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## Conceptions of learning held by students in the lower, middle and upper grades of primary school

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**CONCEPTIONS OF LEARNING HELD BY STUDENTS IN  
THE LOWER, MIDDLE AND UPPER GRADES OF  
PRIMARY SCHOOL**

By

**Carole N. Steketee**

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of

**Bachelor of Education with Honours**

Faculty of Education  
Edith Cowan University

Date of Submission  
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## USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

## ABSTRACT

Conceptions of learning are the fundamental beliefs and ideas people hold about their own learning. To a large extent, these understandings determine the way in which learning tasks are tackled and, ultimately, the outcome of learning experiences.

Using a phenomenographic approach, this study explored the conceptions of learning held by six students in the lower, middle and upper grades of primary school. Data collected from a series of individual in-depth interviews resulted in the identification of six distinctly different conceptions of learning.

At the most basic level, the students articulated their understanding of learning in a very general sense. This level is a unique finding of this study and has been termed Generic Learning. At the next level, students associated learning with being physically involved and Doing Things. As they progressed to more advanced understandings, the importance of Knowing More Things and Knowing Harder Things about their world was evident. Making sense of material was characteristic of the two final and most sophisticated conceptions which were labeled Searching for Meaning and Constructing New Understandings.

These six categories show that primary school students perceive learning in a variety of ways. Therefore, teachers must not assume that all students perceive learning homogeneously, but rather endeavour to understand the differences and the implications these differences are likely to have on the way students approach their own learning. This knowledge will enable teachers to develop improved teaching methods that will facilitate learning, whatever their students' conceptions of learning may be.

## **DECLARATION**

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

**Signature** \_\_\_\_\_

**Date**

15 / 5 / 96

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## TABLE OF CONTENTS

Abstract	iii
Declaration	iv
Acknowledgments	v
Definition of Operational Terms	viii
<b>Chapter One</b>	<b>Introduction</b>
1.1	Introduction 1
1.2	Background to the Study 1
1.3	Purpose of the Study 2
1.4	Significance of Study 3
1.5	Research Questions 6
1.6	Chapter Review 7
<b>Chapter Two</b>	<b>Review of Literature</b>
2.1	Introduction 8
2.2	Phenomenography 8
2.3	Adult Students' Conceptions of Learning 10
2.4	Secondary School Students' Conceptions of Learning 13
2.4.1	Cultural Differences in Conceptions of Learning 15
2.5	Preschool Students' Conceptions of Learning 17
2.6	Discussion of Literature Review 19
2.7	Chapter Review 22
<b>Chapter Three</b>	<b>Theoretical Framework</b>
3.1	Introduction 23
3.2	Overview of the Theoretical Framework 23
3.2.1	Theoretical Framework 24
3.3	Conceptual Framework 27
3.4	Theoretical and Philosophical Assumptions 30
3.5	Chapter Review 32
<b>Chapter Four</b>	<b>Method of Investigation</b>
4.1	Introduction 33
4.2	Ontological & Epistemological Assumptions 33
4.3	Literature on Methodology 34



4.4	Research Design	36
4.5	Subjects	37
4.6	Ethical Considerations	38
4.7	Data Collection	38
	4.7.1 Pilot Study	38
	4.7.2 Procedure	39
4.8	Data Analysis	41
4.9	Methodological Cautions	46
	4.9.1 Intrinsic Adequacy & Impartiality	46
	4.9.2 Replicability	48
	4.9.3 Extrinsic Adequacy	49
4.10	Chapter Review	50
<b>Chapter Five</b>	<b>Results and Discussion</b>	
5.1	Introduction	51
5.2	Findings	52
5.3	Overview of the Discussion	65
	5.3.1 Discussion	66
5.4	Educational Implications	75
5.5	Chapter Review	80
<b>Chapter Six</b>	<b>Conclusion</b>	
6.1	Introduction	82
6.2	Summary of the Study	82
6.3	Limitations of the Study	85
6.4	Recommendations for Further Research	86
<b>References</b>		88
<b>Appendix A</b>	Letter to Parents	95
<b>Appendix B</b>	Informed Consent Form	96
<b>Appendix C</b>	Observation Notes	97
<b>Appendix D</b>	Interview Schedule	101
<b>Appendix E</b>	Interview Transcript	103
<b>Appendix F</b>	What and How Sub-categories of Generic Learning	110

## DEFINITION OF OPERATIONAL TERMS

### Learning

Learning is a cognitive process that occurs when the meaning an individual has given to a particular phenomenon changes. This change in meaning can be interpreted as the achievement of a qualitatively higher level of understanding (Pramling, 1983, p. 34; Woolfolk, 1990, p. 160; Candy, 1991, p. 249).

### Conceptions of Learning

Conceptions of learning refer to the personal beliefs and assumptions people have about their own learning. These beliefs are thought to influence the way in which people approach their learning (Candy, 1990, p. 36).

### Approaches to Learning

Approaches to learning are derived from a combination of the intentions learners have in relation to a learning task and the strategies they adopt to complete it. Biggs (1987) has identified three main approaches to learning.

A surface approach involves the use of rote rehearsal strategies, with little emphasis placed on strategies that will enable the learner to understand the material. The intention of the surface learner is to expend the minimum amount of time and effort that is needed to complete the task.

An achieving approach involves the use of systematic organisational strategies. The intention of the achieving learner is to attain high grades and maintain top academic positions in the class.

A deep approach involves the use of high-level cognitive strategies. The intention of the deep learner is to search for the meaning inherent in the learning material. This motive reflects a genuine interest in learning.

### Metacognition

Metacognition is considered to involve two separate but interrelated phenomena, (a) awareness about cognition, and (b) regulation of cognitive behaviour (Brown, Bransford, Ferrara & Campione, 1983). In this study, the term 'metacognition' is mostly used in relation to the first phenomenon. In this context, it is described as a student's awareness of the skills, strategies and resources needed to perform learning tasks effectively.

### Knowledge

In the context of this study, knowledge refers to the mental construction of meaningful schemata which have been stored by an individual. There are times, however, when the term has been used to represent isolated facts and pieces of information. This occurs mainly in relation to the participating students' personal descriptions of the term.

## **INTRODUCTION**

### **1.1 Introduction**

Chapter One outlines the background factors that are integral to this investigation into the conceptions of learning held by students in primary school. The nature and fundamental importance of conceptions of learning are described, followed by the significance and purpose of this study. The chapter concludes with the presentation of the research questions which guided the study.

### **1.2 Background to Study**

Learning is a central part of our lives. It is embedded in our daily existence to such an extent that its meaning is often taken for granted and assumed to be the same for everyone. Svensson (1979), however, contends that the phenomenon of learning has not one, but several meanings depending on the interrelationship that occurs between individuals, contexts and cultures (cited in Pramling, 1983, p. 12). In other words, an individual's perception of the term 'learning' is dependent upon the context and the culture within which he or she experiences it. In light of the fact that individuals, contexts and cultures vary considerably, one can only assume that the meaning people assign to the phenomenon of learning will vary too.

Researchers have begun to recognise the different ways in which people understand learning (Perry, 1970; Säljö, 1979; Pramling, 1983; Marton, Dall'Alba & Beaty, 1993; Purdie, 1994). In the field of teaching and learning, these variations in meaning are termed 'conceptions of learning'. More concisely, conceptions of learning represent the

fundamental beliefs individuals hold about their own learning (Candy, 1990, p. 36). They are subjective statements which incorporate the assumptions, rules and conventions that influence the way individuals perceive knowledge, as well as the way they approach learning tasks (van Rossum & Schenk, 1984).

The relationship between individuals' conceptions of learning, and how they approach learning tasks, highlights the importance of identifying conceptions of learning. The significance of this relationship is discussed further in Section 1.4.

Existing literature relating to conceptions of learning has predominantly focused on the conceptions of learning held by adult university students (Perry, 1970; Säljö, 1979; Marton et al., 1993). Conceptions of learning held by secondary school students (Purdie, 1994), and preschool students (Pramling, 1983) have also been identified. To date, no research has been carried out in relation to primary school students' conceptions of learning. Consequently, the focus of this study has been on the conceptions of learning held by this group of students.

### 1.3 Purpose of the Study

The purpose of this study was to identify the conceptions of learning held by students in the lower (aged 5 years), middle (aged 8 years) and upper (aged 11 years) grades of primary school. As the aim was to describe the phenomenon of learning from the perspective of the students, two children from each year level were interviewed twice about their learning. The categories of conceptions of learning identified in the interview data constituted the study's results.

#### 1.4 Significance of the Study

As previously mentioned, researchers have identified a range of ways in which the phenomenon of learning is construed and described by students (Perry, 1970; Säljö, 1979; Pramling, 1983; Marton et al., 1993; Purdie, 1994). A common theme throughout these studies is the varying conceptions of learning held by students are thought to form different levels of sophistication ranging from a basic understanding of learning to a more advanced viewpoint. Some of these results have been placed in a hierarchy in which each level of conception of learning encompasses all of the preceding lower level conceptions of learning (Säljö, 1979; Pramling, 1983; Marton et al., 1993). This means that students who hold higher level conceptions of learning are also aware of the lower levels. Conversely, students who hold low-level conceptions of learning are unaware of the higher levels.

The notion that conceptions of learning represent different levels of sophistication reinforces the need to further explore this area, particularly in light of van Rossum and Schenk's (1984) identification of a relationship between conceptions of learning, approaches to learning and learning outcomes. Their findings have suggested that an individual's conception of learning will influence his or her approach to various learning tasks, which in turn will affect the quality of the learning outcome. To fully appreciate the implications of this relationship, it is necessary to briefly explain what is meant by approaches to learning.

An approach to learning is a combination of a student's motive for tackling a learning task and the strategy he or she adopts to complete it (Biggs, 1987). Three main approaches to learning have been identified; surface, achieving and deep. The surface approach is

adopted by students whose intention is to complete the task and avoid failure. Surface learners typically use strategies that require little time and effort such as rote rehearsal. The achieving approach is adopted by students whose intention is to receive high grades and public recognition. They adopt any number of strategies that will enable them to achieve their goal but are typically noted for their highly organised learning methods. The deep approach is adopted by students whose intention is to extract meaning from learning tasks. They employ high-level cognitive strategies that facilitate understanding.

If, as van Rossum and Schenk (1984) suggest, the type of approach a student uses is influenced by the conception of learning he or she holds, then a low-level conception of learning will lead to a surface approach to learning, and a high-level conception of learning will lead to a deep approach to learning. To complete this relationship, van Rossum and Schenk assert that surface approaches lead to less effective learning outcomes compared to deep approaches which lead to high-level, quality learning outcomes.

The relationship between conceptions of learning, approaches to learning and learning outcomes holds implications for teachers. Because students' conceptions of learning influence the way in which they approach learning tasks, it is imperative that teachers are aware of their students' understanding of learning. In order to facilitate meaningful learning by their students, and encourage students to achieve higher level learning outcomes, teachers must first seek to understand learning from the perspective of their students.

It is also important for teachers to be aware that within one apparently homogeneous class, it is quite likely that students will hold a range of conceptions of learning. As no two

people are exactly alike, it should come as no surprise that many students hold different conceptions of learning, not only from each other, but also from their teachers (Morgan, 1993, p. 55). Teachers' conceptions of learning are also influenced by the context and culture within which they endeavour to teach their students. Consequently, teachers will hold their own conceptions about the nature and meaning of learning.

For each main conception of learning that has been identified, there is a complementary conception of teaching (Biggs & Moore, 1993, p. 24) and, as Chalmers and Fuller note, teachers' conceptions of teaching will affect the way in which they actively teach their students (1995, p. 9). For example, depending on their conception, teachers may teach to facilitate meaningful student learning, or they may focus on the accumulation of knowledge in the belief that the more their students know the better their learning outcome.

Whilst teachers' conceptions of teaching and learning are not the focus of this study, it is important to recognise the implications of a mismatch between teachers' and students' conceptions of learning. Because conceptions of learning relate to approaches to learning, a mismatch between students' and teachers' conceptions of learning may lead to discrepancies in the students' understanding of the goals of lessons and the way in which they believe tasks should be approached. This will result in learning outcomes not intended by the teacher.

Finally, previous research in the area of conceptions of learning has predominantly focused on adult and secondary school students' conceptions of learning (Perry, 1970; Säljö, 1979; Marton et al., 1993; Purdie, 1994). Pramling's (1983) investigation into the



conceptions of learning held by Swedish preschool students is the only known research that has been carried out with young learners. This study, therefore, intended to extend Pramling's work to consider the conceptions of learning held by 5, 8 and 11 year old primary school students. It also added an Australian perspective to the existing body of knowledge in this area that has mostly come from Europe, Asia and the USA (Perry, 1970; Säljö, 1979; Pramling, 1983; Marton, et al., 1993; Purdie, 1994).

In summary, the significance of this study is evident in the implications that come from the relationship existing between conceptions of learning, approaches to learning and learning outcomes (van Rossum & Schenk, 1984). The need to explore students' conceptions of learning is also emphasised by the potential problems that can occur when the conceptions of learning held by teachers and students do not match. Finally, the significance of this study is apparent in view of the fact that no other research of this type has been performed with Australian primary school students.

### 1.5 Research Questions

The principal research question addressed by this study was:

**What are the conceptions of learning held by students in the lower, middle and upper grades of primary school, ages 5, 8 and 11 respectively?**

The following subsidiary questions were also explored as part of the overall investigation:

1. What differences exist in the conceptions of learning held by 5, 8 and 11 year old students?
2. What similarities and/or differences exist between the conceptions of learning held by the students in this study and those identified by Pramling (1983)?

3. What similarities and/or differences exist between the conceptions of learning held by the students in this study and those relating to adult learners?

#### 1.6 Chapter Review

The stated research questions guided the focus of this study, the purpose and significance of which were discussed in this chapter. Further emphasis on the significance of the study is provided in the next chapter as it is discussed in relation to related research and to the study of learning in general.

## **REVIEW OF LITERATURE**

### **2.1 Introduction**

The research which exists in the area of conceptions of learning has focused mainly on adult students' and, to a lesser extent, secondary and preschool students' conceptions of learning. The findings of these studies are presented in this chapter. The cultural differences in conceptions of learning are examined in light of Pramling's assertion that culture and context are important determinants in how children perceive learning (1983, p. 13). In view of the fact that conceptions of learning have developed from research based on the phenomenographic approach (Marton, 1981), a review of literature related to phenomenography is firstly discussed.

### **2.2 Phenomenography**

Phenomenography is a method of research that has generated the majority of information existing today in the area of conceptions of learning. This approach has developed from Marton's (1981) belief that a phenomenon can be described as "the sum of all the qualitatively different ways in which it is seen, experienced and understood" (cited in Bruce & Gerber, 1995). In other words, people's understanding of phenomena is subject to their own personal experiences, and as no two people are exactly alike or share exactly the same experiences, it is to be expected that phenomena will be understood in a number of qualitatively different ways. Therefore, the purpose of phenomenography is to systematically describe people's qualitatively different conceptions of the world around them.

The notion of 'subjectivity' of conceptions of learning was first made apparent in phenomenographic research carried out by Säljö (1979) and later Marton et al. (1993), who described the qualitatively different ways in which adult learners experienced learning. The outcomes of these and other phenomenographic studies (Pramling, 1983; Larsson, 1986; Ramsden et al., 1993) have had significant impact on the way educators and researchers view learning and teaching. These studies have emphasised the notion of learning from the student's perspective.

Traditionally, research into student learning has been oriented towards the teacher's perspective of teaching and learning, as interpreted by the researcher (Säljö, 1979). Whilst useful information has been gained through these studies, phenomenographic research contends that meaningful interpretation of learning must take into account the beliefs, assumptions and idiosyncrasies that inform students' perceptions of learning and the learning environment within which they find themselves (Marton, 1981). After all, it is the student's perspective that "influences the value that is placed on various aspects of any given subject, dictates how new information and insights are integrated into existing frames of reference and directs the learner's approach and strategy in any given learning context" (Candy, 1990, p. 57).

Although phenomenography was not formally known as such until the early 1980's (Marton, 1981), its fundamental principle of exploring the phenomenon of learning from the learner's perspective has been practised since 1970. Perry (1970) and Säljö (1979) led the exploration into adult students' conceptions of learning and paved the way for other research. The most influential studies from this area of research are outlined in the following sections.

### 2.3 Adult Students' Conceptions of Learning

Perry (1970) provided the first insights into adults' conceptions of learning when he conducted a longitudinal study into university students' intellectual development. In this study, Perry concluded that students' conceptions of learning progressed through nine distinct levels during their university careers. He categorised this gradual shift in understanding into the following three qualitatively different stages.

1. Learning as quantitative accretions of discrete rightness:

At the lowest stage, learning is described as the ability to provide the right answers to questions that have been given to the learner by a knowledgeable source (eg, the teacher).

2. Learning as 'figuring out' the right answers:

At the next stage, learning is described as the ability to provide the right answers, but the learner plays a more active role in finding them.

3. Learning as being subject to context and perspective:

At the highest stage, learning is described as being subject to a learner's own experience, perspective and personal commitment. The teacher is no longer seen as being responsible for learning.

(Perry, 1977, p. 140)

Perry's research has been criticised for his use of a homogeneous sample consisting solely of middle-class males (Belenky, cited in Morgan, 1993, p. 65). Despite this limitation, a major implication arising from Perry's work, and one which further emphasises the need to

explore student conceptions of learning, is that, “learning difficulties encountered by students at university may not be due to insufficiencies in ‘processing capacities’ or ‘motivation’, but rather conceptions of knowledge that are at variance with those held by the faculty” (Säljö, 1987, p. 104).

When teachers assume that their own conceptions of learning are shared by their students, they stand to become frustrated and confused. Conceptions of learning vary not only from teacher to student, but from student to student, and because conceptions affect the approaches to learning which are adopted, students often approach tasks in ways not expected by the teacher. This further highlights the significance of mismatching teacher and student conceptions of learning as previously discussed.

Building on Perry’s work, Säljö (1979) identified five distinct conceptions of learning as a result of questioning Swedish university students about their personal understanding of learning. Säljö found that the students’ conceptions of learning varied in complexity and so described them as a hierarchy ranging from basic, low-level understandings, where learning is seen as something that happens to individuals, to more sophisticated views where learning is seen as the result of an active effort on the part of the learner to abstract meaning from material. The five qualitatively different conceptions from lowest to highest are:

1. Learning as increasing one's knowledge:

The lowest level conception of learning is described as an activity by which additions are made to previous knowledge, but no further specifications are given as to the nature of knowledge or the characteristics of the activity of learning.

2. Learning as memorising and reproducing:

The second level conception of learning is described as an activity that is devoted to the memorisation and reproduction of pieces of knowledge.

3. Learning as applying:

The third level conception of learning is described as the accumulation of pieces of information that will be used by the learner as required.

4. Learning as understanding:

The fourth level conception of learning is described as a process of abstracting meaning. The notion that learning is only concerned with reproducing information is replaced by a conception which emphasises that learning is a constructive activity.

5. Learning as seeing something in a different way:

The fifth level conception of learning is described as being subject to the learner's own interpretation of the learning task. The notion that learning is searching for meaning is extended to include the idea that content which is learned should help the learner interpret reality.

(Säljö, 1979)

Levels 1, 2 and 3 essentially define learning as the quantitative increase of knowledge, whereas Levels 4 and 5 define learning as the construction of meaning.

