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In a radio interview, the extraordinarily original jazz trumpeter Dizzie Gillespie was asked whether it was his lack of any tuition that had allowed him to develop his highly original style. He replied, most emphatically, 'No, I should say not. A teacher is a short cut.' The interviewer pressed the point and asked: 'But wouldn't a teacher, at least to some extent, have limited the development of your own particular style?' To which Dizzie Gillespie replied: 'Not a good teacher' (Best 1982: 281).

Dizzie Gillespie's comments are undoubtedly relevant not only to music but to the arts as a whole. A good teacher of the arts is hopefully someone who can help individuals to discover their own creative talents and unique artistic style. Ideally, a good teacher will encourage students to build up their own 'cultural capital' on which they can draw in future years. Cultural capital refers in this instance to a personal storehouse of skills, knowledge, and understandings of things. Providing rich arts experiences in schools should enable students to become both active contributors 'to' and critical consumers 'of' the arts in their future lives. Furthermore, if arts education devotes attention to developing a kind of pedagogy that involves teaching students how to think for themselves, this will groom individuals who are capable of facing future life challenges and who can contribute in meaningful ways to their society.

The practical circumstances of teaching within the framework of an Australian school education system can mean that the teaching of arts subjects is often a

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frustrating and fruitless enterprise. In the primary school (in Australia this includes students who are in Kindergarten through to Year 6) in particular, there are many constraints placed upon overworked teachers that can make the teaching of arts subjects problematic. In a recent report reviewing Arts teaching and teacher education in Australia written by the National Affiliation of Arts Educators (NAAE) and submitted to the Department of Education, Science and Training, one of the conclusions drawn was that the arts components of pre-service teacher education were inadequate, particularly in the area of primary teacher education (NAAE 2003). Not surprisingly, in a situation where teachers may have little training or background in the arts and deal with problems in allocating time, equipment and space to arts activities, school arts programs can become impoverished.

During my first three years of employment as a visual arts lecturer, I frequently had the opportunity to oversee university pre-service primary school teacher trainees undertaking their practicum lessons. Observations of numerous primary school classrooms during this time revealed a consistent attitude amongst many teachers that gave Art a second-class status. 'School Art' was largely perceived as a fun subject that could be sporadically sandwiched between other subjects. Art classes were justified because they had entertainment value. Since students enjoyed these classes, the assumption was that they could not contain any serious thinking or learning.

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As if to confirm this prejudice, teachers frequently engaged in activities that did little to stretch students' thinking. Students seemed to be doing 'mechanical' or 'tidy' tasks that did not challenge them to think creatively, or reflect upon their ideas and opinions. Many of the supervising teachers were encouraging student trainees to do 'busywork' in which no one but the teacher did any real planning or decision-making. The focus invariably was on what the children produced rather than on the process of learning. Unlike the positive teaching experience alluded to by Dizzie Gillespie, these practices appeared to undermine the children's independence of thought and action. Rigid conditions were imposed on students so that they made few challenging artistic decisions.

Needless to say, this was somewhat disheartening. I had invested time and effort in promoting a different conception of arts teaching – a conception that acknowledged that the visual arts offered teachers a powerful teaching tool. I had also felt a sense of promise that unique opportunities existed for positive changes to visual arts education. Stewart (1993:173) writing about Australian curriculum reforms, expresses this sense of promise when she comments,

Current curriculum documents suggest an approach to art education grounded on learning through reflection, responding, and appraising. This approach opens a way to creatively recontextualize artistic learning in a cultural context within our schools.

Reforms in the last decade do appear to have opened the way for more socio-cultural approaches to teaching the subject area that emphasise the development of conceptual understandings of art. The reality though is that reforms take time

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and require investment from all parties involved. Despite the fact that curriculum content, design and structure act as a primary source for change, teachers, and to some extent students, define what and how art is taught within schools. As Eisner (2002:70) points out,

The arts, like other fields, can be taught in different ways for different ends. The aims of any field are not determined solely by its subject matter, they are also determined by policy makers and teachers who decide what is important to teach.

