

**Is it?**

Yeah.

**So all the learning you're doing now that's all for the future?**

Yeah, so in the future I'll have something to do and not be a drop out, like, on the streets, I'd have a job and be somewhere instead of being out on the streets.

**Hmm, that's interesting because if learning is for the future, so that you'll have something to do when you leave school, I just wonder if there's ever a time when you'd stop learning?**

No, Not really because you'd learn when you're grown up, too, from mistakes and good stuff, like, when you're retired you might learn something ..

**When you're?**

... when you're retired you might be into planting stuff or something and you might come up with a creation or something, you might experiment and then you might learn something.

**Do you ever experiment?**

Yeah with my chemistry set at home.

**Oh, do you, and what sorts of things do you do with the chemistry set?**

I make stuff that doesn't stain, and stuff that does stain, and sees what happens and um, see what would put out fires, see what would create fire, see what burns and what doesn't from the heat and stuff like that.

**How do you learn all those things?**

By mixing chemicals, um, burning and stick them in a glass and, um, putting a fire under them and heating it up. Test it out on, for the stain ones, stick it on carpet and see what would happen – a little bit of cut-out carpet because it's mum's and she's got heaps of leftover carpet so I just grab a sample and just work on it.

**Do you learn anything from doing all these experiments?**

Yeah, what not to spill. Because if I spill it on, like, if I'm, if you could use it for getting out stains, well I'd learn to use it to get out stains, like I might drop curry or something, and, you know, stain it and use it to take out stain.

**So would you know how to re-make the same mixtures?**

Yes, because I'd just remem...I write it on a piece of paper and shove it in my folder that I've got at home, my experiment folder but not very long ago, yesterday, I was making, I was trying to make moose sort of stuff.

**For your hair?**

Yeah. But I was doing it with soap and water and I was grinding it up and shaking it around and getting out the foam and emptying out the water and then this morning I found it wouldn't work, it turned all into water so I tried shaking it up to see if it would work.

**Oh. So you're quite interested in learning about how to make these sorts of things?**

Yeah, and so I go into my science books that I've got at home.

**Are books useful when you're learning things like that?**

Yeah. For one of my science books it's got how to put out fire with, how vinegar and baking soda put out a fire. Like it's like a, what are those fire things, ...

**Like those extinguishers?**

Yeah. extinguishers.

**Did you try it?**

Yeah.

**Did it work?**

Yeah.

**Gosh. So with all these experiences that you're doing and the chemicals, you're using a book to help you learn and you're also trying it out yourself?**

Yeah. I'm going through a whole bunch of books actually.

**Well, what do you think you'll do next to figure out how to make moose?**

I'll try doing something, using something that won't turn into water or won't turn into what it started off as.

**What ingredients might you use?**

Um, shampoo, conditioner or soap... or something like that.

**Have you looked up any of your books to see what they have and you know if they make moose?**

No it was just a thing that I tried to make up.

**So you learn outside of school as well?**

Yeah.

**Do you learn in any other places?**

You can learn anywhere.

**Okay, so where do you learn, you learn at school and you learn at home?**

I learn anywhere.

**Anywhere you go?**

You can learn anywhere you go.

**How can you help yourself to learn anywhere?**

Well, you try out stuff. Like when we went to America I was seeing what, how the hot water comes out of under the water, I was asking mum and I was shoving a thermometer in and you see this massive hole and I looked in my book and it's the heat from the lava underneath the ground.

**Oh.**

Which creates geysers and stuff like that.

**So you sound like you really enjoy science?**

Yeah, and physics and chemistry. And sometimes I get my mum to help me.

**Do you do anything else outside of school?**

Yeah, I play. Um, I do what I feel like doing as long it's nothing that I'll get in trouble for. I do art work, I might be playing around with Martin and I might be learning something as well...he's my friend.

**So you can play around and learn at the same time?**

Yeah.

**How do you do that?**

Um, ... Like, you could be fooling around with stuff and then you actually look at it and see what's actually happening. Like, we were playing, because Martin was trying to make a rocket out of vinegar and baking soda to make it explode up and because he had a cork of a bottle and he put in two, three, pins I should say, and he shoved in these other pins, the same pins for the ones that go into the cork, and he shoved in more pins and then he shoved on some corks for wheels and then he shoved in vinegar and he quickly shook it around and shook it around and put it on the ground and it wouldn't fly any more.

**When you learn something like that, when you're playing around, how do you know when you've learned? How do you know that you've learned?**

Because you try it yourself and you keep going with it, you just remember it.

**Okay.**

Also it could be helpful for the, like we were fooling around with pressure, because, for my science fair project, because the science fair is coming up soon so we were playing around.

**When you know that you've learnt something like when you're mucking around, is that the same sort of knowing when you've learnt something at school?**

No, it's way different.

**Is it? How is it different?**

Because you're, well at school some of the time it's boring and some of the time it's fun and whenever you're at home it's always fun because you like doing it because you can just give up on it whenever you like – so if it's boring you just say, I don't want to do this anymore and you just give up on it and do something else.

**But you can't do that at school?**

No, you have to do it otherwise you'd get a detention or something like that.

**So you prefer learning when you've got a choice whether to do it or not?**

Yeah, and it's fun.

**So at school how do you know when you've learnt something?**

Um, by remembering it for a test and getting asked a question and knowing that you've learnt it, knowing that you can answer it.

**So answering things is important?**

Yeah.