These five conceptions of learning have been identified in subsequent research (Giorgi, 1986, cited in Marton et al. 1993; Martin & Ramsden, 1987; van Rossum & Schenk,

1984; Purdie, 1994). In a recent study with open university students, Marton, Dall'Alba & Beaty (1993) also identified five conceptions of learning similar to those found by Säljö (1979), as well as an additional sixth level.

6. Learning as changing as a person:

The sixth and highest level conception of learning is described as the process whereby the learner grows and changes within him or herself as a result of an experience leading to new understandings and appreciations.

Marton et al. (1993)

The results from Marton et al.'s research support Säljö's (1979) findings that the conceptions of learning constitute a hierarchy through which students move as they progress towards more sophisticated understandings of learning. The additional sixth conception of learning has been identified as the most sophisticated level as it implies that learning is a lifelong process whereby the learner is constantly evolving and changing as he or she constructs new understandings.

The six adult conceptions of learning identified by Marton et al. (1993) are also evident in a study carried out by Purdie (1994) with secondary school students.

#### 2.4 Secondary School Students' Conceptions of Learning

A recent cross-cultural comparison of Australian and Japanese secondary school students identified nine levels of conceptions of learning (Purdie, 1994). The first six levels were similar to those identified by Marton et al. (1993), although Purdie's interpretations varied



slightly. Some of the characteristics Marton et al. used to define particular levels of conceptions of learning were not evident in Purdie's data, even though the overall meaning of the conceptions were essentially the same. For example, the visual metaphor of 'having a view of things' was a prominent feature of Marton et al.'s interpretation of the 'Learning as Understanding'. The students in Purdie's study, however, rarely used this metaphor when describing learning as 'Understanding'.

In some instances, Purdie (1994) extended the meaning of the conceptions of learning identified by Marton et al. (1993). For example, both Purdie and Marton et al. described the conception 'Learning as seeing something in a different way' as a change in the student's way of thinking. However, Purdie found that some students described this conception of learning in relation to their sense of social/moral growth that came with the development of new insights and ways of thinking. This characteristic was not evident in the findings of Marton et al.

Purdie's (1994) research was based on the assumption that the hierarchical structure found by Marton et al. (1993) was correct and so ranked the six similar conceptions of learning identified in her study in the same order. The three additional categories of conceptions of learning found by Purdie are:

1. Learning as a duty:

Learning is described as a duty and a responsibility borne out of an obligation to the individual, the community and society at large.

2. Learning as a process not bound by time or context:

Learning is described as having no contextual parameters and extends to all facets of everyday life. Regardless of whether one is at school or at home, learning can occur and “continues throughout life [and is] a gradual, continuous process” (Purdie, 1994, p. 16).

3. Learning as developing social competence:

Learning is described as relating to social competence and the ability to interact intellectually with other members of society.

(Purdie, 1994)

These three categories were described almost exclusively by Japanese students. Purdie suggested that this was possibly a consequence of Japanese cultural traditions.

#### 2.4.1 Cultural Differences in Conceptions of Learning

Purdie's (1994) study highlights a common misconception that there is only one universal set of conceptions of learning. The results of her study, and others (Pramling, 1981, cited in Pramling, 1983; Watkins & Regmi, 1992), suggest that conceptions of learning vary across cultures. This may explain why Purdie's interpretation of the first six conceptions of learning differs from those identified by Marton et al (1993), given that the cultural backgrounds of the Australian and Japanese students used in her study differ from those of the Swedish students used by Marton et al.

Furthermore, Purdie's (1994) findings indicate a difference in the conceptions of learning held by Japanese secondary school students compared to those held by Australian

secondary school students. Contrary to the popular Western belief that all Asian students are rote learners (Watkins & Ismail, 1994), Purdie found the Japanese students in her study were less inclined than their Australian counterparts to view learning as the memorisation and reproduction of facts. Although the Japanese students indicated the use of rehearsal strategies in their learning, they did so with the intention of understanding the material, and not simply to absorb meaningless fragments of information.

Overall, the Japanese students held a broader view of learning than the Australian students. The Japanese students associated learning more often with social responsibility as well as the personal fulfilment that comes with understanding. In contrast, the Australian students confined their views of learning to classroom based activities where increasing their knowledge, memorising facts and understanding content were common conceptions.

The view that conceptions of learning vary across cultures is further supported by Pramling (1981) in her comparison of Indian & Swedish preschool students' conceptions of learning (cited in Pramling, 1983). The Indian students, whose experience of preschool was oriented around the development of knowledge and skills, held a formal, structured view of learning. This differed from the Swedish students whose socially-oriented preschool experience was reflected in their conception that learning was associated with less formal play activities (Pramling, 1983, p. 13).

In summary, it is evident that the cultural background of a student is an important factor in the development of his or her conception of learning. Whilst it was not the intention of this study to provide rigorous comparison between cultural differences in conceptions of

learning, by its nature, it provided an Australian perspective on primary school students' conceptions of learning.

## 2.5 Preschool Students' Conceptions of Learning

An extensive literature review identified Pramling to be the only researcher of young children's conceptions of learning. Using a phenomenographic approach, Pramling (1983) investigated the ways in which 3 to 8 year old Swedish preschool students perceived learning. The motivation behind Pramling's study was to trace the development of children's consciousness of their own learning. Based on the findings from a series of six interview investigations, she identified three main conceptions of learning.

### 1. Learning as doing:

The lowest level conception of learning is described as the process whereby children believe they can learn by doing something.

### 2. Learning as knowing:

The second level conception of learning is described as the process whereby children believe they have learned when they have come to know something (eg, facts, rules).

### 3. Learning as understanding:

The highest level conception of learning is described as the process whereby children believe they have learned when they have come to understand the meaning inherent in an activity or piece of information.

(Pramling, 1983)

Pramling (1983) acknowledged the difficulties that the young children in her study would have when discussing learning in a general sense. She found it necessary, therefore, to structure her questions around specific, concrete learning situations. In discussing these specific examples, Pramling found that the majority of students interviewed perceived learning as Doing. Only on rare occasions did the older students in the study describe learning as Knowing or Understanding.

The fact that the older students expressed a larger variety of conceptions of learning supports Pramling's assertion that the three levels of conceptions of learning identified in her study form a hierarchy (1983, p. 136). Even though some of the 8 year old students described learning as Understanding, they also described it as Doing and Knowing. The acquisition of a more advanced conception of learning did not mean that the earlier levels were lost. The conception that learning is Understanding did not replace the students' conceptions that learning is Doing or Knowing, but instead was added to their repertoires.

Pramling's latter two conceptions of Learning as Knowing and Learning as Understanding are essentially a basic variation of the lower level conceptions of learning previously discussed in the sections describing adults' and secondary school students' conceptions of learning. It is interesting to note, however, that the conception of Learning as Doing is not evident in these studies with older students. This may be a result of the different focus placed on learning in the preschool, or it may be a result of developmental progression as students increase in age and learning experience. The following section discusses this further.

## 2.6 Discussion of Literature Review

Similarities can be found between the findings of Perry, (1970), Säljö (1979), Pramling (1983) and Marton et al. (1993). Each of these studies suggest that there is evidence of developmental progression in conceptions of learning. It is apparent that as students increase in age and maturity, their conceptions of learning progress to more sophisticated levels. However, this progression is not automatic and likely to be influenced by learning experience rather than age. It is quite possible for an adult student to hold a low-level conception of learning while an adolescent student could have a more sophisticated understanding.

The hierarchical structure of conceptions of learning is also evident in each of the studies reviewed. Perry (1970), Säljö (1979), Pramling (1983) and Marton et al. (1993) suggest that the development of more sophisticated conceptions of learning does not mean the preceding levels are relinquished. When an individual shows evidence of holding a particular conception of learning, it can be assumed that he or she also holds the conceptions of learning that fall below this level. In other words, students who hold a high-level conception of learning also have access to the preceding lower levels. Conversely, students who hold low-level conceptions of learning do not have access, at this point in their learning, to higher level conceptions of learning.

Pramling has suggested that access to a wide repertoire of conceptions of learning enhances learning effectiveness (1983, p. 136). Because learning tasks vary in their complexity, some may require students to use high-level cognitive strategies to extract meaning, while others will simply require students to recall basic facts. Those students who hold high-level conceptions of learning will have greater flexibility to adopt high or

low-level cognitive strategies needed to facilitate the type of learning that is required. However, students who hold low-level conceptions of learning will be restricted to low-level cognitive strategies irrespective of the demands made by the learning task.

The idea that high-level conceptions of learning lead to high-level cognitive strategies and low-level conceptions of learning lead to low-level cognitive strategies is indicative of the relationship between conceptions of learning and approaches to learning identified by van Rossum and Schenk (1984). This relationship, whereby the type of approach used by an individual is largely determined by the level of conception he or she holds, is evident in the studies reviewed. Perry (1970), Säljö (1979) and Marton et al. (1993) associated low-level conceptions of learning with surface approaches to learning, and the higher levels with deep approaches to learning.

Pramling (1983) was one of the first researchers to make this relationship between conceptions of learning and approaches to learning explicit by describing her results in terms of *what* the children understood learning to mean and *how* they perceived it to have come about. The *what* component can be interpreted as an individual's conception of learning, and the *how* component an indication of how he or she approaches a task. In their attempt to provide a more precise characterisation of Säljö's (1979) categories, Marton et al. (1993) also separated their descriptions of conceptions of learning into *what* and *how* definitions.

The breakdown of the descriptions of conceptions of learning into *what* and *how* components has not only provided greater insight into an individual's way of thinking, but has also facilitated the close examination of the relationship between conceptions of

learning and approaches to learning. Beyond simply acknowledging that each *what* component of a conception of learning will have a related *how* component, one has to question why this relationship exists. Why do conceptions of learning influence approaches to learning?

One answer might be found in the assumption that conceptions of learning reflect metacognitive knowledge, and any increase in the level of conception of learning held by an individual will also be accompanied by an increase in his or her metacognitive ability (Pramling, 1983; Candy, 1990). In view of the fact that metacognitive ability incorporates a student's awareness of the skills, strategies and resources needed to perform a learning task effectively (Mafro, Mulcahy, Peat, Andrews & Cho, 1991, p. 76), it seems only logical that this knowledge would affect how the student approaches a task.

The notion that conceptions of learning provide windows into individuals' metacognitive abilities has been raised in Pramling's (1983) study with preschool children. She has suggested that conceptions of learning reflect the degree of awareness of the skills and strategies individuals need to perform a task. This is a powerful concept in the light of Biggs' assertion that metacognition is the key to effective learning (1988, p. 134). In effect, the more sophisticated an individual's understanding of learning is, the more advanced his or her metacognitive ability will be, which in turn leads to more effective approaches to learning.



## 2.7 Chapter Review

This chapter described the findings of four major studies which have investigated adult, secondary school and preschool students' conceptions of learning. The research method of phenomenography, which was utilised in most of these studies, was also discussed. The results of these studies suggest it is feasible to expect to find different conceptions about the meaning of learning among any group of learners. The implications of this finding suggests that the structure of teaching and learning in schools needs to give due recognition to differences in individuals' conceptions of learning if teachers are to enhance their students' learning experiences.

## **THEORETICAL FRAMEWORK**

### **3.1 Introduction**

This chapter outlines the theoretical framework on which the study is grounded. The basic premise is that individuals construct their own understanding of the world. This perspective is the principle underlying phenomenography (Section 2.2) in that individuals' perceptions of phenomena are determined by their past experiences and existing understandings. Conceptions of learning form part of these existing understandings and, as such, influence the way in which information is perceived. This premise is further developed, as are the theoretical and philosophical assumptions inherent to this perspective. The conceptual framework, which outlines the factors that influence the development of conceptions of learning, is also described. While it was not the intention of this study to discuss all of these factors in detail, it is necessary to identify them as a link to a number of assumptions made throughout the thesis.

### **3.2 Overview of the Theoretical Framework**

The following section outlines the cognitive perspective of constructivism, which is discussed in relation to conceptions of learning. People's understandings of the nature of knowledge are presented as an introduction to the fundamental meaning of constructivism. The link between constructivism and conceptions of learning is discussed in terms of the notion that people's perceptions of knowledge influence the way in which they interpret or construct personally meaningful understandings of information. This link is explored further by examining the relationship between conceptions of learning, metacognition and approaches to learning. Piaget (1963) and Vygotsky (1978) are presented as two

prominent constructivists whose theories have influenced this study. The section concludes with a summary of the relationship between constructivism and conceptions of learning and the implications it has on teaching and learning.

### 3.2.1 Theoretical Framework

Commensurate with the development of increasingly sophisticated conceptions of learning is the development of a richer understanding about the nature of knowledge. This is evident in Säljö's (1979) five categories of conceptions where the first three levels are based on an individual's perception that knowledge exists independently to the learner. In contrast, the last two categories stress that knowledge is perceived, not as an external entity, but as something that is actively constructed by the learner in an effort to understand its meaning (Candy, 1991, p. 251).

The latter representation of knowledge indicates a deeper understanding of what it means to learn and is at the heart of the cognitive perspective of constructivism. The fundamental principle underlying this perspective is that people do not simply absorb information from the environment but rather they construct personally meaningful understandings by relating new information to what they already know. Existing knowledge then, becomes an important factor in the process of learning, as it determines to a large extent what will be learned (Resnick, 1981; Shuell, 1986).

Conceptions of learning form part of these existing knowledge structures, and because conceptions of learning reflect an individual's understanding of the nature of knowledge (Säljö, 1979), it can be assumed that the way in which tasks are approached and learned will be affected. For instance, an individual who perceives knowledge to exist as an

external entity will be likely to use strategies that enable him or her to absorb and reproduce information in its original state. On the other hand, an individual who perceives knowledge to be the mental construction of meaning will be likely to use strategies that enable him or her to actively work with information in order to achieve deep-level understandings.

The assumption that conceptions of learning reflect an individual's understanding about the nature of knowledge and his or her approach to learning, is related to Pramling's (1983) and Candy's (1990) assertion that conceptions of learning reflect metacognitive knowledge. Pramling and Candy contend that conceptions of learning are windows into individuals' metacognitive ability, that is, their knowledge and awareness of the skills, strategies and resources needed to perform a task effectively.

The interrelationship between conceptions of learning, metacognitive ability and approaches to learning gives substance to the constructivist's viewpoint that unless information is internally constructed by the learner, it is not actually learned (Candy, 1991, p. 270). Students who hold low-level conceptions of learning may be aware of strategies that will facilitate the memorisation and reproduction of information, but this does not necessarily mean that learning has occurred. In order for something to be genuinely learned, it must be understood. To understand a task, the student must be aware of strategies that will enable him or her to mentally construct the information in such a way that the information becomes personally meaningful.

While constructivism incorporates a number of theorists who subscribe to its general perspective (eg, Piaget, 1963; Vygotsky, 1978; Gagnè, 1985; Shuell, 1986; Wittrock,

1991), this study draws mainly from the developmental theories of Piaget and Vygotsky. This is reflected in the importance placed on the participating students' ability to verbally communicate their internal thoughts (Vygotsky, 1978). Vygotsky contends that language is the primary means through which children become aware of their own thoughts and, used either socially or privately, it will facilitate their construction of knowledge (Berk, 1991, p. 247). Therefore, in order to interpret the students' conceptions of learning, credence has been placed in their language as the main source of data collection.

Piaget's theory that individuals construct their own understandings of reality (Wood, 1988, p. 38) is the fundamental principle underlying constructivism, and indeed this study. In order to understand the qualitatively different ways in which children construct understandings of the world around them, Piaget developed his theory of stage development (Woolfolk, 1990, p. 46). While the characteristics defining Piaget's specific stages were not relevant to this study, the principles underlying their formation are.

For example, the six conceptions of learning identified in this study are hierarchically related in the same way that Piaget's stages of cognitive development are hierarchically related. As with Piaget's stages, it is assumed that the order in which conceptions of learning are achieved will be the same for everyone (Smith & Cowie, 1988, p. 280). That is, individuals will follow the same pattern of progression through the qualitatively different levels of conceptions of learning, although the ages at which this occurs will vary from person to person. It is not possible to skip levels, and unless an individual has passed through the lower levels, he or she will not have the cognitive capacity to function at the higher levels.

An important feature of the hierarchical structure of Piaget's stages of cognitive development, as well as the six conceptions of learning identified in this study, is that early levels are not lost or forgotten as individuals progress towards higher levels of understanding. Instead, earlier levels are subsumed and integrated into the more sophisticated levels. This explains why it is possible for students to express more than one conception of learning.

In summary, fundamental to constructivism is the assumption that knowledge is actively constructed by individuals as they interpret and ascribe meaning to their experiences. Isolated fragments of information become knowledge only when they have been understood and rendered personally meaningful to the learner. As conceptions of learning provide insight into an individual's construction of the nature of knowledge and learning, teachers should seek to understand learning experiences from their students' point of view and become aware of their conceptions of learning (Candy, 1991, p. 260). To assist students in moving towards high-level conceptions of learning as well as deep approaches to learning, instruction should not only move from the familiar to the unfamiliar but also facilitate the development of metacognitive skills in a way that students will be able to effectively build upon existing knowledge.

### 3.3 Conceptual Framework

According to Good (1973), a conceptual framework identifies all the possible variables that impact upon the topic under study. Since the purpose of this study is to describe conceptions of learning held by students and not to explain the factors affecting their formation, the need to present a conceptual framework is not essential. Nevertheless, to further emphasise the significant role of culture and context in the development of a

student's conception of learning, a simplified model of the conceptual framework is presented.

The literature relating to conceptions of learning rarely examines the factors which might influence their formation. However, Pramling (1983) has acknowledged some variables even though her review is not extensive. In her study with preschool children, she has suggested that possibly the most significant influence on children's conceptions of learning is the school context. The organised setting of the classroom offers students structured learning experiences during which their conceptions of learning become actualised (Pramling, 1983, p.13).

These learning experiences are structured in part by the teaching context which includes factors such as the teacher's conceptions of learning and teaching, instructional methods, assessment methods, curriculum content and rules of behavioural and learning conduct (Biggs & Moore, 1993, p. 451). In view of the fact that students are continuously confronted by the demands made by the teaching context throughout their school lives, it can be expected to have a significant impact upon their conceptions of learning.

However, while the teaching context is likely to influence conceptions of learning, the cultural traditions of the society within which the school operates also have an effect. This point is emphasised in Pramling's (1981) study with Indian and Swedish preschool students (cited in Pramling, 1983, p. 13). The Indian students' conception of learning reflected their society's belief that preschools are places of knowledge acquisition. The Swedish students' conceptions of learning, however, reflected a less formal view and were

influenced by their society's belief that preschools should focus on social behaviour with less emphasis on knowledge acquisition and skills such as reading and counting.

The cultural beliefs in schools are also reinforced in the home environment. The beliefs held by family members play a significant role in terms of how various phenomena in the world, including learning, are viewed. Although Pramling (1981) found that the home environment was not as influential than the school context, she argued that home factors do play an important part in the formation of students' conceptions of learning (cited in Pramling, 1983, p 13). It seems likely that the conceptions of learning held by parents and other significant family members would be conveyed to children or siblings. In fact, one would imagine the home context to be the first major influence on children's conceptions of learning before commencing school.

The extent to which the school context, cultural traditions and home context are influential in the development of a student's conception of learning depends on a number of factors specific to the individual make-up of the student. Age, cognitive development, motivation, and even self-concept, are likely to effect an individual's conception of learning. There are possibly more variables that impact upon a student's conception of learning and the fact that we know little about them identifies a need for further research. However, since the purpose of this study is to describe students' conceptions of learning within the context of a primary school, only those factors within the educational perspective are included in the conceptual framework. A simplified model of the conceptual framework is presented in Figure 1.