Unless teachers subscribe to proposed curriculum change, it is likely that many of the intended outcomes of curriculum reform are not realised in teaching and learning. Teaching practices within the classroom clearly have a strong influence upon what students have the opportunity to learn and how they learn it. As a learning domain the visual arts can provide opportunities for modelling and applying thinking processes, skills and strategies. Engaging students in creating artworks, as well as researching, discussing, analysing and critiquing artworks within a social and historical context, are domain related activities that provide these opportunities. Teachers' decisions about how these activities are presented to students will influence the extent to which their students are able to develop and apply complex thinking. Beyond simply building art knowledge and skills, teachers need to be able to incorporate high level thinking tasks that promote both flexible as well as analytical thinking.

My early experience with art teaching practices at schools led me to question my assumptions about the values and purposes of arts education in the New South Wales education system. I also questioned my understanding of what school

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education was promoting – apart from a fundamental training in art media and the skills and techniques used to make art. After these early visits to schools, I came to wonder whether visual arts programmes in schools provided a methodology for learning that encouraged complex forms of thinking. After observing that the cognitive aspects of visual arts education were frequently devalued in the primary classroom, I conceived of embarking on a research project that set out to find enthusiastic art teachers where the situation might be more positive. I was eager to discover examples of art education programmes that demonstrated how students were able to stretch their thinking through practicing meaningful art related tasks. More research studies that address classroom experiences in visual arts education programs are needed in order to better understand the influences of curriculum content and curriculum delivery. This study was formed as a way of contributing to and encouraging the development of this kind of research agenda.

Chapter 1 of the study provides an initial statement of the aims and general research questions that are the focus for the study. It places the study in the context of both contemporary and past curriculum theory and practices in art education. Thus, it provides a summary of developments that have caused the subject area to be undervalued in terms of what it can contribute to academic learning.

Chapters 2 and 3 review literature relevant to the study. Chapter 2 provides a review of literature relating to theories about, and research into, critical and creative thinking and the thinking skills movement in education. This chapter

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explains why the teaching of higher order thinking has become such an important educational goal. The central argument is that the development of higher order thinking in the context of school learning is most effective when it is infused into specific curriculum content areas. Adopting a ‘teaching for thinking’ approach requires teachers to think beyond traditional ways of teaching subject knowledge and skills. Therefore, the discussion looks at what implications this responsibility has for visual arts teachers.

The overall aim of chapter 3 is to evaluate how critical and creative thinking constructs are applied to visual arts teaching and learning. The chapter begins by describing how the changing image of art education over the last few decades has altered the way in which creativity and critical inquiry is fostered through curriculum activities. The chapter also examines the capacity of different discipline domains within the visual arts to facilitate critical and creative development. In the final part of the chapter there is a review of the research focus and programs at Harvard University as well as studies in education that have explored aspects of critical or creative thinking in the context of primary or secondary school visual arts programs.

Chapter 4 represents a shift from the previous focus on global issues relating to visual arts curriculum in Chapter 3 to a more localised view of visual arts curriculum issues and practices in the state of New South Wales. The purpose of this chapter is to consider what kind of provision has been made in regard to creating opportunities for fostering critical and creative thinking. The discussion

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identifies some of the theoretical and structural elements of these curriculum documents that contribute to a critical and creative thinking orientation to visual arts learning activities.

Chapter 5 provides details of the methodological approach used in the research. It describes the design and conduct of the study, and explains the method of data collection, analysis and the presentation of information gained through fieldwork. It also demonstrates how internal validity has been established.

Chapter 6 details the secondary school case studies. Specifically, an analysis of the data extracted from this group of case studies provides answers to the main research questions. Teachers' and students' theoretical perspectives as well as their teaching and learning practices are considered in relation to critical and creative thinking. Observations of class activities as well as interviews with both teachers and students are the main data sources for analysis.