**Right. Who knows first whether you've learnt something, is it you or the teacher?**

I'm not quite sure. Probably the children, us.

**Why is that?**

Because the teacher can't be with us all the time to know if we've learnt something. Like at home he doesn't know that we've learnt something.

**Okay.**

And we do, and he doesn't or she doesn't .

**Yeah. So how does the teacher find out if you've learnt something?**

Questions, tests, asking

**What do tests do, then?**

They declare what age you're at, if you know that you've learnt or that you've learnt something and ..... yeah, that's it.

**So do you ever test yourself or do self-assessment, so you grade your own work?**

At school, when we're doing home samples we have to evaluate ourselves.

**Okay, can you tell me about that?**

Well, the teacher gives us what we have to evaluate and we get a little sort of a grid with three marks on it. Three points going up in a straight line underneath it and you, and the half-way mark is when you think well you're all right but you could do better, you'd cross it there, and if you think you're superb and you've done it perfectly you'd go to the very, very end and if you go to the very, very start, well then you'd be pretty much not good, you wouldn't have learnt anything.

**So have you done one of these yet?**

Oh yeah, we do them all the time for home sample.

**Okay, so how have you graded yourself?**

All right, I could do a bit better or I'm on my way to finish.

**Then does your teacher mark it or grade it?**

After, yeah. Afterwards he'll write a comment or give us a sticker or ticks or something.

**Okay. Well, what's more important then, your grade or the teacher's grade?**

For the kid the teacher's grade, for the teacher probably the kid's grade.

**Can you say that again?**

Probably for the teacher it would be the kid's grade, and probably for the kid the teacher's grade to know what other people think.

**Oh that's interesting. Why would for the teacher it be more important that they look at the kid's grade, do you reckon then?**

To see if they're giving themselves a hard time or to see if they want, or what they're at and if they – it just depends what you do. For handwriting, it would be because you maybe think it's better but the kid maybe thinks it's not and bring up their hopes or something, so they think it's better.

**And yet for the kids you think it's the teacher's grade?**

Yeah, because, um, we want another opinion to see if we're doing all right. Because we can't really just tell by ourselves, we need someone else to ask or something.

**How come you need a second opinion?**

To know if..... to see if we're really there or if we're not.

**Because you might think you're there?**

Yeah, but the teacher might think you're not or you're better. So he'd say 'you're right, you can do better', but then he might say 'you're wrong, you are doing better than what you grade yourself', or something like that.

**Do you do that self-assessment in any other place?**

Apart from home sample, well, when I'm at home I sort of just, sort of think it's all right. I sort of do it in my head.

**Okay, how do you do it in your head, what sort of things ....**

Well I think that I might have a 5 out of 10 or something like that. To think that I've actually come up with something.

**How do you feel when you do that?**

When I come up with something?

Yeah.

Choice! I think I'm... I try and make more of it and do more of it.

**So how did you say you felt?**

Choice.

**Do you ever feel like that at school?**

If I do something really, really, really good and I beat other people.

**So do you have to beat other people before you can feel choice?**

No. If you think you've done your hardest and you're really really pleased with yourself you can feel choice.

**Do you think it is important to beat other people sometimes?**

Yeah.

**Why is that?**

To make you pleased with yourself. Because John, he's another boy in our class, we're making tepees, and he made this real choice one, that had bow and arrow, and it was perfect and he got a 20 or something out of 20 and he felt real good because he beat everyone else. Because we only, well, I haven't been graded yet but no one else got 20 out of 20.

**Do you think he was pleased because of the high mark or because he liked his tepee?**

Because, well, he beat other people and he's successful and he's happy with his tepee.

**So your one hasn't been evaluated yet?**

No.

**What do you reckon that will get?**

Well, my one, it's only out of 10 because, um, mine's out of 10 because if we bring it on Monday it will be out of 20, but if you bring it today it would be out of 10.

Okay.

And I think I'll get about a 5 because it's too bright and it doesn't have the sticks out the top.

**So why didn't you put the sticks out the top?**

Because I didn't have enough time.

**And why is it too bright?**

Because I couldn't get any dark paints that go on material.

**Did you paint it?**

Yeah.

**At home?**

Yeah, with material paints.

**Oh, and what colour did you use?**

I *had* to use highlighter yellow, highlighter green and highlighter orange.

**Because they were the only colours there?**

Yeah.

**But you know they're not the sort of colours you think should be on it?**

No, they should be normal red, normal blue, black, normal orange/yellow.

**So do you think your score will be lower because it's not the right colour?**

Because it's, it's not like a real tepee – it's meant to be like a real tepee and Indians used to use dark colours not, like, bright, bright, bright colours.

**Fluorescent?**

Yeah. Highlighter.

**So you know already, before it's got graded that it will be marked down because you've used the wrong colour?**

Yeah, because it's not right. Like with this girl in my class, she just used felt instead of other stuff like I used, but then again she had a different colour of material, she had white and I had black and I couldn't get any other colours and I can't draw over it with felt because of the glue so I had to use them.

**Does your teacher know that you understand it's not the right colour?**

I don't know.

**Would your teacher think that maybe you didn't know what colour to use?**

I don't know.

**It's kind of interesting for me because you know that it won't get a grade because it hasn't got particular points.**

Because we were given a sheet that said what you'd get higher points with .