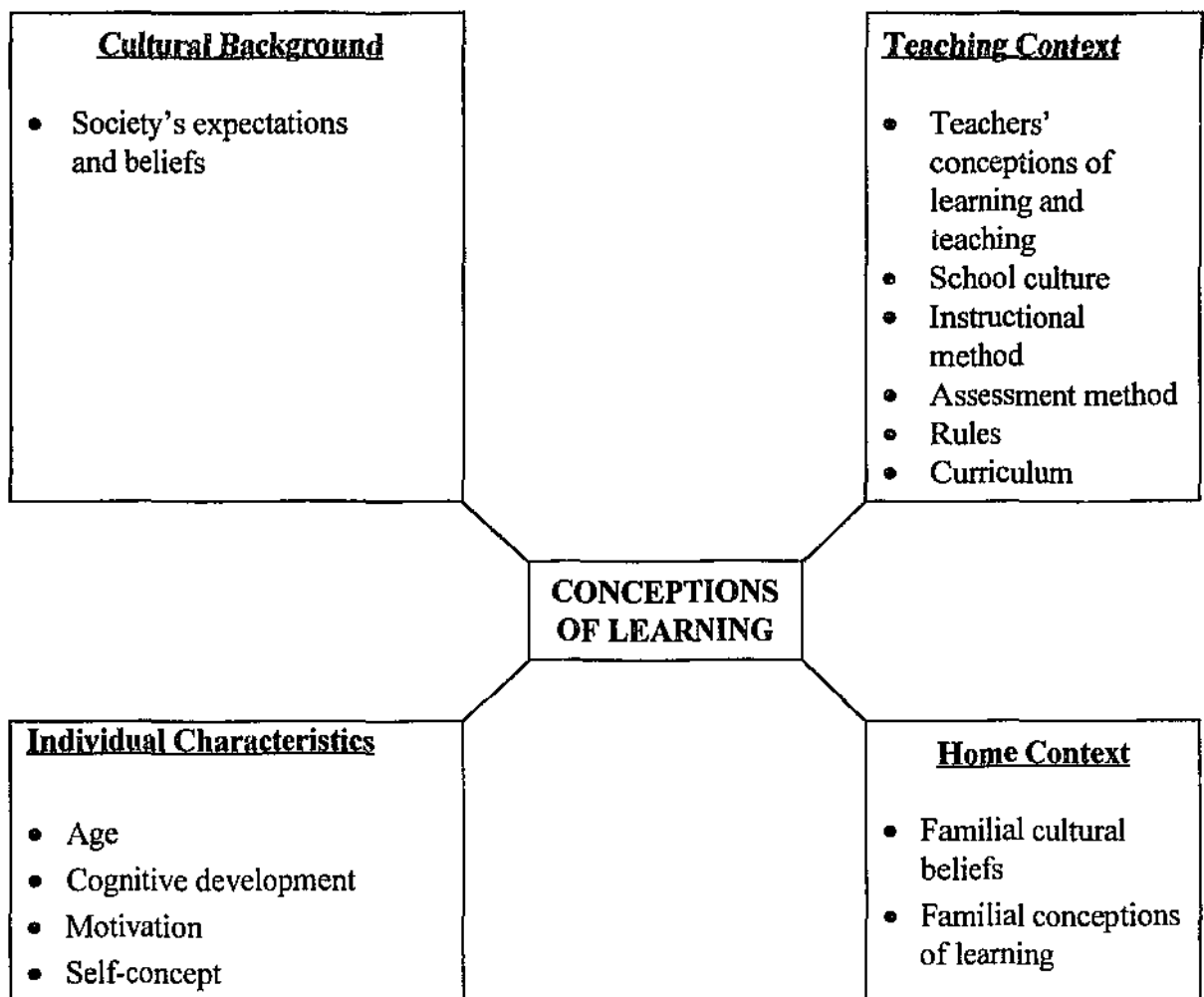


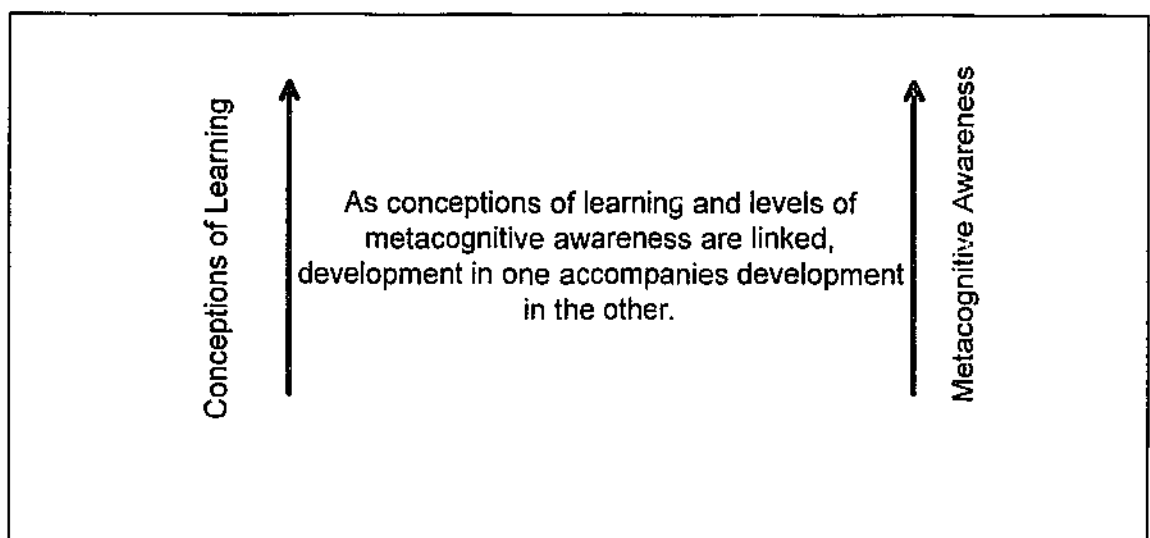
Figure 1. Conceptual Framework

### 3.4 Theoretical and Philosophical Assumptions

Based on the findings of the literature review and the theoretical and conceptual framework, this study is founded upon the following assumptions.

1. People use language and actions to express themselves (Vygotsky, 1978). It is through language that people construct personally meaningful understandings about phenomena in their lives.

2. Knowledge is constructed and does not exist independently of learners (Candy, 1991, p. 251). Therefore, learning is something that individuals must actively pursue; it does not simply happen to them. This assumption is discussed further in Chapter 4.
3. The degree of metacognitive awareness is evident in an individual's conception of learning (Pramling, 1983; Candy, 1990). The deeper an individual's understanding of learning, the more advanced his or her metacognitive ability will be. Figure 2 shows the relationship between learning conceptions and metacognitive awareness.



**Figure 2.** Relationship between conceptions of learning and metacognitive awareness.

4. Conceptions of learning are not fixed. Due to the hierarchical nature of conceptions of learning, people can hold a range of conceptions at any one time. As people grow and change as learners, so too will their conceptions of learning grow and change.

5. The context within which learning takes place will influence an individual's conception of learning. The development of a curriculum that links together content and process, and emphasises the importance of understanding over the acquisition of facts, can encourage students to develop more sophisticated conceptions of learning.

### 3.5 Chapter Review

This chapter identified the theoretical foundations underpinning this study. The theoretical premise of constructivism contends that facts and isolated fragments of information become knowledge only when they have been assigned meaning by the learner. This construction of meaning occurs when new information is linked to existing understandings. Conceptions of learning are influential in the way that information is constructed as they form part of the existing knowledge structures. This perspective assumes that people are active participants in the learning process as they endeavour to construct personally meaningful understandings about events and their surroundings. This belief was fundamental to the methodology and design of this study. The conceptual framework was also described, outlining factors that are influential in the development of conceptions of learning.

## **METHOD OF INVESTIGATION**

### **4.1 Introduction**

The purpose of this chapter is to outline the method of research used in this study and to describe the procedures of data collection and analysis. A brief description of the philosophical assumptions which were fundamental in determining the methodology and tools of data collection and analysis are also discussed. These issues are reviewed in relation to relevant literature. The chapter concludes with a summary of potential problems associated with the methodology and the actions taken to mitigate them.

### **4.2 Ontological and Epistemological Assumptions**

The ontological and epistemological assumptions which have shaped the design of the study as a whole are essentially extensions of the principles underlying phenomenography and constructivism. Although these assumptions have been addressed previously (Sections 2.2 and 3.2.1), their significance in binding this study together is so great that they demand an explicit statement.

People are thinking, feeling creatures who use language and actions to express themselves (Vygotsky, 1978). These actions are deliberate in that people do not simply react to events, but reflect on them and act accordingly. During these moments of reflection, people construct personally meaningful understandings about their own lives. This premise is in keeping with the assumptions outlined previously that knowledge does not exist as a separate entity, but rather is constructed when individuals endeavour to make sense of phenomena and experiences.

Therefore, conceptions of learning are personal constructions about the phenomenon of learning and, because people experience things in a unique way (according to past experiences and existing understandings), it follows that there should exist a set of qualitatively different conceptions of learning, rather than one uniform perception. Furthermore, people's subjective experiences of events and phenomena are manifested in what they say and do. Therefore, credence must be given to their language and actions in an effort to interpret their descriptions of these events (Vygotsky, 1978).

#### 4.3 Literature on Methodology

The stated ontological and epistemological assumptions are in line with Brookfield's assertion that something as complex as understanding another individual's interpretation of reality can only be accomplished through observing their actions and talking with them at length (1990, p. 331). Accordingly, this study adopted a form of naturalistic inquiry where the author entered into the world of the participants in an effort to understand their interpretations of the phenomenon of learning.

Naturalistic inquiry subsumes a number of schools of research under its broad umbrella. Researchers need to consider the qualities of these perspectives when designing a study that will effectively allow them to investigate the problem at hand. Consequently, the method adopted for this study incorporated many qualities of phenomenographic research as the aim was to reveal students' conceptions of learning from the perspective of the students themselves.

Marton (1981, p. 178) has labeled this type of investigation a *second order* perspective. He has argued that, "In the first and by far the most commonly adopted perspective we

orient ourselves towards the world and make statements about it. In the second order perspective we orient ourselves towards people's ideas about the world (or their experiences of it)". This second order perspective is in keeping with the intentions of this study where conceptions of learning, as they are conceptualised by the students, are paramount. Säljö (1979) pioneered the use of phenomenography in his exploration of adult students' conceptions of learning. His study has been replicated by researchers such as Giorgi, (cited in Marton et al., 1993), Marton et al., (1993) and Pramling, (1983) with similar findings supporting the use of this research method.

The phenomenographic inquiry method used in this study involved a case study technique where a combination of non-participant observation and interview sessions were used to gather data. It is accepted that valuable insights can be gained about a particular phenomenon through case studies of individuals or groups (Yin, 1989, p. 23). Yin defines the case study as, "an empirical inquiry that investigates a contemporary phenomenon within its real life context" (1989, p. 23). This makes sense as meaningful interpretations of human experience can only come from a researcher who has thoroughly immersed him or herself in the phenomenon he or she wishes to interpret and understand.

One of the fundamental principles of phenomenography, and one that was integral to this study, is that people's conceptions of events can be revealed in what they say during interviews. As a proponent of phenomenography, Pramling has identified the interview technique as the only valid way to understand children's thoughts. She has suggested that through the exploration of one's own thoughts, "one also explores one's conceptions of various phenomenon about the surrounding world" (1983, p. 43). The

data obtained from interviews constitute empirical material for analysis, and categories of qualitatively different conceptions constitute the results.

Brookfield has argued against structured interview schedules where each participant is subject to the same rigid set of questions (1990, p. 334). While it is agreed that there must be flexibility in questions, a wholly open-ended interview schedule may lead to ambiguity and confusion for both the researcher and participant. Therefore, the interview schedule adopted for this study was semi-structured, allowing the author to follow a pre-determined set of questions modified to suit each student's learning experiences.

Although observation was not directly used as a means of collecting empirical data, it nevertheless provided insight into the students' learning contexts, prior to the data collection phase of the study. Many of the questions in the interviews were formed and adapted as a result of non-participant observation of the students as they worked in class. These observation sessions also provided the opportunity for students to become familiar with the author and the equipment.

#### 4.4 Research Design

Since this study was concerned with exploring and describing students' conceptions of learning, the design is descriptive in character. In keeping with Gay's contention that, "The descriptive researcher has no control over what *is*" (1992, p. 218), there has been no attempt to control or manipulate variables. The main thrust of the study was not to investigate the relationship among variables but to define the meaning that students ascribe to the phenomenon of learning.

#### 4.5 Subjects

The study was conducted in a Western Australian government primary school which draws from a predominantly Anglo-Australian middle to upper socio-economic community. The decision to use this particular school was based on reasons of accessibility in terms of the willingness of the school principal to allow the students to participate in the study.

The study focused on children in the lower, middle and upper grades of primary school (Year Levels 1, 4 and 7). Since the data collection stage of the study took place at the beginning of the school year, this equated to an age range of students of 5, 8 and 11 respectively.

The total sample consisted of three males and three females. Table 1 provides information relating to the sample composition. Each classroom teacher was asked to identify one male and one female student on the basis of verbal ability. As interviews were the sole data collection technique, a crucial aspect of the study was the ability of the participating children to articulate their thoughts.

Table 1  
Sample Composition

<b>Gender</b>	<b>Year 1 (Lower)</b>	<b>Year 4 (Middle)</b>	<b>Year 7 (Upper)</b>	<b>Total Number of Subjects</b>
<b>Male</b>	Age 5	Age 8	Age 11	6
<b>Female</b>	Age 5	Age 8	Age 11	
<b>Total Students per class</b>	2	2	2	



#### 4.6 Ethical Considerations

Prior to the data collection phase, the parents of the participating students received letters outlining the purpose of the study, and the role their children would play in its implementation. The parents also received an Informed Consent Form requesting authorisation for their children's participation. Samples of the Letter to Parents and Informed Consent Form are presented in Appendices A and B respectively.

At the beginning of each interview, the participating students were asked permission to audio tape-record the session. It was also made clear to them that they could choose not to answer questions and stop the interview at any stage, if they so wished.

To protect the identity of the students and their teachers, pseudonyms have been used in all records as well as this thesis.

#### 4.7 Data Collection

##### 4.7.1 Pilot Study

A pilot study was performed prior to the commencement of formal recordings to provide the author with opportunities to practise and refine interviewing skills. Questions adapted from Pramling's (1983) study were trialed on three children representing each of the three relevant age groups. This activity was useful in identifying ambiguities and points of confusion in the questions which were subsequently modified to ensure clarity.

#### 4.7.2 Procedure

The six students in the research sample were each observed for a half-day on two separate occasions in the natural setting of their own classrooms. The two participating students in each year level were the focus of observation. Field notes included information on learning activities and any overt behaviour displayed by the participating students. A sample of the field notes gathered during the two observation sessions for the Year 1 students is presented in Appendix C.

Immediately following the periods of observation, each student was individually interviewed. Table 2 outlines the time frame for observation and interview sessions.

Table 2  
Schedule of Observation and Interview Sessions

Day	Year	Informal Observation Session (1/2 day)	Informal Interview session (≈ 30 mins)	Formal Observation Session (1/2 day)	Formal Interview session (≈ 30 mins)
1	1	24/2/95	24/2/95		
2	1			28/2/95	28/2/95
3	4	3/3/95	3/3/95		
4	4			9/3/95	9/3/95
5	7	10/3/95	10/3/95		
6	7			17/3/95	17/3/95

The first interview session was informal as the purpose was to establish rapport between the author and student, and to encourage the student to consciously think about and

articulate his or her understanding of learning. The data for analysis were mainly gathered from the second interview, although the first interview provided rich, complementary information.

Interviews commenced with informal greetings, which gradually led into discussions about the students' lives at school. This, along with information gathered during observation sessions, provided the basis upon which formal *what* and *how* questions about learning were formulated. *What* questions were always in relation to specific learning situations experienced by the students and were generally followed by corresponding *how* questions. Direct questions asking "What is learning?" and "How does one learn?" came towards the end of the second interview sessions when the author was satisfied that the students were sufficiently warmed to the topic. This abstract question was made less complex by adopting Pramling's (1983) practice of giving the students a meaningful audience to whom their thoughts could be directed. This audience was a puppet (named Annie) who feigned uncertainty about the meaning of learning. The students, especially the 5 year old children, were eager to help the puppet understand, and in doing so provided rich data related to their own ideas about learning.

Interview schedules were semi-structured as they were designed to obtain specific information on the students' understanding of learning but contain sufficient flexibility to probe and follow ideas as far as possible. The principal interview schedule, upon which the others were based, is presented in Appendix D. All six interviews were audio tape- recorded and fully transcribed. These transcripts were later checked for accuracy by an independent person. A sample of these transcripts is presented in Appendix E.

#### 4.8 Data Analysis

Analysis of interview transcripts was primarily an inductive process where patterns in the data led to the development of categories of conceptions of learning. To gain an appreciation of the true meanings attached to the participants' responses, and to develop a sense of their coherence as a whole, all 12 interview transcripts were repeatedly read by the author whilst simultaneously listening to the taped versions. Information not relevant to the study (ie, personal details), was deleted from all transcripts to refine the focus. In addition, and as previously stated, data gathered during observation sessions supplemented the data gathered during interviews, but was not used for formal analysis.

As indicated by Tesch (cited in Creswell, 1994, p. 153), the process of data analysis in naturalistic research is eclectic and there is no 'right way' to proceed. Nevertheless, this does not mean that there are no guidelines to follow, and indeed, the credibility of a study is strengthened if the researcher applies consistent and rigorous steps of analysis. As such, the data for this study were explored using a systematic process of segmenting the data into units of meaning and then grouping the units into larger clusters to form categories. This coding process was carried out over three integrated stages using the 'constant comparative' method proposed by Glaser and Strauss (cited in Lincoln and Guba, 1985, p. 340).

The constant comparative method is typically used in studies where the aim is to develop a theory. Although this was not a grounded theory study, the constant comparative method was used as it is a process that ensures rigour in data analysis, the steps of which can be explicitly described.

To make the data more manageable, and to enable the author to focus on more specific patterns, coding was carried out in three batches, that is, interview transcripts were separated into three groups according to age. Furthermore, statements reflecting the *what* and *how* aspects of learning were highlighted in contrasting colours for ease of management.

Using the Non-numerical Unstructured Data Indexing Searching and Theorising (NUD•IST) program as a sophisticated organising tool, statements were segmented into units of meaning based on the first stage of the constant comparative method by comparing and contrasting responses with other responses in the same and different groups. The classification of these units of meaning was based on a combination of ideas that came from the data, related literature and the conceptual and theoretical frameworks. These initial categories were tentative and were used as flexible working tools for making sense of the numerous pages of data.

The constant comparison of groups allowed the author to note the emerging characteristics of the categories as well as their similarities and differences which is in keeping with Lincoln and Guba's statement that "the process of constant comparison stimulates thought that leads to both descriptive and explanatory categories" (1985, p. 342). It is not the author's intention to make this process sound any less complicated than it actually was, as rarely did units of meaning meet all the criteria of the categories.

Moments of confusion were usually overcome by writing anecdotal notes. These memos enabled the author to uncover the properties of the emerging categories. Lincoln and Guba have recognised this as a very significant stage in coding, not only in the

identification of a category's attributes, but also in the identification of rules by which assignment of segments occur (1985, p. 342). Thus, the initial and somewhat intuitive process of classification was replaced by a more concrete, rule-governed judgment system.