Chapter 7 repeats the presentation of Chapter 6 but does this specifically in relation to the primary school case studies. Chapter 8 is the final chapter in the thesis and offers some final considerations and recommendations. These are informed primarily through an analysis of the fieldwork data and through a consideration of the theoretical constructs that frame the research question.

Chapter 1

Background to the Study

Knowledge is made, not simply discovered (Eisner 1991:6).

Chapter 1 begins by outlining the purpose of the thesis and explaining why creative and critical thinking are considered relevant to a study of visual arts pedagogy. The specific research questions are introduced, after which definitions for critical and creative thinking that are widely recognised within cognitive psychology studies and professional literature are included. These definitions are statements that have guided and focused the observations and theoretical understandings formed within the study. It should be noted that the majority of these definitions have been broadly applied to different everyday situational and epistemological knowledge (Halpern, 1996). They are therefore not specifically tailored to understanding artistic study and practice. However, throughout the study, attention is given to how critical and creative thinking might be perceived and characterised within the context of visual arts education. In order to find the relevance of these theories to visual arts learning and practice it was necessary to bridge the domains of cognitive psychology, educational psychology, learning theories and the visual arts.

Within this chapter it is argued that conceptual shifts in education have allowed for a greater inclusion of visual arts as a cognitive domain. Many art education theorists, such as, Parsons (1992) and Efland (2002), highlight the way cognition has been re-contextualised within contemporary learning theories and claim this has led to an

increased understanding of the affective components of cognition. This is particularly important to the visual arts because of the strong affective dimensions of the discipline. A cognitive understanding of visual arts practice has been significant for education, not only because it has contributed to greater academic status for visual arts, but also because it has encouraged research into cognitive aspects of visual arts learning. Greater attention within professional literature in the field of visual arts education now appears to be applied to conceptualising the role of the visual arts teacher in promoting the use of cognitive processes and strategies. This chapter explores aspects of this body of professional literature and indicates how this literature was influential in shaping the research questions as well as the research design.

Purpose of the Study

The purpose of this study is to examine critical and creative thinking – both categorised as forms of higher order thinking – in the context of the visual arts classroom. It should be the case that all school students have the opportunity to engage in art programmes that allow them to act and respond in a critical and creative manner. This kind of mental engagement contributes to two important learning objectives; it leads to an improved understanding of Art and supports the development of these important mental skills. Various research studies support the view that processes associated with different aspects of discipline study facilitate engagement in critical and creative thinking. Studies such as those conducted by Tickle (1984); Eisner (1999); Burton, Horowitz and Abeles (1999); McSorley (1996); Wilks (2000); Corcoran (2006) and Tishman (2006)

have found that art processes require the application of either critical or creative thinking skills. Some studies (Haynes and Haynes 2000) also claim that the creative process involved in art production, can act as a catalyst for combining critical and creative thinking together in order to improve creative outcomes.

It is important to remember that while there are now external pressures upon teachers to implement ‘thinking curriculum’¹ within subject study, teachers have to map out for themselves how they might negotiate and implement teaching strategies that support and encourage the application of thinking skills. Teacher-practitioners are naturally dealing with organisational classrooms considerations and accommodating their students social and emotional needs as well as external influences, such as, administrative issues, national and state curricula, testing procedures and various local concerns within the community. As Hargreaves and Galton (1992:143) point out, it is difficult for teachers to incorporate new psychological and educational theories into their instructional practices under these conditions particularly when educational theories are not unitary or clear-cut. They suggest under these conditions teachers who teach the arts develop what they term ‘working theories’ of their pupils’ aesthetic learning that translates these disparate considerations into practice.

¹ ‘Thinking Curriculum’ is a popularly used term by various authors who contributed chapters to the book *Designing a Thinking Curriculum* (2004) edited by Susan Wilks. It denotes practitioner-based methods that are concerned with orientating every curriculum area towards the development of higher order thinking skills.