**Oh, so ..**

Like we'd get one for if it was steady and it wouldn't blow over, and there's this girl and if you just touched it, it would fall over and she got marked down for that, and my one, well, it says it has to have a hole up top – my one's got a hole but it doesn't have the sticks to hold the hole open. And it said background, for, like, tepee bows, arrows, tomahawks, things that stretch the buffalo skin and stuff like that.

**So did you follow through that?**

I tried to, but my colours, I tried to go the closest colours and materials but something that would probably feel like buffalo skin and some of them used leather, some of them used material, someone used wrapping paper, some just used cardboard and made their whole tepee out of cardboard.

**So what was your one made out of?**

Material and paper.

**Okay.**

Paper on the inside and material over it.

**Does it worry you what you get graded on, how you get...**

For some stuff, like the tepee, it doesn't really matter.

**Why?**

Well, you don't really need to know how if you're going to make a tepee when you grow up because there's houses – you're not going to exactly live in a tepee when you grow older, so you don't really need to know that, so you don't really care about that. And for stuff like wood work and metal work and that sort of stuff, that you really need to know, yeah.

**So if you don't think you're going to use it later on, you don't care what sort of grade you get?**

Yeah, unless you really, really like it and you wish that you could get a better mark.

**Oh. Do you ever wish that?**

Sometimes.

**Why do people wish for better marks?**

So then they'll get more friends and think they're better and go up to the top.

**Okay so is that where you get your friends?**

Yeah, most of the time.

**Can you explain that to me a bit?**

Um, well, some friends like you for who you are, and some, well, for what you are – for what you do and how good you do it. For John, well, he's heaps choice at drawing, making stuff, stuff like that, and, well he's got, his friends usually ask for pictures and models. Because when we're doing in the playground, he made this heaps choice model and he actually, when we have to do half now, well he'll take way over time and we're only meant to do it within half an hour.

**So what about the people that go for the high points? How does that work out with friends?**

Well, they think they're better because they get higher points, so they'd try and be friends and they'd have to go, well, I'll have you because you've always been a friend and, well, you're just coming in because you just want pictures, and you'd have to know if you want them or not for friends.

**So you're aware of each others marks or grades?**

Yeah, well, usually we have a hand around and our class will be in a big circle like this, and Mr Jones will be in the red chair, like, say that there's a red chair and we'd be sitting down on the ground and we'd pass our books past everyone so we'd all see the marks.

**Oh I see.**

So we'd all see the marks of everyone, unless you sat before Mr Jones and you wouldn't really see the marks.

**So are you interested in knowing what other kids get?**

Sometimes.

**How come?**

Well, ..... I don't know but I just am ...curious.

**So why would you be curious about 'oh, so and so got that' and 'someone else got that'?**

So then, like, say they got 1 out of 10 you could really laugh at them unless you got a higher point, if you got lower, well then they'd laugh at you. So you can get some humour.

**So is it quite humorous if you get a low mark?**

No, they'd just get smart and say you're dumb and stuff like that.

**I wonder how that would make those people feel?**

Pretty stink.

**So yeah. Are grades important?**

Sometimes.

**What would be the most important one for you?**

Well, it would probably be maths because I hope for the future that I'm going to be a pilot, and you really need to know your maths to be a pilot, for how far you're going, how much petrol you need, um, radars, you'd have to know geometry and stuff like that.

**So that's really important for you because it's to do with your future?**

Yeah, because if you, well, my sister she wants to be a horse rider and, well, she doesn't really need to know anything about any subjects at school, unless they're doing a project on horses or something.

**Oh I see. So knowing that maths is really important to you, when you go to a maths class do you work harder or?**

Yeah, you really go for it, you really try.

**Really. Okay.**

So you want to help your future and get what you want to be.

## Appendix H: Information sheet: Phase Two



**MASSEY  
UNIVERSITY**

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**FACULTY OF  
EDUCATION**

**DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY**

- Title of research:** Learning and self-assessment:  
The student's point of view
- Researcher:** Roseanna Bourke  
MEd (Otago) PGDipEdPsych, Adv, DipTchg
- Contact details:** Department of Educational Psychology, Massey University,  
Phone 3569099 x7527
- Research supervised by:** Dr. Janet Burns and Dr. Alison St. George  
Massey University

### What is the study about?

The aim of the study is to explore how students view learning and assessment, and what factors influence the learning process. This research is part of my doctoral study and is in the second phase. Phase One was conducted in 1996 and involved interviewing approximately thirty year 7 students on their understanding of learning and self-assessment. These interviews have been transcribed and analysis has begun. Phase Two of the study involves observing a group of year 8 students in learning situations at school and in out of school clubs or activities. These students were selected because they were interviewed in 1996 and are situated within one classroom. They have been chosen as holding representative views of learning held across the students interviewed. This phase involves indepth observations and conversations with seven students. The parents of these students will be invited to be interviewed. This research has been designed with the Massey University Code of Ethical Conduct for research involving people, and has the approval of the Massey University Ethics Committee.

### Rights of participants:

All students, parents, teachers and others who take part in this study have the following rights:

1. The right to not answer any particular question, and to withdraw from the study at any time.
2. The right to turn off the tape (if the interview is being audiotaped) at any stage during the interview.
3. The right to ask any further questions about the study that occur to the participant during their participation.
4. The right to provide the researcher with information on the understanding that it is completely confidential to the researcher. All information collected is confidential and it will not be possible to identify individuals in any reports that arise from the study.
5. All tapes will be destroyed at the conclusion of the research process.