The literature was constantly referred to during data analysis and it was clearly evident that some of the emerging categories constituted results identified in related research. The acknowledgment of pre-existing categories did not force the data into an *a priori* framework but simply enabled the author to explore the data in greater detail. Schumacher and McMillan contend that this would still be considered inductive analysis as "Any starting point begins an inductive, generative, and constructive process because the final set of categories are not totally predetermined, but are carved out of the data according to their meaning" (1993, p. 487).

The second stage of the constant comparative method of analysis involved the comparison of participant responses to the characteristics that describe the categories. This differed from stage one where the responses were compared and contrasted. Such a test examines not only the appropriateness of the topics within categories but the characteristics of the categories themselves. The benefits of this analysis are clearly stated by Lincoln and Guba, "It is this dynamic working back and forth that gives the analyst confidence that he or she is converging on some stable and meaningful category set. The test is two-edged, exposing both incident and category to searching criticism" (1985, p. 342).

As a result, categories were redefined and merged or extended into sub-categories. This rigorous testing rolled into the third stage of constant comparative analysis known as 'delimiting the theory' (Glaser and Strauss, cited in Lincoln and Guba, 1985, p. 343) where the categories became so well defined that student expressions were smoothly assigned and understanding of the conceptions extended. A sample of the Generic Learning category at this stage of the coding process is included in Appendix F.

Although it is not the author's intention to discuss the results in this section, it is necessary to include an overview of the preliminary findings to explain the final stages of data analysis. These preliminary findings are presented in Figure 3 and are in the form of two separate yet related frameworks of conceptions, a *what* framework of conceptions and a *how* framework of conceptions.

Considering that the majority of *what* questions were followed by a corresponding *how* question, it can be inferred that each conception in the *how* framework is in fact an extension and part of its corresponding *what* conception. For example,

- Q:** What have you learned that a little Year One hasn't? (A2)  
**A:** How to do multiplication, division, tables . . . how to read harder things. (A2)  
**Q:** How did you learn multiplication? (A2)  
**A:** Well when I was in Year Three we did our 2's, 3's, 5's and 10's . . . and you had to say the tables to the teacher. (A2)

In their analysis of adult conceptions of learning, Marton et al. also found that student responses focused on the *what* and *how* aspect of learning, but in effect these "expressions often represent[ed] different fragments of the same conception" (1993, p. 282). Following the same principle adopted by Marton et al. where "The whole is made

up of its fragments” (1993, p. 282), the *what* and *how* frameworks for this study were merged, resulting in six qualitatively different conceptions of learning.

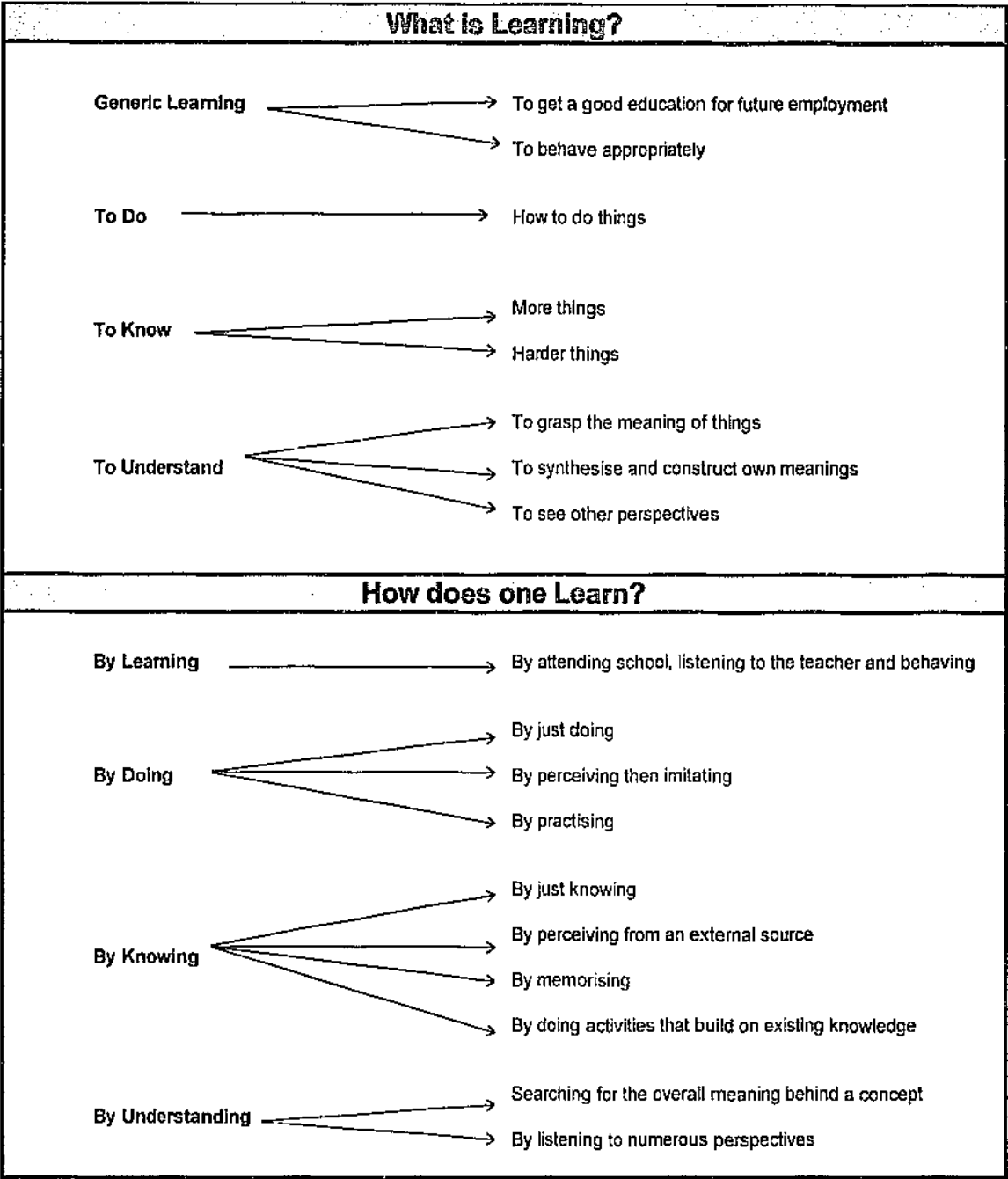


Figure 3. Two related frameworks of conceptions - What and How.



#### 4.9 Methodological Cautions

While the validity and reliability of *all* research must be established, it is important to note that these terms are more suited to studies that fall within the positivist paradigm. To maximise the authenticity of descriptive claims such as those within this study, Guba (1977, p. 62) has proposed four alternative constructs that more aptly reflect the philosophical assumptions of qualitative research. Intrinsic adequacy, impartiality, replicability and extrinsic adequacy all influence the credibility of naturalistic inquiries and therefore, have been considered in relation to this study to establish confidence in its findings.

##### 4.9.1 Intrinsic Adequacy and Impartiality

According to Guba, intrinsic adequacy refers to the extent to which mutual meanings exist between the researcher's interpretations and the participants' perceptions of the phenomenon under study (1977, p. 62). Because the focus of this study was the description of the phenomenon of learning from the student's perspective, ensuring intrinsic adequacy is paramount. Therefore, strategies were adopted during the data collection and data analysis phase to specifically address this.

For example, contrast questions (Speizman, cited in Guba, 1977, p. 62) were asked during interviews whenever students were unclear about the meaning of a question or when insufficient information was provided in their responses. The author also paraphrased responses to provide students with an opportunity to comment on their accuracy. In addition, review of the author's interpretations by an experienced researcher served as an added validation.

It is accepted that attempts to be totally impartial will never be completely successful as, “no-one can be totally objective as we all are influenced to some degree by our past experiences which in turn affect how we see the world and the people within it” (Fraenkal & Wallen, 1990, p. 373). By practising ‘disciplined subjectivity’, as proposed by LeCompte (cited in Schumacher & McMillan, 1993, p. 392), the author has attempted to minimise this threat as much as possible. All phases of the research process were rigorously questioned with apparent biases recorded in a journal and continuously referred to during data analysis.

Unless researchers and their equipment are totally concealed, their presence will have an effect on the behaviour of the participants. In the case of this study, it was acknowledged that the presence of an unfamiliar person and equipment might arouse the students’ curiosity causing poor attention to task, thus distorting the data. To combat such a limitation, Guba has suggested researchers spend time in the field of observation prior to recording to ensure participants become accustomed to their presence (1977, p. 62). Therefore, each classroom was not only given prior notice of the author’s visit but observed twice with sessions lasting at least half a day. In addition to gaining insight into the students’ learning context, the purpose of the first session was to familiarise students with the author such that any potentially abnormal behaviour would not skew formal recordings which took place in the second session.

It was expected that this study presented the students with their first opportunity to consciously think about and articulate their understanding of the phenomenon of learning. It was thought unlikely they would be able to organise their thoughts during one interview only, so each participant was interviewed twice. The first interview served

not only to orient the participants to the topic, but also to establish rapport with the author.

#### 4.9.2 Replicability

Replicability refers to the extent to which independent researchers obtain consistent results when investigating phenomena within similar contexts. Ensuring the replicability of a naturalistic inquiry can be problematic however, due to the 'individualistic' nature of the qualitative process, as no two researchers observe, interview, record or analyse in exactly the same way (Schumacher & McMillan, 1993, p. 386).

Replication issues, however, can be effectively addressed, as they have in this study, through the comprehensive description of methodology, where reliability is built into the study as a fundamental part of its design. Goetz and LeCompte have summarised this point by saying:

The researcher must clearly identify and fully discuss data analysis processes and provide retrospective accounts of how data were examined and synthesised. Because reliability depends on the potential for subsequent researchers to reconstruct original analysis strategies, only those . . . accounts that specify these in sufficient detail are replicable (1984, p. 217).

Therefore, all phases of data collection and analysis have been fully documented. Even the social relationship between the author and subjects has been explicitly stated, in light of LeCompte and Goetz's observation that the status of the researcher in the field will affect access to the data (1982, p. 37).

Based on these careful records, replicability of this study has been confirmed by an independent researcher who coded the transcripts twice and found similar results. This

person is experienced in research processes and highly familiar with the topic area. Following the same data analysis procedure as stated in Section 4.7, an inter-rater agreement of 96% was reached in relation to the categories identified in the *what* and *how* frameworks. Using the method described by Pramling (1983, p. 87) whereby the transcripts are repeatedly read, an inter-rater agreement of 99% was reached, once again in relation to the categories identified in the *what* and *how* frameworks. Thus confidence can be placed in the study's findings.

#### 4.9.3 Extrinsic Adequacy

Wolcott (1973) described the issue of extrinsic adequacy, otherwise known as generalisability, as one of demonstrating the "typicality of a phenomenon, or the extent to which it compares and contrasts along relevant dimensions with other phenomena" (cited in LeCompte & Goetz, 1982, p. 51). In other words, the author does not aim at generalisation of results as in quantitative research but toward the extension of understandings to permit others to understand similar situations and extend these understandings in subsequent research. Therefore, threats to extrinsic adequacy of qualitative studies are those that limit its usefulness.

Because of the rigorous and comprehensive description of both the theoretical and methodological frameworks, as well as the data coding methods, it is argued that this study permits readers to use the findings in similar contexts.

#### 4.10 Chapter Review

The focus of this chapter was on the research method, describing the subjects, data collection, data analysis and the measures taken to ensure the credibility of the results. The presentation of the philosophical assumptions central to this study integrated the theoretical framework, the methodology and ultimately the findings which are reported in the following chapter.

## **RESULTS AND DISCUSSION**

### **5.1 Introduction**

This chapter will be presented in three sections; the findings of this study, discussion of these findings and finally the educational implications. The findings section presents data which address the main research question and presents and discusses the six conceptions of learning that emerged from the data. In keeping with Pramling's (1983) and Candy's (1990) assumption that implicit in conceptions of learning are varying degrees of metacognition, metacognitive awareness has been traced in each finding and this issue is addressed as the conceptions are defined. This section concludes with a summary of the six conceptions of learning in terms of their general orientations to learning.

The discussion section emanates from an analysis of the relationship between the findings and the study's theoretical framework which is based on the constructivist perspective. It also presents and discusses data relating to the subsidiary research questions embodied in the main investigation. The conceptual issues of context and culture are raised when the findings of this study are compared to the findings of Pramling (1983) and Marton et al. (1993).

Finally, the fundamental meaning of the results in relation to the classroom context is examined and presented as educational implications.

## 5.2 Findings

In response to the main research question “What are the conceptions of learning held by children in the lower, middle and upper grades of primary school?”, the following six conceptions of learning were identified; Generic Learning, Physically Doing, Knowing More Things, Knowing Harder Things, Searching for Meaning and Constructing New Understandings.

These findings are generally in accordance with Pramling’s results (1983) showing a progression from learning To Do, to learning To Know and then ultimately to learning To Understand. A striking difference, however, is the identification of an additional conception which precedes Pramling’s primary level of learning To Do. The author has labeled this the Generic Learning conception due to its amorphous nature. It appears to be the most basic level and possibly the one from which all others develop.

In addition, two knowledge-orientated conceptions of learning emerged in this study as opposed to only one identified by Pramling (1983). The two identified in this study both associate knowledge with learning, however, a slightly more sophisticated means of acquiring information in one has resulted in the creation of a separate, qualitatively different conception. Furthermore, the latter four conceptions in this study hold many similarities to adult conceptions of learning as identified by Marton et al. (1993). There were no such similarities discussed in Pramling’s findings.

As previously discussed in Section 3.2.1, the six conceptions of learning have been organised into a hierarchical structure, from simple to complex, based on the same principles underlying Piaget’s hierarchically structured stages of cognitive development (Woolfolk, 1990, p. 46).

This hierarchical structure reflects the study's theoretical framework and the author's personal assumptions about learning but has not been developed as part of the study's findings. In fact, it is quite possible that if the participating students were asked to place the findings into a hierarchical form, a completely different structure might evolve based on their own beliefs and assumptions about learning. A detailed description of the six conceptions of learning follows.

### Generic Learning

The Generic Learning conception is unique to this study as it is not evident in Pramling's (1983) findings or in any other investigation into conceptions of learning. There are similarities, however, between Generic Learning and Purdie's (1994) third conception where students' responses emphasise their desire for successful careers. While this employment-related goal in Purdie's conception is attained through the application of knowledge and skills, students offer no such explanation in Generic Learning, except to say that it will occur as a result of learning.

This particular conception has been labeled 'generic' by the author due to its vague, ill-defined nature, as students rarely went beyond the explanation of 'to learn' in their attempt to define learning.

**Q: What do you mean 'to learn things'? (L1)**

**A: To learn things, like in Queensland they don't have a good education. (L1)**

**Q: What do you think 'learning' means Renae? (R2)**

**A: It means . . . coming to school and learning things . . . Just things that you have to learn in school. (R2)**

**Q: Do you know what 'learning' something means? (S2)**

**A: I think it's when you go to school and you learn . . . you just learn. (S2)**



In attempting to explain *what* learning means, students often discussed the *purpose* of learning instead. They were unable to make the distinction between their understanding of what learning is and why learning is important. Statements typically made reference to learning for the purposes of being educated and gaining employment in their adult future. For example,

- Q:** Annie's back . . . What does it mean to learn in Year One? (R2)  
**A:** Um . . . things like you get to learn things so you are able to get a job. (R2)  
**Q:** Annie is sad because she doesn't know what it means to learn in primary school. Can you tell her? (S1)  
**A:** You need to learn so you can have a job and be good at it. Then you get a wage so you get more money. (S1)  
**Q:** Annie wants to know again what it means to learn in Year One. (S2)  
**A:** When you are older, and when really old you have got a job and you can get a raise and get more money. (S2)

This aspect of working and earning a living is characteristic of the social orientation of this conception where there is a perceived need to conform to socially acceptable behaviours. The following statements are examples of behaviours indicative of the classroom culture where it appeared that students believed compliance with certain rules and expectations is a precondition for learning to occur.

- Q:** Can you think of something that you learned in preschool last year? (R1)  
**A:** Not to run inside the classroom. (R1)  
**Q:** Can you think of something you've learned in Year One so far? (R1)  
**A:** No talking in class and only if you raise your hand. (R1)  
**Q:** Tell me something you learned in preschool last year? (S1)  
**A:** I learned how to cross your legs and fold your arms . . . we also have to do it at school.(S1)

This notion of 'preconditions to learning' is useful in isolating the *how* aspect of this conception. As the following statements indicate, learning is seen as something that will automatically happen if an individual satisfies the pre-requisites of attending school, listening to the teacher and behaving.

- Q:** What's the best way to go about learning this? (M1)  
**A:** Well if you go to school you'll learn a lot. (M1)  
**Q:** How are you going to go about learning [maths and language] in school? (M1)  
**A:** Just don't talk when the teacher is talking. (M1)  
**Q:** What's the best way to go about learning? (S1)  
**A:** Go to school . . . listen to the teacher and be good. (S1)  
**Q:** What should she (Annie) do at school to learn? (S2)  
**A:** Do what the teacher tells you. (S2)

There is no evidence to suggest that children who hold this conception of learning are aware of their mental learning processes or whether a mental world even exists. Students who possess metacognitive ability are cognizant, to some degree, that they have control over their own learning. This awareness is not evident in Generic Learning where students believe learning will automatically 'happen' as a result of school attendance and good behaviour.

As a final note to this category, it should be stated that answers classified in Generic Learning were often in response to 'broad' questions about learning that were not related to any particular concrete learning experiences. This may provide one reason as to why student responses are vague, given the difficulty young children have in articulating their thoughts about learning in a general sense.

### Physically doing

Students who held this conception associated learning with something they can do or are learning to do, and often failed to make any distinctions between learning and doing.

- Q:** What did you learn with Mrs D this morning? (R2)  
**A:** We did a story. (R2)  
**Q:** What do you especially like learning in Year One? (R2)  
**A:** Doing an 'e' like that [on pictures]. (R2)  
**Q:** Is there anything else that you've learned really well in class? (S2)  
**A:** Yes - I like doing those [building sticks]. (S2)

Learning was seen to involve physical participation in an activity whether it be carrying out a manual or intellectual skill. Activities can involve the whole body,

- Q:** What do you mean when you say 'you just learn some more'? (S2)  
**A:** Like you get to shoot baskets better. (S2)

or the manipulation of materials of some kind,

- Q:** Renae, tell me some things you've learned really well. (R2)  
**A:** I'm really good at doing dogs . . . cause we can make the paper into dogs. (R2)

On the surface, the intellectual skills of reading and counting possessed by the 5 year old students would appear to be related to internal cognitive processes. In certain instances, however, it is apparent that these young children are in fact focusing on their ability to *do* them with little indication that they *understand* them. Pramling also interpreted these phenomena from the preschoolers' point of view as skills of doing (1983, p. 94).

- Q:** Can you tell me something you've learned in Year One so far? (R2)  
**A:** We've learned how to say our tables and  $1+1=2$ . (R2)  
**Q:** Can you tell me about the times tables? (R2)  
**A:** I've forgotten about the tables. (R2)  
**Q:** What's your ABC? (R2)  
**A:** Well it's . . . like singing "A B C D . . . Z . . . Now I know my ABC, won't you come and sing with me". (R2)

The theme of 'personal involvement' is also evident in the students' explanations of *how* they learn. In many instances, learning was perceived to occur as a consequence of 'just doing' an action. As Pramling points out in relation to a similar finding, "The learning is a consequence of being involved in doing and nothing else" (1983, p. 111).