The role of teachers as ‘architects of their classroom environments’ (Stewart 1993:166) is considered an important aspect of the study. Within current literature there is a concept that both creative and critical thinking can be taught and improved through instruction. Indeed, the concept that teachers contribute to the development of these forms of thinking is part of the theoretical framework that guides this study. Support for this notion comes from the research conducted by Amabile (1996); Csikmentmihalyi (1996); Ennis (1989); Tishman, Jay and Perkins (1993) and Anderson and Krathwohl (2001). These researchers have shown that teachers represent a strong social influence upon the student learner in respect to the ways they motivate and encourage students to apply critical or creative thinking.

My goal in preparing for the study was to select teachers who were widely recognised within their profession as being experienced, competent, and enthusiastic teachers of the discipline. It was hoped these teachers might indeed have developed some ‘working theories’ (Hargreaves and Galton 1992:143) about how to create a learning environment that fostered critical or creative engagement with the visual arts. Four teachers were selected for the study, two who taught in primary (generalist) and two in the secondary education (specialist) context. In order to illustrate ways in which these teachers and their students were approaching critical and creative thinking through Art, I interviewed these four teachers as well as a small group of students from each of their classes. I also observed their art classes over a period of eight to ten weeks. It was intended that the

analyses of the data collected would improve understanding in regards to the influence of visual arts pedagogies upon the development of critical and creative thinking skills.

Rationale for the Selection of Focus on Critical and Creative Thinking

The decision to focus upon critical and creative thinking within visual arts education arose for a number of reasons. Firstly, the capacity to use these thinking processes and the mental skills that contribute to these processes enables individuals to be active and independent participants in life and learning. The social value attached to these thinking processes is evidenced by the high level of research inquiry committed to the study of critical and creative thinking and the factors that influence their development in learning. Secondly, they are understood to be the most complex forms of thinking in cognitive taxonomies (Anderson and Krathwohl 2001; Bloom 1956). Educational research suggests that because of their complexity they require more deliberate development and practice within the school curriculum (Presseisen 1999; Halpern 1996; Fogarthy 1995). Thirdly, art education proponents claim them to be inherent in the kinds of processes, products and knowledge seeking strategies associated with art investigations (Eisner 2002; Efland 2002). Indeed art and creativity have been paired together for so long in schools that creativity theorist and researcher, Starko (2005), believes it is readily recognised as an educational goal of art-based instruction. This leads to the final significant point in terms of the purpose of this study; little is documented about the educational approaches or strategies used by visual arts teacher practitioners to foster creative and critical thinking.

Hamblen (1997) comments that because there is an assumption within art education discourse that students naturally develop critical and creative thinking skills through engagement in school art activities, there has been less consideration of the role of teacher' intervention. The premise of the study is that the capacity of the discipline to assist in the development of intellectual growth is largely a product of the particular dynamics of teacher instruction. However, the relationship between art pedagogies and higher order thinking development within the study is treated as one that is also intricately linked and dependent upon a range of other social and environmental factors.

A decision was made to study both critical and creative thinking rather than focus on just one or the other. This decision was certainly influenced by a perception that there can be both a critical and creative orientation to different educational tasks within the discipline area. Anderson and Krathwohl's (2001) cognitive taxonomy points to the need for critical thinking during creative production – a perspective which clearly has implications for visual arts as a domain of learning. Both divergent thinking and convergent thinking dominate at different times during the creative process encouraging the interplay between critical and creative thinking during art production (Runco and Albert 1994). While there is recognition of the fact that critical and creative thinking are essentially different modes of thinking, the study also acknowledges that they are complimentary higher order thinking processes and that overlaps can occur between both mental processes.