## Appendix I: Information sheet for parents: Phase Two



**MASSEY  
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**FACULTY OF  
EDUCATION**

**DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY**

**Title of research:** Learning and self-assessment:  
The student's point of view  
**Researcher:** Roseanna Bourke  
MEd (Otago) PGDipEdPsych, Adv, DipTchg  
**Contact details:** Department of Educational Psychology  
Massey University  
Phone 3569099 x7527  
**Research supervised by:** Dr. Janet Burns and Dr. Alison St. George  
Massey University

I am currently undertaking a study on how years 7 and 8 students within an intermediate school setting view learning and self-assessment. Research indicates that the way students view learning affects the way they approach learning tasks, and that learning exists within a number of contexts in the students' lives. I have interviewed a group of year 7 students about their ideas on learning and self-assessment. Your child was part of this group and has been selected to take part in Phase Two of this study if you and your child are agreeable.

Your child \_\_\_\_\_ has been selected because of his/her learning activities outside of the school setting, and because of his or her views on learning in general. During Phase Two of this study, I am interested in exploring these ideas in more depth which including observations in the classroom, playground, and outside clubs. It is not intended to be an intrusive exercise, and I will work with the student at times convenient with the teacher and student. It will involve one day per week during the school year. As well as working with \_\_\_\_\_ in the classroom, I would like to complete an observation during \_\_\_\_\_. This would only take place with the approval and permission of the teacher and other students involved. I would also like to interview you about your child's learning during this phase of the study.

There will only be seven students involved in this final stage of the study. I would be happy to visit you to explain this further. Please send the cut-off slip back to the teacher with your child if you are interested in proceeding with this, and I will send you out a consent form for you and your child.

Many thanks for considering this request,

Roseanna Bourke

---

Please tick the box to indicate your response:

YES, I am interested in receiving more information and a consent form for my child to take part in this phase of the study.

NO, I do not want further information.

SIGNED: \_\_\_\_\_



## Appendix J: Parent/caregivers consent form: Phase Two



**MASSEY  
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**FACULTY OF  
EDUCATION**

**DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY**

**NAME OF STUDY:** Learning and self-assessment:  
The student's point of view

**RESEARCHER:** Roseanna Bourke, MEd (Otago) PGDipEdPsych

I have read the information provided in the letter about this study. My questions about this study have been answered to my satisfaction, and I understand I can ask questions at any time.

I also understand that my child has the right to withdraw from the study at any time, and decline to answer any particular questions in the study.

**I give permission for Roseanna Bourke to observe and talk with my child \_\_\_\_\_ during the 1996 school year about his or her understanding of learning. Roseanna can visit my child during out-of-school activities (drama, sports, music etc.) at a time convenient for me and my child.**

**I am prepared to talk with Roseanna about my child's learning. I understand the interview between Roseanna and myself will be audiotaped and will be used only for the purpose of this research.**

**Child's name:**

**Child's date of birth:**

**Class Room Number:**

**Name of person completing the consent form:**

**Relationship to child:**

**Signature:**

**Date:**



## Appendix K: Student consent form: Phase Two



**MASSEY  
UNIVERSITY**

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Facsimile 0-6-350 5635

**FACULTY OF  
EDUCATION**

**DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY**

**NAME OF STUDY:** Learning and self-assessment:  
The student's point of view

**RESEARCHER:** Roseanna Bourke, MEd (Otago) PGDipEdPsych.

I have read the information provided in the Information Sheet about this study. My questions about this study have been answered to my satisfaction. I understand I can ask questions any at time.

I also understand that I have the right to withdraw from the study at any time, and decline to answer any particular questions in the study. Neither my name nor identifying features will be used in any report that results from this study.

**I give permission for Roseanna Bourke to talk with me during class time, and visit my home, sports, drama, and cultural or other clubs at a time and day that I suggest. I understand the observations and interviews will only be used for the purpose of this research.**

**Student name:**

**Class Room Number:**

**Signature:**

**Date:**



## Appendix L: Teacher consent form: Phase Two



**MASSEY  
UNIVERSITY**

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New Zealand  
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Facsimile 0-6-350 5635

**FACULTY OF  
EDUCATION**

**DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY**

**NAME OF STUDY:** Learning and self-assessment:  
The student's point of view

**RESEARCHER:** Roseanna Bourke, MEd (Otago) PGDipEdPsych

I have read the information provided about this study, and my rights as a participant. My questions about this study have been answered to my satisfaction. I understand I can ask questions at any time.

I also understand that I have the right to withdraw from the study at any time, and decline to answer any particular questions in the study. Neither my name nor identifying features will be used in any report that results from this study.

I give permission for Roseanna Bourke to observe target students in my classroom during the 1996 school year, and to interview me during the year. If the interview is audiotaped it will be used only for the purpose of this research. I have the right to turn off the tape during the interview if I need to.

**Teacher's name:**

**Class Room Number:**

**Signature:**

**Date:**

..



## Appendix M: Information sheet for parents of students in Room 0



**MASSEY  
UNIVERSITY**

Private Bag 11 222  
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Telephone 0-6-350 4533  
Facsimile 0-6-350 5635

**FACULTY OF  
EDUCATION**

**DEPARTMENT OF  
EDUCATIONAL  
PSYCHOLOGY**

### **Learning and self-assessment: A student's point of view**

**Researcher:** Roseanna Bourke  
MEd (Otago) PGDipEdPsych, Adv, DipTchg

My name is Roseanna Bourke. I lecture in the Department of Educational Psychology at Massey University, and am undertaking the research outlined below as part of my doctoral degree. I have been a classroom teacher and taught at the intermediate school level for five years. I have also trained and worked as an educational psychologist.