- Q:** How did you learn to write? (S2)  
**A:** I didn't learn at all. I just tried . . . I just did it. (S2)

This notion of learning is extended when students acknowledge that they can learn to do an activity by imitating someone whom they perceive as being an expert in the area, usually as a consequence of their superior status (eg, teacher, parent, older student, older sibling). For example,

- Q: How did you learn to draw flowers really well? (R1)**  
**A: Cause Mummy drew one and I copied and I kept on copying it and I learnt to do it. (R1)**  
**Q: How did you learn to be such a good reader? (R2)**  
**A: Cause the teacher did it first and then we copied her. (R2)**  
**Q: How did you learn [to write 'here is' and 'a']? (S2)**  
**A: Well, Mrs D, she just did it and then we just copied. (S2)**

Even though these students are physically involved in the activities, they are regarded as passive learners because their own initiative in learning is not apparent. The following statement effectively conveys the students' sentiments of dependence on others for learning to occur.

- Q: Do you think you could learn how to read and write on your own? (R2)**  
**A: No. I'm not able to do things like that on my own . . . someone has to show me how to do them. (R2)**

However, when the notion of 'practice' is introduced, so is the notion of metacognition. When students discussed the need to do something repeatedly in order to improve, they demonstrated their awareness that firstly, learning is a deliberate act on the part of the learner and secondly that it can be controlled and regulated. Pramling has suggested that this awareness represents a fundamental step in the development of the consciousness of learning (1983, p. 112). This is evident in the following statements.

- Q: How do you learn things? (R2)**  
**A: If you practise it very, very much you will be able to remember it and get it right. (R2)**  
**Q: How did you learn to play [basketball]? (S2)**  
**A: I've played it millions and trillions of times. (S2)**  
**Q: How do you think you could become a really good player? (S2)**  
**A: You just need to practise a lot of times . . . do it . . . and it doesn't matter if you get a goal or win you just still learn some more. (S2)**

### Knowing More Things

Knowing about things and how to do things is the focus of this conception, as it is for Pramling's (1983) To Know conception. It is also similar to Increasing One's Knowledge identified by Marton et al. (1993), where learning is perceived to be the accumulation of facts that would appear to hold little significance to the students personally.

**Q: Have you learned anything in Social Studies so far? (L1)**

**A:** There was a red dot on one of the planets and it's really big. (L1)

**Q: Anything else? (L1)**

**A:** Ah, the first thing to go into space was a dog [and] I've learned that the Venus Fly trap doesn't have teeth. (L1)

The distinctive characteristic of this conception is that quantity of learning is emphasised over quality and the more one knows, the smarter he or she is perceived to be. Hence adults are more intelligent than children because they have had a greater opportunity to find things out about their world.

**Q: Learning is . . .**

**A:** Knowing more things, like having to know more things about the world so if a person says what's 12+12 you would say 24. (L1)

**A:** Knowing things - new facts and more things. (M1)

**Q: Why would being older help you learn? (L2)**

**A:** Well cause as you get older you are able to know more. (L2)

Often there is no real description of how information is acquired except to say that the learner absorbs what is seen or heard from a more knowledgeable source such as the teacher, parents, older siblings, older students, books, television etc. The consumption metaphor, used by Marton et al. (1993) to describe the *how* aspect of Increasing One's Knowledge, also captures the 'picking up, taking in and storing' aspect of this conception.

**Q: How did you learn about those things [world events]? (A1)**

**A:** I just watched the news and they said it and then it just sunk in. (A1)

In many instances, however, students demonstrated metacognitive control over their learning by acknowledging that retention of new knowledge occurs through memorisation. Although the emphasis was mainly on storing facts using basic cognitive strategies such as rote rehearsal, these students nevertheless indicated their awareness that learning is a conscious decision on the part of the learner.

**Q: Annie wants to know what learning means? (V1)**

**A:** To be given a piece of information that you never have heard about before and to lodge it up here (points to head) and to remember what it is. (V1)

**Q: What is the best way of doing that? (V1)**

**A:** Doing activities then repeating things over and over again until you know it and have the right answer. (V1)

### Knowing Harder Things

This category is similar to Knowing More Things in that emphasis is placed on expanding one's body of knowledge. It is more sophisticated, however, in that knowledge is not described as comprising discrete segments of independent information, but rather as a knowledge tower where the acquisition of one piece of information forms the foundation upon which other related, yet more complex segments of information can be built. There is no indication in the data to suggest that understanding the information is important.

**Q: Do you have any idea what people learn in Year Four? (M2)**

**A:** You might learn the same things as in Grade Three except a bit harder. Like in nature study we did trees. You could do that but we would probably learn different things. (M2)

**Q: Why do you think it would be difficult to learn other things if you don't know say how long it takes to go around Pluto? (M2)**

**A:** Well because you could do things like that except a bit more complicated. And if you didn't know the first step it would be very hard to do the second sort of harder step cause they're probably related. (M2)

The *how* aspect of this conception is the main factor that distinguishes it from the previous category. While knowledge is simply absorbed in Knowing More Things, here it

is learned by being linked to similar existing structures. Implicit in this process is the metacognitive quality of awareness that knowledge is internally constructed and that learning is a continuous process.

**Q: How do you work things out? (A1)**

**A:** Well, from previous years like you've learned things so you would add to that. You do different things - harder things as you go to different grades. In Year Six and Seven you normally revise things and you also do harder things. (A1)

There is no evidence to indicate that Pramling (1983) found this slightly more sophisticated knowledge-oriented conception of learning with her preschool students, which suggests that older primary school students may view knowledge in a more advanced way.

### Searching for Meaning

In contrast to the previous categories, understanding the overall meaning of information is the key to learning in this conception. This is also characteristic of similar 'meaning orientated' conceptions as identified by Pramling (1983) and Marton et al. (1993). Learning was seen to involve grasping the meaning of things which was often described as a light 'clicking' on or occurring when ideas become 'clear' and sense can be made of them. The notion of understanding for these students can be likened to the snapping of puzzle pieces into place such that the overall picture becomes more defined.

**Q: Do you really need to understand things to learn them? (A1)**

**A:** I need to understand things. I get angry with myself if things don't click. (A1)

**Q: What do you mean 'you never got it'? (A1)**

**A:** I just didn't understand it very much. I just think Mrs P has made it more clearer. (A1)

**Q: What do you mean by 'understand'? (A1)**

**A:** Something went 'click' in my brain and well I can just do them more easily than I could last year. (A1)

Pramling suggests that children who hold this conception are aware of their active role in the learning process and that *learning comes from within* (1983, p. 101). This advanced metacognitive awareness is evident in the adoption of similarly advanced metacognitive strategies. For example, the following student regulated the quality of his learning by isolating important points, relating ideas together and generally searching for meaning.

**Q: How does Mrs P explaining something to you again help you understand it? (V2)**

**A:** You don't exactly understand it the first time but the second time you make up the points you've missed and it will become clearer. (V2)

**Q: How did doing an experiment help? (V2)**

**A:** Well cause I already knew a bit about volcanoes [but by doing an experiment on them, it became] a lot clearer and . . . it helped to see what is really happening. You need to see what is happening to really understand things. (V2)

Knowing Harder Things and Searching for Meaning are similar in the sense that learning involves linking new to old information. However it is this linking process that separates them into two qualitatively different conceptions. Linking information in Knowing Harder Things is an expansion process involving the development of a larger body of facts that increase in complexity. The objective of linking new to old information in Searching for Meaning is to construct meaning and understanding.

There is a notable affective dimension related to this conception. The search for the overall message in material is often attached to a personal feeling of satisfaction when understanding has been gained. Students interviewed by Entwistle and Entwistle (1992) described a similar emotional response in relation to the recognition of meaning and significance of material. It seems understanding the content is paramount and therefore quality learning overrides quantity.



- Q: How do you know when you have understood something? (A1)**  
**A:** Well you just feel good about it cause it makes sense and you know what it means. (A1)  
**Q: How do you know when you have understood something? (V2)**  
**A:** Well, it's like a feeling . . . I feel that something is clear and I'm happy about it cause I know what it means. (V2)

However, there is no indication that the students build their own theories about the information they attempt to learn. Rather, they are content in their endeavour to make sense of pre-existing theories.

A final characteristic of this category is students' awareness that the process of understanding a simple or abstract concept does not simply happen, but rather is achieved as the result of carrying out activities which students perceive as meaningful and relevant to the learning situation and to their lives.

- Q: Why would doing the activity [as opposed to reading about it in a book] help you? (A1)**  
**A:** Well you just learn as you are doing it instead of the book telling you what to do. It makes more sense when you do it like that. You could actually see what's happening and what you do and why. (A1)  
**Q: Can you give me an example? (A1)**  
**A:** Yeah, I remember in Year Four we were learning about maps of things so we walked around the school to find the positions of things and draw a map of it [the school]. It was loads of fun and I learned about maps too. (A1)

### Constructing New Understandings

The active involvement of the learner is particularly evident in this category where thought processes within the student allow him or her to not only grasp meaning inherent in the information but to synthesise this information so that a more personal theory or understanding is constructed.

- Q: What about the shape of Holland. Say you were looking at it on a map - one day they are going to change the shape of the country. Does that matter? (V1)**  
**A:** Nope it doesn't . . . because the shape of the land doesn't matter. It's what the quality of the land is and how well it's being used. (V1)  
**Q: What do you mean? (V1)**  
**A:** It means if you made a boulder that looked really great and in the end it turned out it couldn't be used for anything it would be pretty pathetic and pointless. (V1)

Students who possess this conception are open to a multitude of other theories and perspectives. Often the learner will change his or her way of thinking after having considered other points of view, although this ability to revise one's thinking is not a prerequisite for this category.

**Q: Do you help each other in groups to learn the work? (V1)**

**A:** Yes . . . You help each other because everybody has a different view of how it's done and when you put them all together you see that it can be done lots of ways even if some are better than others. (V1)

**Q: Why does hearing different points of view . . . help you learn? (V1)**

**A:** Well . . . like, you think that everybody thinks like you but they don't and I always think that my way is right but if you stop and listen to what the group says you usually find better ways of doing things . . . like with the dikes etc. (V1)

This conception is similar to the fifth category identified by Marton et al. where students describe learning as a change in the way they perceive things (1993, p. 290).

There is a fine line of distinction between the *what* and *how* aspect of this conception. The *what* aspect is seeing learning as a change in one's way of thinking, and the *how* aspect is allowing this change to occur by being open to other perspectives.

**Q: How did watching kids in those situations help? (A2)**

**A:** Well you could see what they were actually going through and what they had to do so if you were in that situation you kind of asked yourself what would you do. (A2)

In summary, six conceptions of learning have emerged from the data. They are Generic Learning, Physically Doing, Knowing More Things, Knowing Harder Things, Searching for Meaning and Constructing New Understandings. Each level of conception of learning has been described in terms of its *what* and *how* component. The level of metacognitive awareness evident in each conception of learning has been identified and this issue has been addressed as the six different levels were defined.

A more global understanding of the nature of these six conceptions can be gained by grouping them into the following four orientations to learning. These orientations are comprised of like conceptions and can be used to describe a student's general tendency towards learning. Even when a student indicates an awareness of more than one conception of learning (and they generally do), it is always possible to ascertain from the interview transcripts, their general orientation in terms of the most frequently stated conception.

Level 1 incorporates the Generic Learning conception and has a *social orientation*. Learning is simply something that one must do in order to survive in the classroom and in the adult world.

Level 2 incorporates the Physically Doing conception and has an *action orientation*. Learning is not so much associated with a mental world as it is with the ability to physically do something.

Level 3 incorporates the conceptions of Knowing More Things and Knowing Harder Things and has a *knowledge orientation*. Both these conceptions emphasise learning as the need to know and build upon existing knowledge. Although the conception Knowing Harder Things shows a greater sophistication in the way this knowledge is learned, it is still essentially quantitative in nature.

Level 4 incorporates the conceptions of Searching for Meaning and Constructing New Understandings and has a *meaning orientation*. Learning is synonymous with extracting

the overall meaning of a concept even to the extent that one's existing understanding is altered.

At times, these four levels will be referred to in the discussion as a general orientation of the conceptions of learning held by the different age groups.

### 5.3 Overview of the Discussion

The discussion section provides answers to the following subsidiary research questions:

1. What differences exist in the conceptions of learning held by 5, 8 and 11 year old students?
2. What similarities and/or differences exist between the conceptions of learning held by the students in this study and those identified by Pramling (1983)?
3. What similarities and/or differences exist between the conceptions of learning held by the students in this study and those relating to adult learners?

These questions are discussed in relation to the study's theoretical framework which is based on constructivism. While this perspective acknowledges that certain characteristics of the lower-level conceptions are fundamental to learning, it is more in line with the two highest conceptions of learning that are meaning-orientated. The subsidiary research questions are also discussed in relation to the study's conceptual framework which is concerned with the influence context and culture have on the formation of conceptions of learning.

The first subsidiary research question has been answered by identifying the predominant conceptions of learning held by each age group. This process was facilitated by placing

the study's findings on a continuum, which is discussed further in Section 5.3.1. In exploring the different conceptions of learning held by the three age groups, it was found that the following issues were examined simultaneously, although not necessarily in the same order.

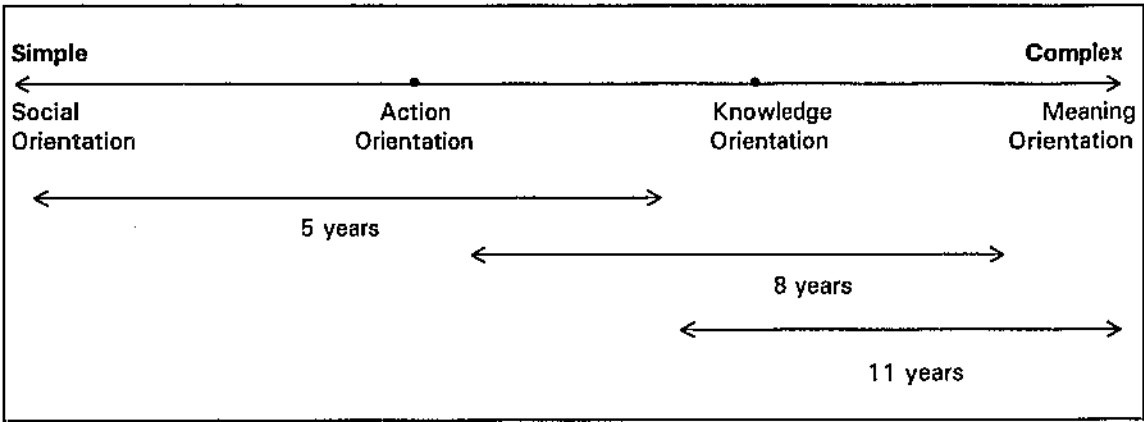
- (a) the main conception of learning held by each age group in relation to constructivism.
- (b) the main conception of learning held by each age group in relation to cultural and contextual issues.
- (c) the main conception of learning held by each age group in relation to Pramling's (1983) findings.
- (d) the main conception of learning held by each age group in relation to adult conceptions of learning.

Consequently, the three subsidiary research questions are not answered separately but instead discussed as a related whole. Furthermore, when comparing the conceptions of learning held by the students in this study to those held by adult learners, reference has been made to the findings of Marton et al. (1993) which generally encompass those of Perry (1970) and Säljö (1979).

### 5.3.1 Discussion

Because the principles underlying hierarchies and continua differ significantly (Samuelowicz & Bain, 1992), it is not the author's intention to rigorously fit this study's findings onto a continuum. However, the concept of a continuum is useful in

diagrammatically representing the predominant conceptions of learning held by each age group, and allows some basic analysis to be undertaken. The continuum, as presented in Figure 4, also reflects the progressive nature of conceptions of learning, not as fixed characteristics of an individual's learning style, but as attributes that change in response to the growth and development of the individual as a learner, and perhaps in response to changes in the learning context.



**Figure 4.** Orientations of learning held by the 5, 8 & 11 year old students.

### 5 Year Old Students

The 5 year old students spoke often about learning in the Generic Learning sense. Their inability to explicitly describe learning was possibly partly due to the difficulty young children have in articulating their understanding of any abstract phenomenon. However, the social emphases of education in the early years of schooling provides an insight for understanding the origin of this conception. For example, in the pursuit of effective teaching and learning in our culture, teachers believe there are certain rules to which students must conform in the classroom. These social behaviours, such as raising one's hand to speak, are recognised as preconditions to learning. The emphasis placed on

these preconditions in the early years of school is so great that it seems to influence students' understanding of learning, as is seen in the Generic Learning conception.

The concept of socialisation is also a key factor in explaining the emphasis students place on the *purpose* of learning when attempting to describe *what* it is. From a very early age children are 'encultured' into the notion that they must fulfill their social duty as responsible citizens by (eventually) becoming members of the workforce and contributing to society. Parents, eager for their children to succeed, stress the importance of obtaining a sound education in order to fulfill this role. Given the limited school experience of these young learners, it is not surprising that they adopt a very purpose-orientated understanding of learning that is predominantly influenced by their families and society at large.

It is interesting to note that the Generic Learning conception was not evident in Pramling's (1983) study. In fact, the emphasis that the students in this study placed on learning in relation to their adult future is contrary to the findings for students in the Swedish schools. In an earlier study, Pramling (1981) found that Swedish preschool children did not relate learning to their future, nor did they see it as having any implications for their future existence as adults (cited in Pramling, 1983, p. 13). As previously discussed, children's thoughts are created in relation to their social world, and short of describing both Australian and Swedish learning milieus, it can be inferred that cultural differences between the two societies are reflected in the findings.

Within the basic Generic Learning level, there was no evidence that students understood that they constructed knowledge or, in fact, that a mental world existed. This conception

encompassed a very rudimentary understanding of learning to which possibly all children can relate as a result of socialisation. The fact that both the 8 and 11 year old students also held this conception (albeit to a lesser degree than the 5 year old students) reinforced the notion that this level is a very general, global understanding of learning and is possibly the foundation upon which all other conceptions are developed. Figure 4 does not indicate this, however, as its primary objective is to illustrate the *predominant* conceptions held by each age group.

The dominant conception held by the 5 year old students, however, was that learning is synonymous with 'doing'. Students in this age group perceived learning to be a physical act that occurred as a result of carrying out manual or intellectual activities. There was little evidence in the data to suggest that these skills were performed in conjunction with internal thought processes, but rather in imitation of other people. This notion is in keeping with Piaget's theory of cognitive development where interaction with the environment precedes internal thought processes and is a natural stage through which young children progress (Woolfolk, 1990, p. 48).

The 5 year old students' conception that learning is Physically Doing was possibly a reflection of the teaching context and the 'action-based' structure of the curriculum in the first year of school. In accordance with the theoretical assumptions underpinning early childhood education (Bredekamp, 1990, p. 3), the activities described by the 5 year old students in this study were predominantly 'hands-on' where the teacher demonstrated, instructed and supervised the children as they interacted with various educational materials. This hands-on approach to learning is unquestionably an essential aspect of a constructivist curriculum, but in itself does not make an activity a



constructive one. For example, the 5 year old male described how he is learning about the colour yellow:

**Q: What is the Yellow Table in your class about? (S1)**

**A: Cause it is Yellow Week . . . and before news we put [yellow objects] on that table. (S1)**

The holding and feeling of yellow objects placed on a 'yellow table' will not necessarily facilitate the understanding of the colour yellow. In a constructivist setting, the students would be encouraged not only to manipulate these objects but to experiment with them and pose questions about them. In short, the constructivist sees the essential activity as what goes on in the student's head and not in his or her hands.