The separation between the two thinking constructs appears to be more commonplace in art education research studies. Australian doctoral studies conducted by Wilks and Corcoran are examples of this. Wilks (2000) focuses on the process of critical inquiry applied to the aesthetic education and arts criticism curriculum strand in Victorian secondary schools. Corcoran (2006) assesses the strategies used to enhance creativity implemented in her own senior secondary visual arts classroom. Corcoran's strategies were designed to give students the opportunity to be more creative in their making of artworks. These two studies do seem to align different types of art activity with engagement in either critical or creative thinking. Incorporating both critical and creative thinking in this study provided an opportunity to find areas of practice that might facilitate both. This meant working across discipline strands of art making, criticism, theory and history in the investigation of secondary schools as well as art making and appreciation in the investigation of primary schools.

The Research Questions

A review of the literature led the researcher to conclude that further research attention should be paid to visual arts teaching methodologies, specifically in regard to various approaches used to promote critical and creative thinking. In recognition of the fact that few research studies have examined this in the context of visual arts classrooms, it was intended that this study be field-based. Research investigations founded in everyday classroom practice, as observed in this study, have what Stout (1995:170) identifies as

‘the capacity to tap into the rich potential of the classroom as a generative source for both theory and practice in teaching and learning’.

The perspective taken in regard to critical and creative thinking in the study is that one should not only think of them as qualities of thinking possessed by individuals, but also as interactive social projects that are often dependant on the quality of the social environment. Obviously in the social environment of the art classroom the teacher plays a leading role. However, students’ interaction with peers is also influential. With this in mind the main research question that frames this study is: ‘What is the role of critical and creative thinking in New South Wales primary and secondary visual arts education’?

This research question is approached from two different directions or angles – a teacher-centered perspective and a student-centered perspective. With regard to a teacher-centered perspective a more specific research question may be asked: How do teachers influence the role of critical and creative thinking in art classrooms? This question in turn may be refined further into two subsidiary questions as follows:

- 1a) what are teachers’ theoretical perspectives about critical and creative thinking in the context of visual arts study? and,
- 1b) what teaching practices are applied to developing critical and creative thinking in art classes?

Naturally, in order to examine a student-centered perspective, a comparable question may be asked: How do students perceive and participate in critical and creative thinking in art classrooms? This question in turn may be refined further into two subsidiary questions as follows:

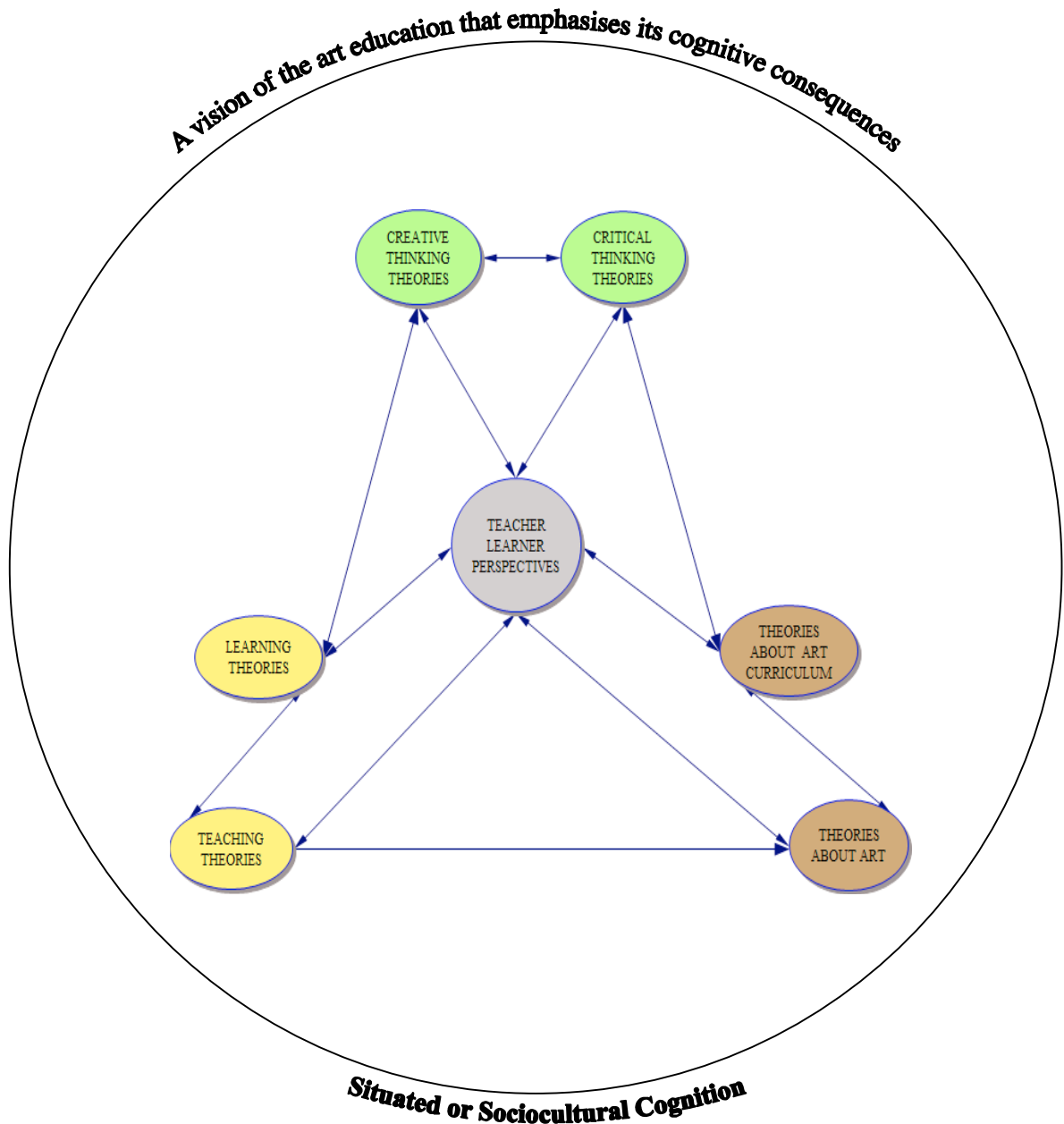
- 2a) what are students' perceptions of critical and creative thinking in visual arts study?, and
- 2b) to what extent is critical and creative thinking a feature of student practice?

The analysis and presentation of findings in relation to all of these research questions are contained within chapters 6 and 7 of the thesis. Chapter 6 details the secondary cases and Chapter 7, the primary cases.

The Conceptual Framework

The following diagram –Figure 1.1– illustrates the interrelationships among the discrete bodies of literature that have informed this research. These include the complementary theories of critical and creative thinking; teaching and learning; visual arts curriculum and art as a discipline. The diagram shows how each separate theoretical framework relates to the others and how each contributes to the analysis of the two key perspectives in the study: teachers and students. Each of these theoretical frameworks informs the data analysis and is explicated in the body of the thesis.

Figure 1.1 The Conceptual Framework for the Study



In Figure 1.1 the outer most circle represents the researcher's own theoretical perspective in regards to the research topic. There are two parts to the conceptual framework. The first refers to the researcher's preference for a sociocultural or situated

view of cognition and the second refers to a vision of art education that emphasises its cognitive consequences. Both of these were influential in determining the way the research was designed and conducted. The choice of an in-depth ethnographic case study approach, for example, reflected an appreciation of the uniqueness of the distinct situated nature of the cognitive frameworks in each of the school settings. Explanations of these two theoretical positions are presented in the following passages.