This note is to let you know I will be visiting Room 0 during this year as part of my research project on learning and self-assessment. Your child is part of this class, but is not part of the study, and will not be interviewed.

I am currently undertaking a study on how years 7 and 8 students within an intermediate school setting view learning and self-assessment. Research indicates that the way students view learning affects the way they approach learning tasks, and that learning exists within a number of contexts in the students' lives. I have interviewed a group of up to thirty students about their ideas on learning and assessment and I would now like to follow through with some of these students in a more extensive manner. This means observing and working with students more closely in a number of learning activities within the classroom. This involves my participation in the classroom during some part of a day each week this year.

Your child is in the same classroom as the target students. I have no interest in identifying any students by name or other means in the class and will only be interviewing the target students. I will not be disrupting or taking part in the class and will not hinder the learning of your child. The name of the school will not be used in any report arising from the research.

If you would further information, I can be contacted through the school, or at Massey University (phone 3569099 x 7527).



## Appendix N: Parent interview schedule

I am interested, from your point of view, how you have seen \_\_\_\_\_'s learning take place over the years? What has \_\_\_\_\_'s experience of learning been?

Can you tell me about his/her early years of learning during primary school?

Who have been the most influential people in \_\_\_\_\_'s learning?

What role do you play in \_\_\_\_\_'s learning?

What have you taught \_\_\_\_\_ at home? How did you know when \_\_\_\_\_ had learned that?

What type of things does \_\_\_\_\_ enjoy learning?

Can you tell me something you remember \_\_\_\_\_ learning? How did s/he learn that?

How do you find out or know what \_\_\_\_\_ learns at school? (What role do Home Sample books and parent interviews play?)

Have you noticed whether \_\_\_\_\_ applies learning from school to other situations out-of-school?

What out-of-school activities does \_\_\_\_\_ participate in?

Why do you think s/he is interested in learning ..... (out-of-school activity)?



## **Appendix O: Extract from teacher interview**

**(12.12.1996)**

**(Researcher) How do you know when someone is learning in the class? When you're looking around or when you're walking around the classroom, how do you know someone's learning?**

(Teacher) How do I know somebody's learning? By watching them and, um...well through a number of ways. First of all by observing their behaviour and by seeing the way that they're processing something that I have said or something that somebody else has said, um, in terms of the verbal ... learning verbally. Also by the way that the children are interacting with their text or piece of work that they're doing and seeing them process it, and you can get the...what I call 'ah, ah, you understand' look, and the 'I'm not sure' look, and the way the different levels of processing it. You can see the learning occurring there and in terms of like 'this is what I want you to learn', 'have you learnt it?' then that's done through similar observations and through looking at their work – does that answer your question?

**Yeah are there times when you see that they are actually learning but they don't realise it?**

Definitely. Examples like the maths that we've been doing, and because it's been fun and therefore they, surely they can't have been learning...going doing the dance, different types of sports, some things the children classify themselves as what ... that they classify this must be learning because it's maths and we're sitting down doing this and that's their perceptions of what they're learning. But take it out of that environment and sometimes I think maybe they're not learning, maybe it's different. But it depends, some children are very good at being able to identify what they are learning and different contexts and stuff, and other children aren't, and so I find it important to keep stating that 'yes, you are learning' and 'these are the different circumstances and what have you learnt here?'

**That brings me to the next question which is about providing feedback to students, and I noticed one of the things you do is provide feedback on students while they're working, or as a big group. How do you decide what you're going to say when you're giving feedback?**

I think I have goals myself – what I want them to achieve – and so I think this is the direction that I need to go very carefully in terms of what I'm wanting the children to achieve. Also personal goals for the different child, for each child, and there may be common things amongst the whole class, there may be things where individually I need a child to shift them in their thinking or their state of behaviour from point A to point B, and so when giving feedback it maybe a general thing like that, I might be targeting one particular child but I don't want them to know and so I'll say something generally and hope that they will pick it up. Sometimes I need to be more specific and direct in talking to them. But, yeah, when talking that's generally what I do to give feedback.

**Quite often, the feedback, when they're doing something like project work or when they have something that they have to hand in, is on presentation as well, how important is presentation?**

Um ... to me?

**I guess. What message are you wanting to give the kids about presentation in their work?**

I always call it, um ... when I say 'presentation' what I'm meaning is 'quality'. They need to be giving their very, very best in everything that they do and in terms of presentations, there are simple things that they can do to make their work appear better. I suppose in the future when you see a piece of work, look at it and say, 'oh, this can't have the quality of the next piece of work because it doesn't look as good' and so if you can draw, it depends on what the audience is; or for the target audience for example, this magazine they're targeting it at their own age group and so presentation is important because you want to draw the person in to read this piece of work. And so the children whose writing isn't of the standard of other children's writing, try a word processor. For example, Peter, he loves using the word processor because he feels a real sense of achievement because his work looks better and he's got tremendous ideas and tremendous depth and so in that situation presentation is important, other times it's completely irrelevant. It just depends on the situation, it depends on the task that they're doing. But I think simple things like ruling lines and taking a bit of time to make things look reasonable is ... is simple and I think it kind of organises their thoughts. I think it's important to make them take stock of what they're doing but not at the detriment of their learning or what your objective is.