In comparing this study's findings to adult conceptions of learning, the existence of similar knowledge and meaning-oriented categories would suggest that primary school and adult learners generally perceive learning in similar ways. One cannot dismiss, however, the fact that the first two categories in this study (Generic Learning and Physically Doing) were not evident in the findings of Marton et al. (1993). Evidence that these two basic conceptions of learning were primarily held by the 5 year old students suggests that, compared to older learners, young children have unique perceptions of learning. An interesting question to emerge from this, and one that cannot be answered within the confines of this study is "What happens to these basic notions of learning as students develop - Are they subsumed into the adult-like ones or phased out altogether with the influence of formal schooling?"

### 8 Year Old Students

While the 8 year old students occasionally described learning as 'doing', they predominantly spoke of it in terms of Knowing More and Knowing Harder Things.

- Q: What do you mean you have to learn? (L2)**  
**A: If you don't learn . . . you won't know as much as other people. (L2)**  
**Q: Did someone teach you that  $200 + 200$ ? (L2)**  
**A: You always do the easy ones first and then when you know them, you can do harder ones. (L2)**

The students typically referred to learning this knowledge from an external source such as the teacher, text-books, worksheets.

- Q: How did you learn about the five food groups? (M2)**  
**A: Mrs C . . . and in our health book it's gotta a page where you write down all the fruit and vegetables that you can think of. (M2)**  
**Q: What things have you been doing with Mrs M to learn [about space]? (M1)**  
**A: Well there's this big book and it's got all the planets on pages and it tells all about them. And we've been doing some worksheets about them and read some books. (M1)**

It appeared that the 8 year old students, and to a large extent the 11 year old students, believed people need facts and information in order to think and learn. This particular view of knowledge is possibly a reflection of the school culture where the amount of information students are expected to know increases as they progress through the system. To handle this voluminous amount of information in a time-efficient manner, teachers typically rely on expository teaching methods to transmit ready made pieces of knowledge to their students (Biggs & Moore, 1993, p. 20).

In an environment where the objective of learning is to increase the volume known, quantitative conceptions of learning, such as Knowing More and Knowing Harder Things, will prosper. While constructivists acknowledge that content knowledge is important, they argue that accumulating bits of information for the sake of knowing more is pointless (Etchberger & Shaw, 1992, p. 411). Instead, constructivists believe worthwhile learning experiences occur when students are encouraged to use high-level cognitive processes (eg, predicting, questioning, posing and solving problems) in an effort to *understand* content knowledge (Tobin, cited in Etchberger & Shaw, 1992, p. 412).

The conceptions that learning is Knowing More and Knowing Harder Things are similar to the adult conception of learning, Increasing One's Knowledge (Marton et al., 1993). In all instances, emphasis is placed upon the amount of information that one is able to obtain, with little or no attention given to the learning process itself. It can be inferred from this study's data, as well as related research, that students who hold this conception believed themselves to be powerless participants in the learning process and thus were dependent upon an external source to obtain knowledge which, for them, constituted learning.

Although Pramling found a similar knowledge-oriented conception of learning in her study, she made no attempt to liken it to the adult conception, Increasing One's Knowledge (Marton et al., 1993), but in fact asserted that a significantly large gap exists between a child's and adult's perspective of learning (1983, p. 95). It can be inferred from the findings of this study, therefore, that the gap between primary school students' and adult students' conceptions of learning is less pronounced than the gap between preschool students' and adult students' conceptions of learning. Perhaps the more formal experiences of primary school, as opposed to the less formal ones in preschool, encourage students to adopt adult-like conceptions of learning.

### 11 Year Old Students

The 11 year old students, while predominantly holding the view that learning was both Knowing More and Harder Things, also showed that understanding material was important. Although these students only occasionally described learning as Searching for Meaning, they demonstrated an awareness of learning as something beyond building a knowledge bank, which indicated their evolution as learners. This desire to understand was also

characteristic of the fourth adult conception identified by Marton et al., (1993) where students were actively engaged in their learning and empowered with high-level cognitive strategies to think and learn for themselves.

While discussing small group work as a mechanism for learning, the 11 year old male student described his enjoyment in hearing his peers' thoughts on things and how their ideas assisted him in Constructing New Understandings. Research by Perret-Clermont (cited in Chaille, 1991, p. 16) found that children responded differently to other perspectives when their source was another child as opposed to an adult or book. They were more open to their peers' perspectives which often conflicted with their own. The resolution of conflicting perspectives eventually led to reflection and ultimately intellectual growth. This conception of learning was the most mature finding in this study and was also considered sophisticated in adult learning terms. Marton et al. (1993) described similar advanced thought processes in their fifth-level adult conception of learning, *Seeing Things in a Different Way*.

The fact that the male 11 year old student held a sophisticated conception of learning in relation to a small group learning situation may be a further indication of the influential role that the teaching context plays in the formation of conceptions of learning. It seems that instructional methods that encourage verbal communication and interaction between students facilitate the conception that learning comes about through active thought processes where concepts and understandings are internally constructed. From a constructivist perspective, the process of collaborating with peers is essential to learning. It is through discussion with others that students are able to negotiate the meaning of a concept by questioning their existing understandings as well as explaining,

evaluating and clarifying new and developing understandings (Tobin, cited in Etchberger & Shaw, 1992).

The conception identified in this study that learning is Searching for Meaning is similar to the conception that learning is Understanding which was identified by Pramling (1983). Both are oriented around the notion that learning is abstraction of meaning inherent in material. There was no evidence in Pramling's (1983) findings, however, of the conception that learning is the Construction of New Understandings.

### General

Analysis of the continuum in Figure 4 revealed that although the conceptions of learning held by the three different age groups were markedly different, the knowledge-orientated conceptions of learning were common to them all (and consequently preceding levels due to the nature of hierarchies). This is explored further in Section 5.4. The continuum also indicated that conceptions of learning increase in sophistication with age and although it was not the purpose of this study to analyse this developmental pattern, its distinct correlation with Pramling's (1983) findings warrant a brief comment.

In her attempt to trace the point when children first became aware of their ability to learn, Pramling (1983) discovered a relationship between Piaget's stages of cognitive development and the development of conceptions of learning. Piaget (cited in Pramling, 1983, p. 143) contended that the thoughts of very young children are provoked by physical interaction with their environment and that action precedes thought. As children develop, so does an alliance between their motor and mental activity, until finally their actions are controlled by thought. The ages at which children pass through

these stages correlated with the ages of the children in Pramling's study and their conceptions of learning. For example, the youngest student's understanding of learning was dominated by doing things whereas the older students held a more thought-directed notion of learning.

In addition, the continuum represents a general summary of the findings but does not clearly show that some students held a repertoire of conceptions that spanned the whole continuum. In fact, the hierarchical nature of the conceptions was reaffirmed with all students expressing conceptions at levels preceding their maximum level. That is, irrespective of the level of conception of learning expressed by the six students, it was always possible to identify lower, less sophisticated conceptions of learning in their transcripts.

Furthermore, although the continuum shows a very general picture of the dominant conception held by each year level, it should be noted that students of the same year level also exhibited differences as well as the obvious similarities. For example, the 8 year old female student at one stage discussed learning as Searching for Meaning which was not evident in the dialogue with the 8 year old male. From this information it cannot be said that these two students are of different intellects or that one is more motivated than the other, but rather they are at different stages in their development as learners.

#### 5.4 Educational Implications

As previously mentioned, all students in this study, to a greater and lesser extent, associated learning with gaining knowledge. If, as Biggs and Moore (1993, p. 15) state,

schools generally aim to produce independent learners who construct meaning, why do students place so much emphasis on accumulating knowledge?

The teaching context may once again be partially responsible for this. Teachers, who genuinely aspire to develop active learners, are often unable to focus on the processes of learning as they plough through a content-laden curriculum. Curricula demands, coupled with time constraints, are the primary reasons why teachers rely on quick and easy methods of teaching and assessment. Lessons are typically centred around the one-way transmission of information from teacher to student, and tests generally emphasise low-level cognitive processes in their assessment of the students' ability to reproduce this information (Fleming & Chambers, cited in Crooks, 1988).

While content is arguably important, understanding its meaning should be the principal objective of teaching and learning. An emphasis on understanding material requires teachers to make explicit the links between content and the processes involved in learning that content. This means developing activities (instructional and assessment) that encourage students to think actively about important ideas and concepts, rather than just blindly absorb facts. Active engagement comes about when students are aware of and use metacognitive strategies that facilitate the processing of information (Gaskins & Elliot, 1991, p. 53). Implicit in this statement is the assumption that being aware of one's own thinking processes will enable one to access prior knowledge and see how it connects to new information. This process is the essence of constructivism.

The promotion of active student engagement, through the teaching of metacognitive strategies, is imperative if we are to accept Pramling's (1983) and Candy's (1990)

assumption that a relationship exists between conceptions of learning and metacognitive ability. This relationship implies that the development of students' metacognitive ability, through explicit modelling and teaching, would also encourage the development of increasingly sophisticated conceptions of learning. Higher level conceptions of learning would, in effect, accompany a student's increasing awareness of the skills, strategies and resources needed to make sense of material encountered in class.

Furthermore, in light of the relationship between conceptions of learning, approaches to learning and learning outcomes (van Rossum & Schenk, 1984), the development of higher level conceptions of learning would lead to the use of deep approaches to learning. A student who held the conception that learning is the search for meaning would be more likely to use deep-level strategies such as predicting, isolating important ideas and elaborating when dealing with unfamiliar content. As van Rossum and Schenk's study has suggested, these deep approaches to learning are more likely to produce quality learning outcomes than those that are surface oriented.

Pramling has used the hierarchical nature of conceptions of learning to further explain why students who hold high-level conceptions of learning are at an advantage over those who hold low-level ones (1983, p. 136). Because conceptions of learning are hierarchically structured, the achievement of higher levels does not mean earlier levels are lost. This means that students who hold sophisticated conceptions of learning have access to a large number of strategies (surface, deep and achieving) which makes them flexible with regards to the demands made by different types of learning tasks. In contrast, students who hold low-level conceptions of learning are limited in terms of the types of strategies they have at their disposal. These students may be able to adequately



cope with surface-level tasks, but learning outcomes will be impaired when tasks require the use of deep-level strategies to facilitate the construction of meaning.

The fact that conceptions of learning can indirectly affect learning outcomes identifies the importance of teachers becoming aware of their students' conceptions of learning. Not only can a student's conception of learning account for his or her use of certain strategies, but it might also explain why his or her learning outcomes are at a variance to those expected by the teacher (Säljö, 1987, p. 104). As previously discussed in Section 2.3, a mismatch between teachers' and students' conceptions of learning may cause confusion and uncertainty as to what was taught and what was actually learned. Teachers can use the identification of conceptions of learning as a diagnostic tool to pinpoint their students' general approaches to learning, and then use this information as the starting point to the development of meaning-oriented conceptions of learning.

A powerful understanding to emerge from the data is that students generally hold a meaning-oriented notion of learning when activities are interesting and relevant to their everyday lives. For example, when asked how watching a true-to-life video on the pressures of smoking helped her understanding, the 11 year old female student replied,

Well you could see what they were actually going through and what they had to do so if you were in that situation you kind of asked yourself "what would you do?" (A1)

Resnick (1987) has observed, however, that much of what one learns in school does not relate to what one does outside school. Certainly the rote learning strategies and repetitive worksheets so prominent in the comments made by students in this study did not readily transfer to the demands of everyday living. Resnick has also noted that the

mode of learning in school is rarely focused on groups of students thinking and working together, which is the common mode of learning in the real world. The benefits are far reaching when students are encouraged to construct knowledge in a social setting as is clearly evident in the 11 year old male student's comments about cooperative learning,

Um . . . well, you think that everybody thinks like you but they don't and I always think that my way is right but if you stop and listen to what the group says you usually find better ways of doing things. (V1)

The idea that conceptions of learning are affected by experiences both in and out of the classroom, further highlights the necessity for teachers to identify their students' conceptions of learning. This is particularly so for students who hold the Generic Learning conception which seems to be influenced by both societal factors as well as early school experiences.

To summarise the main contention of these implications, teachers must ensure that learning experiences engage students in ways that are personally meaningful to them. This is unlikely to occur if conceptions of learning, held by both students and teachers, are centred around the expansion of existing bodies of knowledge. A precursor to the development of meaning-oriented conceptions of learning is to encourage students to look beyond their passive involvement in lessons and to see learning as an active process that requires their conscious reflection and cognitive engagement.

The notion of making learning itself an issue for conscious reflection requires consideration to be given to the role of context in the formation of conceptions of learning. It requires a complete restructuring of the traditional content-focused curriculum to one that is more metacognitive in nature. Teaching metacognitive

strategies will equip students with an array of deep-level strategies which will facilitate their understanding of various learning tasks.

To genuinely challenge students to develop sophisticated conceptions of learning, teachers must seek to understand learning from their students' perspectives. This means acknowledging societal, as well as past and present learning experiences in the formation of conceptions of learning. Recognition of these experiences will enable teachers to develop curricula that will move students from the familiar to the unfamiliar. This transition from the known to the unknown is paramount as students endeavour to construct new understandings not only about concepts encountered in class, but about the phenomenon of learning in general.

### 5.5 Chapter Review

This study identified six conceptions of learning as a result of exploring primary school students' understanding of the notion of learning. These conceptions were similar to Pramling's (1983) findings in that they ranged from learning as doing things, to learning as knowing things, to learning as understanding things. An additional conception of learning was identified, which the author termed Generic Learning due to its vague, ill-defined nature. These findings have been placed into an hierarchy in relation to the study's theoretical framework, which is based on the constructivist view of learning.

Also outlined in this chapter were the similarities and differences between the findings and the conceptions of learning described by adults (Marton et al., 1993). The similarities and differences between the conceptions of learning held by the three age groups were discussed and it was found that although differences exist, all age groups

have a general orientation towards a conception of learning where knowing things is important. These, and other findings, have raised significant educational implications which need to be addressed. They have also identified a need for additional research to be carried out in this area. These issues, along with the limitations of this study, are discussed in the following chapter.

## CONCLUSION

### 6.1 Introduction

This chapter summarises the main findings of the study. In addition, the limitations of the study are acknowledged and areas for future research are identified.

### 6.2 Summary of the Study

The purpose of this study was to describe the conceptions of learning held by students in the lower, middle and upper grades of primary school, aged 5, 8 and 11 respectively. Based on the assumption that the most effective method of exploring children's thoughts is by speaking with them, two children from each year level were interviewed twice. These conversations produced a wealth of data from which the following six qualitatively different conceptions of learning emerged:

#### 1. Generic Learning:

Learning is described by students as something that happens through good behaviour and school attendance. This conception has a *social orientation* where learning is seen as a necessity for future employment and survival in the adult world.

#### 2. Physically Doing:

Learning is described by students as the ability to do something. This conception has an *action orientation* where learning is seen to involve physical participation

in an activity, whether it is carrying out a manual skill or the manipulation of materials.

3. Knowing More Things:

Learning is described by students as the accumulation of information such that they increase their stores of knowledge. This conception has a *knowledge orientation* where the more one knows, the better a learner one is.

4. Knowing Harder Things:

Learning is described by students as the accumulation of information that increases in complexity. This conception has a *knowledge orientation* where learning is seen as the acquisition of facts that form the foundation upon which related, yet more complex facts are built.

5. Searching For Meaning:

Learning is described by students as the ability to make sense of information. This conception has a *meaning orientation* where learning is synonymous with the overall understanding of material.

6. Constructing New Understandings:

Learning is described by students as the synthesis of information such that more personally relevant theories are developed. This conception has a *meaning orientation* where learning is seen to involve the construction of new understandings.

These conceptions of learning are similar to those Pramling (1983) found in her study with Swedish preschool students. A prominent difference, however, is the identification of the Generic Learning conception which the author has placed at the most rudimentary level in the hierarchy. In addition, two knowledge-oriented conceptions of learning emerged in this study as opposed to only one identified by Pramling. Furthermore, the latter four conceptions of learning found in this study have many similarities to the adult conceptions of learning identified by Marton et al. (1993).

The emergence of six qualitatively different conceptions of learning emphasises the contrasting nature of students' interpretations of the term 'learning'. This finding supports Svensson's (1979) assertion that learning has not one but several meanings depending on the interrelationship that occurs between individuals, contexts and cultures (cited in Pramling, 1983, p. 12). Consequently, teachers must not assume that all students perceive learning in the same way, but rather endeavour to understand variations in its meaning and the implications these variations are likely to have on the way students approach their learning.

Although the conceptions of learning held by the three different age groups were markedly different, the knowledge-oriented conceptions of learning were common to them all. This finding raises implications for the teachers in light of the fact that knowledge-oriented conceptions of learning have been associated with surface approaches to learning and low-level learning outcomes. The challenge for these teachers is to promote meaning-oriented conceptions of learning which have been associated with deep approaches to learning and quality learning outcomes (van Rossum & Schenk, 1984).

Essentially, this means adopting a constructivist approach to teaching and learning, recognising that it is the students' construction of understanding that is integral to learning, not the transmission of ready-made pieces of knowledge. Understanding comes when students use metacognitive processes to engage themselves in purposeful lessons that are relevant to their everyday lives. By developing a curriculum that acknowledges the link between content and process, students will be encouraged to become more reflective learners who strive to understand concepts encountered in class as well as the phenomenon of learning in general.

### 6.3 Limitations of the Study

Potential limitations of the study are associated with threats to intrinsic adequacy, impartiality, replicability and extrinsic adequacy. Section 4.7 described the manner in which such issues were addressed. However, three key issues require further recognition.

The small sample of six students was adequate for an Honours level study and forms a valuable baseline upon which other information about primary school students' conceptions of learning can be built. However, to provide a generally applicable set of results, this small data base needs to be extended to include (a) a larger number of subjects, and/or (b) students from a range of socio-economic and socio-cultural areas, and/or (c) students from a range of ability levels.

In addition, the younger students in this study often had difficulty articulating their responses to questions during the interviews. This is a definite limitation in a study where the fundamental aim is to explore conceptions of learning from the students'



perspectives during one-to-one conversations. However, sufficient quality responses were elicited by following recognised protocols. Furthermore, the results of Pramling's (1983) study, which are widely accepted by researchers in this area (Marton et al. 1993; Morgan, 1993), were based on verbal data gathered from students younger than those used in this study.

Finally, because the author was primarily responsible for the collection and analyses of data, researcher bias was an important issue to address throughout this study. This was achieved by undertaking a program of external review and verification. Nevertheless, it is acknowledged that bias can never be ruled out fully.

#### 6.4 Recommendations for Further Research

In carrying out this study, other related issues beyond its scope became apparent. These suggest directions for future research.

For instance, in response to the limitation of size and scope of this study, the same project needs to be replicated on a larger scale with a greater number of students from a cross section of schools. A larger data base would provide more comprehensive information, and therefore greater credibility, when extracting the different conceptions of learning held by primary school students.

Whilst it was not the intention of this study to examine the factors influencing the formation and development of conceptions of learning, questions relating to their origin were hard to avoid. For example, it was inferred from the data that the emphasis all students placed on the knowledge-oriented conception of learning was a reflection of

conventional teaching methods. To verify this inference, students' perceptions of this phenomenon need to be investigated more fully. Researchers need to enter the classroom context in an effort to identify not only the specific factors that influence the various conceptions of learning, but also the relationships between classroom processes which are integral to their formation. In addition, as was apparent in this study, and in Purdie's research (1994), socio-cultural factors appear to be salient in the formation of conceptions of learning. This phenomenon also needs further investigation.