The terms ‘sociocultural’ and ‘situated’ cognition essentially represent one view. Efland (2002: 69) points out that other writers identify situated cognition with the term sociocultural cognition. Brown, Collins, and Duguid (1989) first introduced the term ‘situated cognition’. They (1989: 32) argued that, ‘knowledge is situated, being in part a product of the activity, context, and culture in which it is developed and used’. In regards to education, a sociocultural cognitive perspective assumes that knowledge is not a discrete, independent entity that can be separated from the situations in which it is learned. This perspective has parallels with constructivist theories of learning because both views conceive of learning as an active process. In both models the learner is actively engaged in accommodating new perceptual and conceptual matter into his or her existing schemata. Sociocultural theories of cognition, however, can be differentiated slightly from constructivist theories of learning because the former emphasize cognitive development as a social construction while the latter emphasise cognitive development as constructed by the lone individual (Efland 2002). Vygotsky (Fielding 1989), who is credited as the theorist who first proposed a theory of

sociocultural cognition, argued that cognitive development cannot be understood by the study of the individual alone because cultural influences inform both forms of thought and the content of one's mental life.

The researcher's 'vision of art education that emphasises its cognitive consequences', written on the outer circle in Figure 1.1, requires some explanation. There is no single vision of aims within the field of art education. What is considered most important in the field is often directed by different priorities, values and social forces. For example, some art education proponents describe a philosophy of 'art for art's sake' (Walling 2000: 10), or 'art as creative self expression' (Eisner 2002: 32). The researcher's vision of art education is one that promotes the development of complex forms of thinking as one of its central aims. It is proposed that this kind of education improves the quality of the learning experience. It also promotes flexibility, encourages risk taking, is full of imaginative possibilities, and fosters independence of thought and action. While there are many who have advocated for a shift towards this kind of vision within the field of art education Eisner (2002: 35) points out that,

'... it is a way of thinking about art education that is still trying to secure a firm foothold in the larger educational community'.

Inside the circle in Figure 1.1 six circular shapes coloured in yellow, green or brown are placed in relation to each other. The colouring and orientation symbolise a duality between theories of teaching and learning (yellow), theories of critical and creative

thinking (green), as well as theories about art and theories about the art curriculum (brown). The two directional lines that connect all of these shapes illustrate the interplay between these discreet bodies of literature in the thesis. The literature review and theory chapters (Chapters 2, 3 and 4) bring together these diverse bodies of literature to form an integrated understanding of critical and creative thinking in the context of art education.

The shape at the centre of Figure 1.1 is labelled ‘teacher and learner perspectives’. This is the focus of the research. Interpreting the values, attitudes and beliefs of teachers and learners participating in the study in regards to critical and creative thinking. A field-based case study strategy assisted in relating actions and events that occurred in each of the art classrooms to what was discussed by the teachers and students in interviews. Semantic connections between the research data and the theoretical frames illustrated in the figure were established as a result of the data analysis process.

Definitions of Critical and Creative Thinking Applied to the Study

Much attention has been devoted to both critical and creative thinking within the field of education in recent years. One reason for this burgeoning interest results largely from research that has shown it is possible to increase students’ critical and creative thinking capacities through instruction and practice. In the past, these were often regarded as innate individual dispositions or qualities, and education was thought to have little impact on their development (Presseisen 1999). However, as many researchers now

acknowledge, critical and creative thinking can be enhanced through various teaching strategies. Another reason for the increased attention given to these forms of thinking is due to sociological changes. With movement to what is often referred to as ‘the information age’ the ability to be both a critical and creative thinker is considered an important element of life success. Educational researchers, such as Presseisen (1999) contend that changing life conditions in the 21st Century require new outcomes, such as critical thinking, to be included as a focus of schooling.

Researchers who investigate higher order thinking frequently draw together the terms critical and creative. The order of the terms – whether ‘critical’ or ‘creative’ appears first – is usually irrelevant. While these forms of thinking are essentially different from each other there is a common perception that a close relationship is formed between the two. Beyer (1987: 35) however, warns that this collocation can be problematic because it blurs important conceptual boundaries. It is important therefore, to establish some theoretical constructs for both critical and creative in order to understand their differences and to appreciate the relationship they are given in educational models designed to improve higher order thinking. A working definition of each term is essential to clarifying the basis of the conceptual framework for this study. The following definitions were selected because they are most appropriate to the study of artistic practice in an educational context. These definitions are also widely – though not universally – accepted by theorists.