**It's something they can control.**

Yeah, it is and it's something they can quite easily make progress in or they can let it ... it can be chucked out the window.

**Quite often when you are wandering around the classroom or when you're talking to them as a whole group you might ask them a question and someone will reply and rather than saying 'it's right' or 'wrong' you'll use whatever they've said and just keep talking, so you kind of turn it into a conversation. Rather than asking a direct question that just requires an answer you use their answer to then develop the ideas further. So the classroom often becomes like an extended conversation on what they're doing. Do you know what I mean? I'm not sure whether you do that purposely or whether it's the philosophy you have or ... You might not be aware of it.**

I suppose, subconsciously, yes, I think to develop a greater depth and understanding and to get the most out of what the children are saying and sometimes and also get the children to take risks, um... making approximations as an answer. And I also agree that if a child is completely wrong, then 'no, that's not quite right, think about it in this direction', and so you're getting around it like that, but I never want to... I really believe that there's so much information that the children have, so much they want to contribute that if I guide it too much or if I say 'this is how it's going to be', there's so much you cut. In actual fact, the children have different ideas and different things that they can contribute and if you say that 'this is it' then they miss out and other people miss out on some of the things. So I think it's important to grab as much as you can and ask the children, 'well, what do you think about this?' and we start building up ideas, and it extends me and it extends them and it promotes thinking about the situation.

## Appendix P: Example of observation notes: Phase Two

### OBSERVATION EIGHTEEN

DATE: 12.6.97

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**Day/time:** Thursday morning (9.30 a.m.–12.10 p.m.)  
**Weather:** Sunny and calm  
**Location:** School - classrooms (x2) and hall  
**Student focus:** Jane, Deb, John, Helen, Marie  
**Purpose:** Learning and performance based assessment/learning  
**Activity:** Counsellor's meeting, production, Theatre sports

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I arrive at the school at 9.30 a.m. and proceed to the classroom. The students are not in their class but I see Chris in the hallway and ask him where they are. He says they are in the hall doing dancing. I go in there and find two classrooms (Mrs. Henry's and Mr. Jones' class). They have finished practising for the coming dance session in July. Mr. Jones says I have missed a great episode with John really getting into the swing of things.

The classes have finished and are ready to leave to allow the next two classes in. Some of the girls were told to stay behind to sort out male partners from the next two classes. I see Deb, Helen and Marie are among this group so I stay and watch. The other two classes come in along with the two teachers. The Deputy Principal arrives. He informs me he is going to teach them all square dancing to the music "She'll be coming round the mountain".

He shows the classes how to get into a group of 8. "That's an 8 set or a set of 8". He asks for volunteers to group the students into the correct order. He shows them how the girl stands to the right of the boy.

He tells the girls to stand over one side of the room and the boys to stand over the other. He then tells the boys they must ask the girl to dance and stipulates it must be done properly. He asks them what they must say. One boy suggests "May I have this dance?" There is much talking in general and the noise level is quite high. The Deputy Principal tries to maintain control and elaborates on the boy's answer. He says "May I have the pleasure of this dance?" He then says "shshshshs" to the group in general. He then asks the girls what their reply will be. A boy offers a suggestion "Yes I may".

I watch the three girls walk aimlessly around while the rest of the two classes quickly sort out their partners and get into groups of 8 as directed by the teacher. Marie, Helen and Deb leave with a group of about 6 other girls. The teachers do not seem to notice.  
*How did they get away with leaving?*

9.50 a.m. I wait a minute while the groups are now formed and the Deputy Principal is showing them the first movement. The girls have still not returned so I decide to leave and head for the classroom. The students are not in the class but in Mrs Henry's room where they are watching a video clip of Animalia.

9.53 a.m. I look around the room and see the girls have returned to this room. Peter and Chris are also in this room. All students seem to be watching the video animatedly. The images of the show are put to music and it is fast moving and interesting. It ends with

the name of their Syndicate Team and then 1997. Mrs. Henry is very talented regarding video production.

I ask Jane when the video is over why she came back. She said they did not like the dancing. She said there were two classes already there and their class had finished. I pursued it as she explained it as if they had finished. I asked "You didn't want to stay?" She laughed and immediately replied "Yeah!!"

Theatre sports is underway with Mrs. Henry introducing it to the class. She explains it for the year 7 students and said the year 8 students (Form 2) will remember it from last year. She asks who can remember "Death in the house..Form 2s will know what it means". A gasp goes through the class. The year 8 students want to demonstrate it and Mrs. Henry asks for volunteers who know the story and feel confident to act it out.

Mrs. Henry and Mr. Jones choose a Doctor, child, parent, and 2 undertakers. *I think sometimes Mr. Jones chooses on the basis of who is in my study so that I get the opportunity to observe them. For example, this time he chose Deb as doctor, and John as one of the undertakers.*

The students seem to know what to do once chosen. Deb is a doctor and there is another boy (an undertaker) beside her. He says to Deb "This is a scriptless scene eh?" and she replies "Yeah".

When Deb starts acting she speaks in a very low voice. *Does she see Drs as male?*

The scene is played over a few times with the same storyline but students are adlibbing. They also change parts after two takes. The general story is that a child asks the parent for a biscuit..eats the biscuit..dies..The parent calls the doctor who arrives at the house and says the child is dead. The Dr then rings the undertaker to come and take away the body.