In conclusion, it is envisioned that whilst this thesis is based on research, the findings have been presented in an accessible way so as to raise teachers' awareness of the integral role that conceptions play in the process of learning. It is imperative that teachers seek to understand learning from the learners' perspectives and encourage their students to experience learning as something which engages each one of them in a personally meaningful way.

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## **APPENDIX A**

### **Letter to Parents**

Carole Steketee  
[REDACTED]  
[REDACTED]

19 February 1995

Dear Parents

As part of my Bachelor of Education (Honours) degree, I am conducting a study into the conceptions of learning held by children in the lower, middle and upper grades of primary school.

Conceptions of learning refer to the beliefs that individuals have about what learning actually means. Such conceptions influence the way information is perceived as well as the way people think, feel and act when confronted by various learning tasks.

In an effort to understand how children in primary school perceive learning, I hope to use your child in my investigations. This will be done by observing him/her as he/she participates in normal class activities. There will be two of these observation sessions lasting half a day each. To identify your child's conception of learning, I will then ask him/her a series of questions based on the learning activities observed. There will be two of these interview sessions each lasting 25-35 minutes.

I would like to reassure you that your child will not be placed under any pressure by participating in this study. Observation will be carried out in his/her natural classroom setting and interview questions will be delivered according to his/her level of developmental ability.

I would be most appreciative if you would permit your child to participate in this study in which case you need to sign the attached informed consent document and return it to Ms D at your earliest convenience.

Please do not hesitate to contact me on the above number if you have any questions concerning the study. Thank you for your assistance in this matter and I would be more than happy to forward on to you my findings as they become available.

Yours sincerely

Carole Steketee B.A (Ed)

## APPENDIX B

### Informed Consent Form

The purpose of this study is to investigate the conceptions of learning held by students at the lower, middle and upper grades of primary school. Information will be gathered by observing the children in their classrooms and then interviewing them in relation to the learning experiences observed.

The name of the participants and their school will remain confidential and the information gathered will be available to the individual participants and their parents upon request.

Any questions regarding the proposed research can be directed to **Carole Steketee**, a student of Edith Cowan University, Education Faculty, on [REDACTED]

---

I, Mr / Mrs / Ms \_\_\_\_\_, have read the information above and any questions I have asked have been answered to my satisfaction. I authorise my son / daughter \_\_\_\_\_ to participate in this activity, realising that I may withdraw him / her at any time.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

## Observation Notes for Year 1 (both sessions)

Observation Session: One  
 Teacher: Mrs D  
 Year: One  
 Time: 8.50 am to 10.30 am  
 24/2/95

LESSON OBJECTIVE	TIME ELAPSED	LESSON STRUCTURE	GROUP SIZE	STUDENT ONE RESPONSE	STUDENT TWO RESPONSE
Story writing (and individual reading with teacher and helping parents)		<p>Intro: Teacher Modelling - Mrs D draws picture on butchers paper and writes a sentence about it.</p> <p>Organisation: Mrs D instructs children to do story in their scrap books. Class divided into approx 4 groups 7-8 students. Two groups work on floor with helping parents. Other groups remain in seats and working individually.</p> <p>Mrs D calls on students at random to read to her. She points to words as child reads.</p>	<p>Whole class instruction. Children in own seats.</p> <p>Groups of 7-8 students. Two groups work in circle on floor with parents. Other children seated at desks.</p>	<p>arrives late to class and goes quickly to her desk. Begins to watch teacher demonstration but whispers to girl sitting next to her.</p> <p>Talks to girls sitting next to her as teacher gives instructions to begin writing story. As she hears her name she moves off to get book and sit down on floor with helping parent and rest of the group.</p> <p>Chats to girl sitting next to her in group as parent talks with other group member.</p> <p>Begins drawing. Stops every now and then to look at other group member's pictures. Continuously looks around at other students in class and, although sitting on other side of room to Mrs D, she is keen on listening to students reading with teacher.</p> <p>Finishes picture and story. Reads story to parent who says 'good' and gives her book to read. Parent reads the book to watches pictures.</p> <p>Returns to her own story to colour picture. Continues to look around at other class members.</p> <p>On teacher's instruction to pack up, quickly puts away scrap book, returns to her seat and waits quietly with arms folded. Mrs D praises her for this.</p>	<p>Fiddles with pencil case. Drops and picks things off floor as teacher demonstrates story writing. Watches teacher every now and then.</p> <p>Continues to fiddle with pencil case. Moves off with boy sitting next to him to get scrap book from drawer and returns to seat to work on story.</p> <p>Has not begun story. Mrs D asks him to make a start, quickly goes to pencil case and sharpens pencil.</p> <p>Begins to draw picture and works quietly. Teacher praises this 'Well done</p> <p>Works quietly and independently on picture and story.</p> <p>Called on by teacher to choose book and read. Teacher points to words and Scott reads. Teacher stops twice to control noisy class).</p> <p>Returns to desk to finish story. Girl passing by stops to chat, smiles and returns to story.</p> <p>Teacher moves around children at desks to mark story. Listens to story. He has difficulty reading his writing but teacher makes positive comments about content.</p>

Observation Session: One  
 Teacher: Mrs D  
 Year: One  
 Time: 8.50 am to 10.30 am  
 Date: 24/2/95

BEHAVIOURS	STUDENT ONE	STUDENT TWO	INTERPRETATIONS
<u>Raises Hand</u>  Answer Questions Ask Questions Other Reasons	I I I  I To answer the closed q "What is the picture of?" II To ask child telling news about object.	I I I  III Asks children telling new closed questions about objects (eg, Where did you buy it?)	Not all chn attending to teacher at beginning of lesson. Unsure if all chn new what lesson was about at first. Little time allowed for wait time after questions asked. Both chn willing to answer the few questions teacher asked.
<u>Approaches Teacher</u>  Ask for help Other reason			No child voluntarily approached teacher at any time. . approached parent helper for help with spelling in story.
<u>Involvement in lesson</u>  Active Passive (what happens when passive)			Chn active when following instructions but majority of lesson required passive involvement (tchr model, chn copy). While tchr dealt with other chn in class both R and S sat and either fiddled or chatted to friends.
<u>Interaction</u>  Teacher/student Student/student Independent	Parent/child - Asks helping Mum how to spell a word in her story. Student/student - Discusses picture with girl sitting next to her.	Teacher/student - Teacher listens to . as he reads his story. Teacher writes correct sentence under . s own work. Student/student - Boy next to . helps him fold his paper as demonstrated by teacher.	Much independent work happening. Although in groups for writing, pretty much an independent activity. interacted with teacher twice after she initiated it. interacted with girl next to her often but not necessarily to do with work.
<u>Praise and Encouragement</u>	- Hasn't gone back to her seat nicely? - Lovely Thanks for sitting quietly? - Good girl (said twice).	Well done (for beginning work). Well done So pleased to see you working well this morning. Very well read I like how you used your finger to follow your words.	Apart from comment on how . read, praise mainly behaviour related and for control reasons. Think praise for R & S was for benefit of researcher.

Observation Session: Two  
 Teacher: Mrs D  
 Year: One  
 Time: 8.50 am to 10.30 am  
 Date: 28/2/95

LESSON OBJECTIVE	TIME ELAPSED	LESSON STRUCTURE	GROUP SIZE	STUDENT ONE RESPONSE	STUDENT TWO RESPONSE
Story writing (and individual reading with teacher and helping parents)		Teacher demonstrates story writing on floor where chn seated in front of her.  Chn organised into groups. They are instructed to get their scrap books and move off into appropriate groups.	Whole class on floor.  Three groups - two with parent helpers other with Mrs D. All groups work at individual desks however.	Walks around and talks to other children during organisation time.  In Mrs D's group.  9.10 - Talking to other chn. 9.15 - Begins drawing picture. Works on story but takes time. Looks around classroom and chats to other students. 9.20 - reads with teacher. Teacher reads most words as R follows words and mouths.  Returns to desk, leans back in chair and watches others.  Raises hand to ask question "Can we colour in our pictures". Teacher answers "Yes, of course".	Raises hand while teacher writes and as chn get organized for writing. At one time tchr looks directly at him but still doesn't ask him what his question is. Eventually gives up and moves off to get book.  Looking for something - aimlessly wonders around room.  9.10 Rocking in chair. 9.15 - Begins drawing picture. Works quietly. Watches child read with teacher. Boy next shows a book which they both try to read together. Scott looks very interested in this book. Turns around to stare at other chn in classroom and then starts to talk with boy next to him. Teacher looks up and reprimands "I told you to start colouring". Sits back listlessly then begins to colour.  Teacher tells chn to move back to own desks, catches glimpse of and says "you're pencils are all over the floor". Comes in classroom 2 mins after lesson begins.  Shows a blue plastic tube.
Colour table and News			Whole class on floor.	Walks quietly. Moves over to play with it. Teacher reminds (says nothing to	with toy and to listen

Observation Session: Two  
 Teachers: Mrs D  
 Year: One  
 Time: 8.50 am to 10.30 am  
 Date: 28/2/95

BEHAVIOURS	STUDENT ONE	STUDENT TWO	INTERPRETATIONS
<u>Raises Hand</u>  Answer Questions Ask Questions Other Reasons	1 1 1 1 1 1  1 1 1 to answer closed questions asked by teacher rest hand raising.	1 1 1 1 1 1 1 1  3 to answer closed questions by teacher, 1 to ask question about unknown as he was never acknowledged, 5 to ask questions of other clin during news.	became disillusioned as the time he spent with hand raised increased. It was not as though his hand was lost among others as his was the only one raised for some time. Appeared happy at commencement of lesson then became agitated and easily distracted. This less (story writing) was better structured than last as clin could follow what was happening.
<u>Approaches Teacher</u>  Ask for help Other reason			Neither students approached teacher for any reason. Felt that this was due to structure of lesson, ie, teacher talk and clin copy; no need to interact except for when teacher marked work.
<u>Involvement in lesson</u>  Active Passive (what happens when passive)	Passive - carries out instructions and waits for further details.	Passive - looks around room and returns to work now and then. No talking to anyone.	Although story writing lesson was in group form, it is appears that was for easy management for parent helpers. Clin still worked predominantly independently. Passive involvement - clin carried out instructions then sat around or talked and waited for further instructions from teacher.
<u>Interaction</u>  Teacher/student Student/student Independent	Aide/student - Aide marks work. unsure of her writing so both work through it together.  Student/student - with girl sitting next to her. Swaps ideas for stories and idle chat. Looks at boy's work on other side of her.	Teacher/Student - reading with teacher; breezes through book. Teacher glad of rapid reading so can move through group easily.	No deep talk or interaction. Contact mainly to ask/answer closed questions, supervise reading or mark work. Independent work carried out remarkably well considering student's age and limited experience in structured school environment.

## **APPENDIX D**

### **Interview Schedule (Semi-Structured)**

These question were fixed in that they were designed specifically to probe the students' understanding of what learning means. They were adapted, however, to suit the age and learning experiences of each child.

1. What did you learn with your teacher this morning?
  - How did you learn that?
2. Tell me something you have learned in Year \_ so far?
  - How did you learn that?
3. What do you especially like learning in Year \_ ?
  - How did you learn that?
  - Could you teach Annie (the puppet)?
4. How do you know when you have learned something?
5. What sorts of things do you think you are going to learn in Year \_ ?
  - How are you going to learn them?
6. What do you think your teacher wants you to learn in class this year?
  - How do you think you will learn this?
7. Does your teacher tell you in lessons what she wants you to learn?
  - What does she say?
  - If she doesn't, how do you know what you are to learn?
8. Why do you think you and all the other kids here come to school?
9. In order to learn something really well, what sort of things would you do to help you?
10. If a little Year \_ came up and asked you "What does it mean to learn?" What would you tell him/her?
  - If he/she asked what the best way to learn is, what would you tell him/her?



11. Do you think you can learn things anywhere other than in school?
- Where else can you learn things?
  - What can you learn in places other than in school?
  - How can you learn them?
  - What things must you come to school to learn?
12. What would you most of all like to learn; if there is something that you would love more than anything to learn, what would that be?
- What is the best way to learn this?
13. I've brought a friend with me today. Her name is Annie. Annie is feeling sad because she sees you here at school learning lots of great things. She would also love to be in Year \_ but she doesn't really know what learning is all about. Can you please try to make her happy by telling her what learning means?
14. She said thanks; that really makes sense. She also wants to know what the best way to learn is. Can you tell her?
15. If you wanted to know how planes fly, how would you go about finding out?

## APPENDIX E

### Interview Transcript

Q.S.R. NUD.IST Power version, revision 3.0.4 GUI.

PROJECT: LEARNING, User CAROLE, 12:24 pm, Dec 23, 1995.

+++++

+++ ON-LINE DOCUMENT: Renae2

+++ Document Header:

\*Date: 28/2/95

\*Interview Two

\*Renae; Female; Year 1; 5 Years

{Year: One

{Age: Five Years

{Sex: Female

\*Q: Do you like your new class?

A: Yes.

\*Q: Did you just do this (worksheet)?

A: Yeah. I put all the words up.

\*Q: What words are they?

A: Sing, play, fly . . . dance.

\*Q: How did you learn to be such a good reader?

A: Cause the teacher did it first then we copied her.

\*Q: So she said these words for you. What did she do then?

A: No. She didn't say anything. . . we just put it up (the words) because she had it on the board and we were able to copy it.

\*Q: So are you able to read?

A: Yes.

\*Q: How did you learn to read?

A: From my brother and sister.

\*Q: What did they do to help you learn to read?

A: Well, you know how you say, that's 'plate' and then I say that's 'plate'.

\*Q: So you look at the word and you remember what it looks like.

A: Yes.

\*Q: Do you think you can read well now?

A: Yes.

\*Q: Do you think that by reading a book you can learn things?

A: Yes.

\*Q: Have you ever learned anything by reading a book?

A: Yes.

\*Q: What?

A:  $1+1=2$ ,  $2+2=4$ . . .

\*Q: Did you get that out of a book?

A: Yes. The Sesame Street book showed me how to say it.

\*Q: What did you learn with Mrs D this morning?

A: We did a story.

\*Q: What do you mean 'you did a story'?

A: I did "Yesterday we went to swimming lessons after school".

\*Q: Did you write that?

A: Yes.

\*Q: What did you actually write?

A: I wrote. . . 'pool' and um. . . I can't remember.

\*Q: Do you know how to write?

A: Yes.

\*Q: How did you learn how to write?

A: Um. . . because my Mummy and Daddy and Gemma and Sam, they writed it down first and then I copied and . . . then I learned how to do running writing.

\*Q: How did you learn to do running writing?

A: First I did a 'g' like that and then I did a 'c' like that .

\*Q: So you learned how to do running writing by copying things from other people with your family's help.

A: Yeah.

**\*Q:** Do you think you could learn how to read and write on your own?

**A:** No.

**\*Q:** Why not?

**A:** I'm not able to do things like that on my own. . .someone has to show me how to do them.

**\*Q:** Who?

**A:** Mrs D and Mummy and Daddy and Gemma and Sam?

**\*Q:** Could someone your own age help you learn things?

**A:** No - they're too little.

**\*Q:** Why would that matter?

**A:** Well if they are five then they won't be able to know how to do it too.

**\*Q:** Did you learn anything with Mrs D this morning?

**A:** Um . . .those up on the board there. I can say them now.

**\*Q:** What are they?

**A:** They are things that start with 'a'. Ant, apple, acrobat. ... arrow, after agro, um. . .air.

**\*Q:** What's special about all those words?

**A:** Well, we learned things about them.

**\*Q:** What did you learn about them?

**A:** Well, that they are 'a' words um. . .that 'a' is at the front.

**\*Q:** So they are words that begin with 'a'.

**A:** Yeah.

**\*Q:** So how did you learn about these words that began with 'a'. What sorts of things did you do with Mrs D?

**A:** Cause you hear the 'a'. . . like acrobat you can hear the 'a' and in apple you can hear the 'a' and in ant you can hear the 'a' when she says it - and I can say them too.

**\*Q:** Right, so it's all the sound and you know when you hear the 'a' word it's a word that begins with the letter 'a'.

**A:** Yes.

**\*Q:** Can you tell me something you have learned in Year One so far?

A: We've learned how to say our tables and  $1+1=2$ . . .

\*Q: Can you tell me about the times tables?

A: I've forgotten about the tables.

\*Q: Can you think of anything else you have learned in Year One so far?

A: My ABC.

\*Q: What's your ABC?

A: Well it's letters that um, you know, like (singing) "a b c d e f g . . ."

\*Q: How did you learn that song?

A: Cause I just thought about it and I heard someone say it on Play School.

\*Q: So you really learned from the TV; not really at school but they do it at school too.

A: Yes.

\*Q: Have you learned anything else off the TV?

A: No.

\*Q: What do you especially like learning in Year One?

A: Things like this. . . pictures.

\*Q: What about the pictures do you like the most?

A: Doing an 'e' like that.

\*Q: So you like writing in the pictures too?

A: Yeah, it's good fun.

\*Q: Can you tell me how you know when you have learned something?

A: Cause I ask my Mummy and Daddy if this is right, and my brother and sister.

\*Q: And if they say 'yes' what does that mean?

A: It means that I have learned how to do it.

\*Q: And if they say 'no'?

A: That means I haven't learned.

\*Q: And what do you need to do if you haven't learned?

A: Try again.

**\*Q:** Can you give me an example. . . something that you have tried to learn but you haven't quite got it. And you've asked someone about it and they've said no that's not really quite right. Has this happened to you.

**A:** Yes, making paper aeroplanes.

**\*Q:** What happened?

**A:** Cause I got the wings right but I didn't get the fold at the bottom right.

**\*Q:** You're in Year One now and you were in preschool last year. Which do you prefer?

**A:** Year One.

**\*Q:** Why?

**A:** Cause you get to stay all day and you get to have lunch here and use the canteen to get an icy-pole.

**\*Q:** Do you think preschool is different to primary school?

**A:** Yes because in preschool you only stay half day in primary school you stay all day.

**\*Q:** What about the things you have learned in preschool and Year One. Are they different at all? Like the type of work that you do; how is it different?

**A:** Because, um. . . you only have a little time to play and here you get to have a long time to play. And this time you get three times to play and in preschool you only get one time to play.

**\*Q:** What about the types of things you learn. Are they different at all?

**A:** Um, well we've learned some rules with Mrs D (pointing to class rules on window).

**\*Q:** Tell me about them.

**A:** We can't touch other children. . . um and cause um. . . if we want to say something then we have to put up our hand like this (raises arm).

**\*Q:** You've been in Year One for a few weeks now. What types of things do you think you are going to learn in Year One?

**A:** To do maths.

**\*Q:** Anything else?

**A:** No.

**\*Q:** What's maths?

**A:** Its a type of work that you have to do.

\*Q: Do you know what types of things you will have to learn in maths?

A: I'm not sure.

\*Q: What do you thinking 'learning' means Renae?

A: It means. . .it means coming to school and learning things.

\*Q: What kinds of things?

A: Just things that you have to learn in school.

\*Q: Renae, tell me some things you've learned really well.

A: I'm really good at doing dogs.

\*Q: What do you mean 'doing dogs'?

A: Cause we can make the paper into dogs.. We have a flat piece of paper and we make it into a diamond and fold it. . .