When John was the undertaker he came into the room and said "Is this the victim?" He went straight through the front door on arriving (i.e., he didn't knock on an imaginary door, and wait to be invited in). The teacher pointed this out as the play was in progress and John got some laughs for this.

10.00 a.m. Mrs Henry says "...and that's death in the house Take 1..Now I want you to change the genre..Run through it as fast as you can".

This time the students' movement and their speech speed up. They did it very quickly. Then for Take 3 they swapped roles. John changed from the undertaker to the son; and Deb changed from the doctor to the undertaker.

They were then asked to run through it again and make it as tragic and slow as possible. The students enjoyed acting and got many laughs from the audience of the two classes. Next they were asked to do a slapstick comedy/routine. Mrs. Henry explained to them that it was something that is nonsense. John still didn't quite get what he was supposed to do in terms of approach and Mrs. Henry gave him some advice. She explained that it was comedy but that things don't happen quite as they should. She said the comedy should be slapstick. John asks "Do I exaggerate it?"

Take 4 occurs. John is the doctor and is asked to visit the son. He explains he can't ..he's too tired...wants to watch the rugby.. has to catch the bus home..etc. The parent

pleads for him to attend so he says "I'll run"....He runs over to the house looks at the child and says "I think she's dead". He laughs. (He also gets a lot of laughs). He looks at the child again and says "She really is dead..I have to phone the undertaker". The undertaker arrives and acts silly. John can't keep him in order and is having trouble getting the undertaker to take away the body. The child acting as the undertaker continues to act silly and for a moment the plot doesn't seem to be moving. John then shouts out "I'll sleep with your wife!"..The undertaker hurriedly removes the body. The teachers (Mrs. Henry and Mr. Jones) clasp their face in mock horror and laugh. The class are in an uproar and are laughing. The teacher, Mrs Henry, then says in mock horror "Thank you boys and girls..now sit down.. John, you look so innocent". Mr. Jones added, "He does".

10.10 a.m. Mrs Henry then introduces another theatre sport. It is a race of any kind with two commentators. She chooses two boys to be commentators and three contestants. Helen is one of the contestants.

Mrs Henry asks the class to choose a task that is done at home. Suggestions include having a bath, vacuuming, cleaning out the rubbish, doing dishes. At each suggestion Mrs Henry asks for more. *It was obvious to me (but I don't know whether to the class) that she was sifting through ideas and wasn't really inspired by any.* Finally they chose vacuuming a room to music.

One boy enjoyed the commentary and Mr Jones gave specific feedback. This had not been done before by Mrs Henry. "Richard, your commentary was very good..you dictated to them what happened and actually slowed down the race. You gave feedback to the contestants to help them through". Mrs Henry says "Yes, that was really good".

There is another race set up with new contestants and commentators. It is a vacuuming race with music on. The contestants have to move to imaginary music as they go. Helen says "Charlie is sucking his pants off"....The two commentators are not very inspiring and seem to try but have little impact. The teacher calls for others to have a go to show how its done. John is chosen as a commentator, and Helen changes from a commentator to a contestant. *John seems to have plenty of opportunities to try out these roles. He's keen and confident but not necessarily the most able. Is it confidence and ability to give things a go that enables him to receive more opportunities than the others?*

When John is chosen one of the students calls out "This'll be good". They had already assessed John's ability before he began based on prior knowledge of John's ability to entertain. *Self fulfilling prophecy for John??*

Mrs Henry asks "What should we do this time?"

One student says " washing dishes". John says "I'm just making a suggestion..could they go a bit slower". He is referring to the contestants as he wants to draw out the race and the commentary. Mrs Henry continues to elicit ideas. I don't think she likes the idea of washing dishes. Students offer more suggestions. these include - cleaning up after the dog, milking the cow, washing clothes. They decide on taking a shower.

The commentator starts before the race begins. He says how Jake has set booby traps for the other contestants. When the race gets going he says "Jake has fallen into one of his own booby traps". The contestants (i.e., Jake) tend to follow the commentators as if

they are instructions. In this way the commentators are helping the contestants with ideas on how to act throughout the race.

John enjoys commentating and begins shouting over the other commentator. They are both suggesting different things for the contestants. John gets a clap for his efforts (the others did not receive a clap in the previous examples).

The teacher moves to another type of theatre sport. This is where there are two people sitting down – one is interviewing the other. Another two students are sitting behind them and are the hands and arms. They slide their arms through the two seated who have their hands behind their backs. The two who are seated are given roles. They are Paul Holmes interviewing Rachel Hunter.

Martin is Paul Holmes. Meanwhile students from another class run through the corridors beside the classroom in a loud way. Mr. Jones leaves the classroom and goes out to them. Martin had difficulty adlibbing and did not appear to be confident in this role.

10.25 a.m. The bell goes and the students go out for morning interval. I speak briefly to Mrs Henry and then go to the staffroom. I am told that after morning interval there is gymnastics practice and the councillors meeting. I explain that I will go to the councillors meeting first.

I speak with the principal over morning break. He asks how my work is going and jokingly asks whether I am available to take the rugby at lunchtime. He tells me that the forthcoming intermediate school games (Super 12??) involves a number of sports and that it is very competitive. This year one of the schools has asked that two boys can be part of the girl's netball team. The principals are needing to decide what ruling should occur in this matter. I tell the principal it is good for us to shake our assumptions now and again because it makes us question our initial decisions. He agrees but wonders though whether this will have the effect of disadvantaging the girls in that school because the boys were chosen on merit. He wonders whether some girls will not have the opportunity to take part because of the competitive nature. I agree and wonder whether girl teams from other schools involved in netball will be equally disadvantaged.

10.50 a.m. Councillors meeting is held in the ESOL room. There are 12 students and the teacher present. The students are seated in a semi circle and there is a table where three students sit. These are the president, treasurer (both male) and secretary (female). The secretary is taking the roll and makes notes throughout. John is not there. I ask the teacher whether he usually turns up. She says 'yes', and asks whether I want a messenger to collect John. I indicate no as I feel it would be interfering with the procedures, and the reasons why John did not attend. The councillors discussed planting trees, mufti days, photos, rehearsals for roadshow, and the need for a PE hat. One boy suggested a beanie in the school colour of plain blue. He thought it would be a good idea because when the teams go away in winter they usually come back with flu or a cold. He explains that most people who went to Hawera came back sick. He then explains to the group that "we lose 90% of our body heat through our head".

One student asks "Can't we just wear any hat?" Teacher asks "How many think it is a good idea?" One boy puts up his hand then others follow.

Other things discussed include: lunches, diving board needs to be fixed, more mufti days, request for long pants to be worn in Winter. Teacher tells the group that they know the rule for mufti is one day per term max. They realise this and decide not to take that idea to the Principal. They discuss the rules on tackle rugby and one child said you can play only if a teacher is watching. Teacher responds: "Yes, if a teacher is supervising". *She changed the word watching to supervising.*

10.57 a.m. The meeting is closed. The teacher asks at the close of the meeting whether they want their funds to go 50% to Barnados, or 25% to Barnados and 25% to Cancer society. She explains she has a letter from Cancer society. The students debate this and wonder whether it is worth splitting up the amount. In the end decision is made to give half and half. (25% split). 50% then goes to school funds??

John still had not arrived.

11.00 a.m. I go over the hall where the Syndicate group is involved in P.E display practice. As I arrive in the hall Susan (a student in another class) sees me and races off to Councillor meeting. I tell her it is finished. I see John is sitting in the seats. Had he forgotten or was he required for the display? Mrs Henry is talking to the four classes. One boy at the back of the seats gets a detention. She then gives out another one to another boy. She says "2 people who want to be different – we're not coming to your level". She then explains to the group that they must look uniform. All girls with long hair to wear their hair French braided down the back and off the face. She said this would look very effective as a group. She then asks "What do you notice that's not here this time? What's different?" Some students put their hands up to answer. I'm not sure what is missing and do not hear the answer. Mrs Henry then asks why they (?) are not here. John explains that "We don't need them". Mrs Henry asks "What will we use?" Marie replies "The white line".

11.06 a.m. The students come down from the seats to get into position. I see Peter and ask him what was missing. He explains to me that they had a line of mats to help them know where to position themselves. I then understand.

11.28 a.m. One group is given instructions. Others are waiting at their bases. A period of 20 minutes passes. The students who are not being attended, to start to muck about. Some seem tired. Others are playing with balls, hoops and ribbons. One teacher yells out "You'll pay for it if you break it" referring to some piece of equipment. The whistle blows and there is a general quiet.

"We are close to having this finished", explains Mrs. Henry.

One group, using ribbons, is working with Mr. Jones and he refers to this group as 'ribbons'. Another group using hoops are being referred to as 'hoops'. He asks: "What happens, ribbons, is you go around the outside. The hoops will have to go through very fast." Two of the teachers have different ideas and discuss it between them before they clarify it for the students. Chris is fighting with the boy beside him.

The theme song of the Syndicate group starts up and the teacher begins to sing. Mr. Jones comes over to where I am standing and suggests I should move over to the other bleaches and climb to the top for the best view.

I ask him how long the final version will be. He thinks about 6 minutes. They practise right through and then refine parts before going through it again. Mr Jones "We should

now go from woe to go and we've just about done it...ribbons, you have my permission to go right around there".

The skills used by the individual students throughout, for example, cartwheels, trampoline, somersaults, ball skills, seem to be based on the skills the students have already or previously acquired from other settings (e.g., gym classes, ballet, jazz, sport). *What is the teachers' role then? What are the students learning? Are they learning how to use their skills in other settings? Are they learning to listen? follow directions? Are the teachers assessing them on the basis of doing what they are told?*

Mr Jones comes up to where I am sitting. He says "This is my baby" referring to the production. He seems excited at the final impression. I ask him how many students are represented here and he said 120. He explains the music is songs representing their team philosophy. He then explains he likes the music of the group Queen, which is also represented. I take a closer listen to the music at the next run through to write down what the message seems to be, if it is representative of the Team. Mr Jones leaves to give them a final run through.

He says "Harriet, you've got to get your timing better" and then explains what the implications are if she doesn't get her ball thrown at the right time.

I listen closely to the music this time. The music includes words and ideas about:

- one vision;
- you gotta be cool, you gotta be kind;
- one dream;
- got a lot of love between us..hang on..hang on..to what we've got;
- you got to give it your best; and
- the Syndicate theme song

He explains to the ball group what happens if they don't wait for Gregory (another student) to give them the cue to throw their balls. "Your throws must be perfect..then they can throw it back..throw to their chest" One student says "Sometimes it doesn't make it".

12.10 p.m. The classes go out to lunch and the teacher stays behind to discuss the production with me.