\*Q: So you had a piece of paper and you turned it into a dog by folding it.

A: Yes.

\*Q: How do you know you are really good at it?

A: Because I can do it on myself. I make heaps of them.

\*Q: You are able to do it on your own.

A: Yeah.

\*Q: Is it important to think about things in class - things that Mrs D tells you?

A: Yes.

\*Q: Why?

A: Cause if you don't listen to what she says you won't be able to learn.

\*Q: What do you mean you wont be able to learn?

A: You won't be able to do it.

\*Q: What does 'thinking about something' mean?

A: If you think about things you'll be able to get things right but if you don't think about them you might hurt somebody. If you do something wrongly you might hurt somebody's feelings.

\*Q: What do you mean you might hurt somebody?

A: Um. . . Cause I've forgotten what we were talking about.

\*Q: Do you think it's possible to learn things by thinking about them?

A: Yes.

\*Q: How do you do it?

A: I don't know really.

\*Q: If there is something that you don't understand that Mrs D is teaching you, what would you do?

A: You can just put your hand up and you can just say I don't understand what you are doing.

\*Q: And then what would you like her to do?

A: I'd ask her to please help me to do it.

\*Q: Like what?

A: Um. . .like how can I make a paper areoplane work.

\*Q: If you wanted to find out how far it was to the moon what would you do?

A: You could get a map or something like that.

\*Q: What would that tell you?

A: It would tell me how long it would be up to the sky.

\*Q: Annie's back. . .What does it mean to learn in Year One?

A: Um. . . things like you get to learn things so you are able to get a job.

\*Q: And how do you do you learn things?

A: If you practise it very, very much you will be able to remember it and get it right.

\*Q: Like what?

A: Like um. . .doing maths.

Renae2



## APPENDIX F

### What and How Sub-categories of Generic Learning

Q.S.R. NUD.IST Power version, revision 3.0.4 GUI.

PROJECT: LEARNING, User CAROLE, 10:56 am, Dec 23, 1995.

\*\*\*\*\*

(1 1) /WHAT/GENERIC LEARNING

\*\*\* Definition:

Vague description of learning. No real definition.

+++++

+++ ON-LINE DOCUMENT: Liam1

+++ Retrieval for this document: 12 units out of 283, = 4.2%

++ Text units 176-187:

\*Q: What do you mean 'to learn'? 176

177

A: To learn things, like in Queensland they don't have a 178

good education. . .half of the people in Queensland never went 179

to school and turned out really silly cause they can't 180

learn simple things. 181

182

\*Q: How do you know this? 183

184

A: Because I lived there for 4 years and I went there for 185

the Christmas holidays last year and to tell you the truth 186

they didn't even learn what 2 + 2 was. 187

+++++

+++ ON-LINE DOCUMENT: Liam2

+++ Retrieval for this document: 15 units out of 416, = 3.6%

\*Q: Okay, well let's put it another way. Do you remember. . . 358

A: Oh now I remember. Learning means. . .um. . .I've forgot 362

again. Learning means going to school, reading, writing and 363

history and just learning. 364

365

366

\*Q: Why do you have to do those things though Annie? 367

368

A: Because you have to learn. 369

370

\*Q: What do you mean you have to learn? 371

372

A: If you don't learn you'll just turn out a bit. . . you 373

won't remember things and if you don't learn then you will 374

look like you were a bit silly. You just have to learn so you 375

you don't look silly. 376

+++ ON-LINE DOCUMENT: Renae2

+++ Retrieval for this document: 1 unit out of 385, = 0.26%

\*Q: Do you know what types of things you will have to learn

286

++ Text units 290-290:

\*Q: What do you thinking 'learning' means Renae?

A: It means. . .it means

coming to school and learning things.

\*Q: What kinds of things?

A: Just

things that you have to learn in school.

290

+++++

+++ ON-LINE DOCUMENT: Simon2

+++ Retrieval for this document: 1 unit out of 396, = 0.25%

\*Q: What about learning things with Mrs D?

217

++ Text units 220-220:

\*Q: Do you know what 'learning' something means?

A: Mm. . .no. I think it

is when you go to school and you learn. . .you just learn.

220

+++++

+++ Total number of text units retrieved = 29

+++ Retrievals in 4 out of 12 documents, = 33%.

+++ The documents with retrievals have a total of 1480 text units,  
so text units retrieved in these documents = 2.0%.

+++ All documents have a total of 4158 text units,  
so text units found in these documents = 0.70%.

+++++

\*\*\*\*\*

(1 1 1) /WHAT/GENERIC LEARNING/EMPLOYMENT

\*\*\* Definition:

Learning is getting a good education for future employment/earning wages.

+++++

+++ ON-LINE DOCUMENT: Liam1

+++ Retrieval for this document: 7 units out of 283, = 2.5%

++ Text units 189-195:

\*Q: What sorts of things do you come to school to learn? 189

A: To get a good education and that, make a good job - 190  
you have to learn to get a good job. And if you are not 191  
that bright it's still okay - if you try your best it's 192  
still okay and you will get a job. Something good will 193  
happen. 194  
195

+++++

+++ ON-LINE DOCUMENT: Liam2

+++ Retrieval for this document: 9 units out of 416, = 2.2%

++ Text units 261-269:

\*Q: What would you like most of all to learn? 261

A: I really want to learn a good education. That's the most 262  
thing I want. 263  
264  
265

\*Q: What do mean by a 'good education'? 266

A: If you don't get a good education you don't get a good 267  
job. 268  
269

+++++

+++ ON-LINE DOCUMENT: Mary1

+++ Retrieval for this document: 9 units out of 390, = 2.3%

++ Text units 298-306:

\*Q: Anything else? 298

A: Well that's what learning is I think. 299  
300

\*Q: So learning is remembering new things, like being able 301  
to know more - is that right? 302  
303

A: Mm. It's like learning so you won't have to go on the dole and 304  
you will get a job and earn money, because without money you can't buy 305  
things and then you will be in trouble. 306

+++++

+++ ON-LINE DOCUMENT: Renae2

+++ Retrieval for this document: 4 units out of 385, = 1.0%  
 ++ Text units 369-372:

\*Q: Annie's back. . .What does it mean to learn in Year One? 369

A: Um. . . things like you get to learn things so you are able to 370  
 get a job. 371  
 372  
 ++++++

+++ ON-LINE DOCUMENT: Simon1  
 +++ Retrieval for this document: 6 units out of 233, = 2.6%  
 ++ Text units 193-198:

\*Q: Annie is sad because she wants to know what learning in 193  
 primary school means. Can you tell her? 194  
 195

A: You need to learn so you can have a job and be good at 196  
 it. Then you get a wage so you get more money. And if you 197  
 don't learn things then you don't get very good at things. 198  
 ++++++

+++ ON-LINE DOCUMENT: Simon2  
 +++ Retrieval for this document: 6 units out of 396, = 1.5%  
 ++ Text units 366-371:

\*Q: Annie wants to know what does it mean to learn in Year 366  
 One. 367  
 368

A: So you can remember things. When you are older and when 369  
 really old you have got a job and you can get a raise and 370  
 get more money. 371  
 ++++++

+++ Total number of text units retrieved = 41  
 +++ Retrievals in 6 out of 12 documents, = 50%.  
 +++ The documents with retrievals have a total of 2103 text units,  
 so text units retrieved in these documents = 1.9%.  
 +++ All documents have a total of 4158 text units,  
 so text units found in these documents = 0.99%.  
 ++++++

\*\*\*\*\*

(1 1 2) /WHAT/GENERIC LEARNING/BEHAVIOURAL

\*\*\* Definition:

Learning is behaving appropriately in order to learn effectively.

+++++

+++ ON-LINE DOCUMENT: Liam1

+++ Retrieval for this document: 13 units out of 283, = 4.6%

++ Text units 35-42:

\*Q: Can you tell me something you have learned in Year Four 35

so far? 36

37

A: I've learned that in your homework in Year Three, Year 38

Two, Year One, when I'd come home to my homework I'd just go 39

"I don't want to do it" but in Year Four now I know I just 40

say to yourself "Right. I'm going to do this" and then just 41

get it over and done with. . . don't muck around - just do it. 42

++ Text units 51-55:

\*Q: What else. Have you learned any other things in Year 51

Four? 52

53

A: I have learnt that being bad doesn't get you anywhere and 54

being good gets you somewhere. 55

+++++

+++ ON-LINE DOCUMENT: Liam2

+++ Retrieval for this document: 32 units out of 416, = 7.7%

++ Text units 24-34:

\*Q: You've been back at school for 6 weeks now. Can you 24

tell me something you've learned while you've been back at 25

school? 26

27

A: I told you last time that I learned just to sit down and 28

do it and not muck around. 29

30

\*Q: Yes you did. Anything else? 31

32

A: Yes. . . I. . . I told you that being bad gets you no-where and 33

being good pays. 34

++ Text units 83-91:

\*Q: Does she tell you in lessons what she wants you to 83

learn? 84

85

A: Yes. She tells you what to do and that. 86

87

*Q: How does she do it?	88
	89
A: Just talks to the whole class and says things like "Do this. . ." and that; so we be good so we don't get in trouble.	90
++ Text units 115-120:	91
*Q: Tell me something that you've learned that	115
understand, something that really make sense to you?	116
	117
A: . . . I can understand how to make friends. . . what you should	118
do if you like someone and you want to be their friend. Like	119
cause you may not have done as much with them. . .	120
++ Text units 122-127:	
*Q: I see. What about in school work. Is there anything	122
that you really understand that you've done with Mrs M. . . or	123
in Year Three?	124
	125
A: I understand that you can't get out of school, you can't	126
just - you have to do it even if you don't want to.	127
+++++	
+++ ON-LINE DOCUMENT: Renae1	
+++ Retrieval for this document: 8 units out of 209, = 3.8%	
++ Text units 56-59:	
*Q: Can you think of something that you learned last year in	56
preschool?	57
	58
A: Not to run inside the classroom.	59
++ Text units 71-74:	
*Q: Can you think of something you have learned in Year One	71
so far?	72
	73
A: No talking in class. And only if you raise your hand.	74
+++++	
+++ ON-LINE DOCUMENT: Renae2	
+++ Retrieval for this document: 20 units out of 385, = 5.2%	
++ Text units 252-271:	
*Q: What about the things you have learned in preschool and	252
Year One. Are they different at all? Like the type of work	253
that you do; how is it different?	254
	255
A: Because, um. . . you only have a little time to play and	256
here you get to have a long time to play. And this time you	257
get three times to play and in preschool you only get one	258
time to play.	259
	260
*Q: What about the types of things you learn. Are they	261

different at all?	262
	263
A: Um, well we've learned some rules with Mrs D (pointing to class rules on window).	264
	265
	266
*Q: Tell me about them.	267
	268
A: We can't touch other children. . . um and cause um. . . if we want to say something then we have to put up our hand like this (raises arm).	269
	270
	271
+++++	
+++ ON-LINE DOCUMENT: Simon1	
+++ Retrieval for this document: 4 units out of 233, = 1.7%	
++ Text units 44-47:	
*Q: Tell me something you learned at preschool last year?	44
	45
A: I learned how to cross your legs and fold your arms. . . We also have to do it at school.	46
	47
+++++	
+++ ON-LINE DOCUMENT: Vivien1	
+++ Retrieval for this document: 5 units out of 337, = 1.5%	
++ Text units 205-209:	
*Q: What do you think Mrs P wants to learn in Year Seven?	205
	206
A: Good studying skills for high school and how to work quietly on your own and how to work in groups and to the best you can do; to do the best to your ability.	207
	208
	209
+++++	
+++ Total number of text units retrieved = 82	
+++ Retrievals in 6 out of 12 documents, = 50%.	
+++ The documents with retrievals have a total of 1863 text units, so text units retrieved in these documents = 4.4%.	
+++ All documents have a total of 4158 text units, so text units found in these documents = 2.0%.	
+++++	

\*\*\*\*\*

(2 1 1) /HOW/GENERIC LEARNING/BY LEARNING

\*\*\* Definition

Learning happens by simply 'learning'. What happens when one learns is not described in any way.

+++++

+++ ON-LINE DOCUMENT: Simon2

+++ Retrieval for this document: 8 units out of 396, = 2.0%

++ Text units 373-380:

\*Q: So learning things helps you get good at things so you 373

can a good job and earn a lot of money. 374

375

A: Yeah. 376

377

\*Q: How is she going to do that? 378

379

A: By learning things. . .trying to. 380

+++++

+++ Total number of text units retrieved = 8

+++ Retrievals in 1 out of 12 documents, = 8.3%.

+++ The documents with retrievals have a total of 396 text units.

so text units retrieved in these documents = 2.0%.

+++ All documents have a total of 4158 text units,

so text units found in these documents = 0.19%.

+++++



\*\*\*\*\*

(2 1 1 1) /HOW/GENERIC LEARNING/BY LEARNING/SCHOOL

\*\*\* Definition

Learning happens by attending school.

+++++

+++ ON-LINE DOCUMENT: Liam1

+++ Retrieval for this document: 12 units out of 283, = 4.2%

++ Text units 197-208:

\*Q: Do you think that you can learn things in places other 197

than in school? 198

199

A: Yes. Sometimes but the school always beats how much, 200

cause you only learn a bit in the outside world, you don't 201

learn a lot you have to learn it from the school. 202

203

\*Q: Can you give me an example? 204

205

A: Like you can learn what's happened before like in records 206

- no one will tell you that. But if you went to the library 207

here. You would find out a lot more things. 208

+++++

+++ ON-LINE DOCUMENT: Mary1

+++ Retrieval for this document: 9 units out of 390, = 2.3%

++ Text units 118-123:

\*Q: What sorts of things do you have to learn? 118

119

A: Maths. . .to do sums - because when my brother 120

first. . .cause like when you are younger you don't. . .if you 121

haven't gone to school you probably won't learn many things 122

and it is pretty hard when you are older. 123

++ Text units 307-309:

\*Q: What's the best way to go about learning? 307

308

A: Well if you go to school you'll learn a lot. 309

+++++

+++ ON-LINE DOCUMENT: Mary2

+++ Retrieval for this document: 14 units out of 456, = 3.1%

++ Text units 270-278:

\*Q: Why do your Mum and Dad know more than you do? 270

271

A: Well, they've been in school longer and my Mum went to 272

university not long ago and did study on maths teaching and 273

also for computing.	274
	275
*Q: How does going to school help?	276
	277
A: It just helps you learn things.	278
++ Text units 423-427:	
*Q: How do you learn?	423
	424
A: You go to school, you don't muck around, you listen, you	425
don't talk while the teacher is talking and you can do	426
things cause she's told you and you've listened.	427
+++++	
+++ ON-LINE DOCUMENT: Simon1	
+++ Retrieval for this document: 10 units out of 233, = 4.3%	
++ Text units 166-172:	
*Q: What does that mean?	166
	167
A: It's surrounded by water .	168
	169
*Q: How did you know that?	170
	171
A: Cause I learned it at school.	172
++ Text units 200-202:	
*Q: What's the best way to go about learning?	200
	201
A: To go to school.	202
+++++	
+++ ON-LINE DOCUMENT: Simon2	
+++ Retrieval for this document: 12 units out of 396, = 3.0%	
++ Text units 373-384:	
*Q: So learning things helps you get good at things so you	373
can a good job and earn a lot of money.	374
	375
A: Yeah.	376
	377
*Q: How is she going to do that?	378
	379
A: By learning things. . .trying to.	380
	381
*Q: How is she going to learn things?	382
	383
A: By going to school.	384
+++++	

+++ Total number of text units retrieved = 57  
+++ Retrievals in 5 out of 12 documents, = 42%.  
+++ The documents with retrievals have a total of 1758 text units,  
so text units retrieved in these documents = 3.2%.  
+++ All documents have a total of 4158 text units,  
so text units found in these documents = 1.4%.  
+++++

\*\*\*\*\*

(2 1 1 2) /HOW/GENERIC LEARNING/BY LEARNING/BEHAVING

\*\*\* Definition

Learning happens by behaving when at school, and listening to the teacher.

+++++

+++ ON-LINE DOCUMENT: Liam1

+++ Retrieval for this document: 17 units out of 283, = 6.0%

++ Text units 134-150:

\*Q: How do you become a good learner? 134

A: Try hard. 135  
136  
137

\*Q: What do you mean 'try hard'? 138

A: Don't just muck around. Try hard and don't do anything 139  
like. . .put your mind to it and listen to the teacher. . . 140  
141  
142

\*Q: So really concentrate hard? 143

A: Yeah, concentrate hard. You have to at least 144  
concentrate. 145  
146  
147

\*Q: What do you mean by 'concentrate hard'? 148

A: Well just keep your mind on it and always listen to the teacher. 149  
150  
+++++

+++ ON-LINE DOCUMENT: Mary1

+++ Retrieval for this document: 21 units out of 390, = 5.4%

++ Text units 131-142:

\*Q: How do you go about learning things in school? 131

A: I'm not sure what you mean? 132  
133  
134

\*Q: Okay. You said you come to school to learn things like 135  
maths, language etc. How are you going to go about learning 136  
those things in school? 137  
138

A: Well if you want to learn things, just don't talk when 139  
the teacher is talking and everything like that. 140  
141

\*Q: So concentrate hard and do what the teacher tells you? 142

++ Text units 311-319:

\*Q: What should she do at school to learn a lot? 311

A: Well if you listen to the teacher you learn. 312  
313  
314

\*Q: What do you mean? 315

A: Well if you listen to what the teacher says and do what 316  
she says and not talk but watching the teacher and 317  
listening. 318  
319

+++++

+++ ON-LINE DOCUMENT: Mary2

+++ Retrieval for this document: 9 units out of 456, = 2.0%

++ Text units 280-283:

\*Q: How do you learn things in school? 280

A: Well you listen to the teacher all the time and try to 281  
remember things. 282  
283

++ Text units 423-427:

\*Q: How do you learn? 423

A: You go to school, you don't muck around, you listen, you 424  
don't talk while the teacher is talking and you can do 425  
things cause she's told you and you've listened. 426  
427

+++++

+++ ON-LINE DOCUMENT: Renae2

+++ Retrieval for this document: 13 units out of 385, = 3.4%

++ Text units 312-324:

\*Q: Is it important to think about things in class - things 312

that Mrs D tells you? 313

A: Yes. 314

315

316

\*Q: Why? 317

A: Cause if you don't listen to what she says you won't be 318

able to learn. 319

320

321

\*Q: What do you mean you wont be able to learn? 322

A: You won't be able to do it. 323

324

+++++

+++ ON-LINE DOCUMENT: Simon1

+++ Retrieval for this document: 7 units out of 233, = 3.0%

++ Text units 200-206:

\*Q: What's the best way to go about learning? 200

A: To go to school. 201  
202  
203

\*Q: And how can you learn things in school? 204

A: Cause if you listen to the teacher and be good. 205  
206

+++++

+++ ON-LINE DOCUMENT: Simon2

+++ Retrieval for this document: 7 units out of 396, = 1.8%

++ Text units 386-392:

\*Q: What should she do at school to learn? 386

A: Be good. 387  
388  
389

\*Q: What do you mean 'be good'? 390

A: Do what the teacher tells you. 391  
392

+++++

+++ Total number of text units retrieved = 74

+++ Retrievals in 6 out of 12 documents, = 50%.

+++ The documents with retrievals have a total of 2143 text units,  
so text units retrieved in these documents = 3.5%.

+++ All documents have a total of 4158 text units,  
so text units found in these documents = 1.8%.

+++++