Alvino's (1990) glossary of terms provides some valuable short and workable definitions of thinking terms. Alvino (1990: 50) describes critical thinking as,

The process of determining the authenticity, accuracy, or value of something; characterised by the ability to seek reasons and alternatives, perceive the total situation, and change one's view based on evidence. Also called 'logical' and 'analytical' thinking.

While Alvino's definition underpins many aspects of this study, he neglects to mention metacognition. Metacognition includes ability for self-awareness, self-monitoring, and self-regulation and has been recognised by some theorists as the highest level of critical thinking (Pohl 2000b:42). Consequently, it too is considered to be a significant aspect of critical thinking.

Definitions of creative thinking proposed by Paul Torrance form the conceptual basis for understanding creative thinking in the study. Torrance (cited in Alvino 1990:1) defines creative thinking as,

A novel way of seeing or doing things that is characterised by four components – FLUENCY (generating many ideas), FLEXIBILITY (shifting perspective easily), ORIGINALITY (conceiving of something new) and ELABORATION (building on other ideas).

It should also be noted that within most theories of creative thinking there is both a process and a product orientation. This is because others often judge the psychological process according to the novelty or originality of what is produced by the thinker.

Though the definitions proposed by Alvino, Pohl, and Torrance inform the preliminary approach to the topic, many other researchers within different areas of professional practice and research have proposed theories and definitions that further refine the approach adopted here. Views of both critical and creative thinking typically fall into different kinds of groupings and emphasise different dimensions and these have been shown to change over time (Anderson & Krathwohl 2001). A review of many of these theoretical perspectives is included in Chapter 2 of the study in order to extrapolate the frameworks that are valuable in regard to interpreting aspects of visual arts pedagogy.

Within the literature on critical and creative thinking terms such as: ‘thinking processes’; ‘thinking approach’; ‘thinking skills’; ‘good thinking’; ‘thinking traits’; ‘thinking dispositions’; ‘cognition’; ‘affect’; ‘affective’ as well as ‘higher order thinking skills’ appear frequently. The meaning of these terms can become confusing for those outside the fields of cognitive and educational psychology. It is also difficult to gain a clear understanding of their relational meaning when there is no universal use of terms amongst theorists. At times authors use some of these terms interchangeably. The term ‘thinking strategies’ appears to have a similar meaning to ‘thinking skills’ or ‘thinking abilities’ but subtle differences in meaning can be discerned. Halpern (1996:5) for example, defines critical thinking as, ‘the use of cognitive skills or strategies that increase the probability of a desirable outcome’. Within this statement it appears that Halpern differentiates between strategies and skills. There are also some differences noted between the language applied to critical thinking and to creative

thinking/creativity such that critical thinking theorists are more likely to refer to 'thinking skills', whereas creativity theorists refer to 'thinking abilities' or 'thinking traits'. In the Torrance Tests for Creative Thinking (TTCT), the term 'creative abilities' is used and this signifies generalised mental abilities – as opposed to skills – presumed to be brought into play in creative achievements. There are also terms that act to bind critical and creative thinking together like 'higher order thinking' and 'good thinking'. Both these terms appear to be simultaneously alluding to a capacity for both critical and creative thinking. Paul (1992:17) says, 'Good thinking is thinking that does the job we set for it'. The opposite of good thinking according to him is aimless thinking that lacks purpose. He explains that good thinking employs 'criticality and creativity' as these 'have an intimate relationship to the ability to figure things out' (ibid.).

In the main critical and creative thinking are referred to as 'cognitive processes' throughout this study. Further investigation of cognition occurs in Chapter 2 of the thesis where there is an introduction to some of the key theorists who have researched cognition. The term 'skills' is also used frequently in the study and this is intended to mean the particular set of thinking skills that form these cognitive processes. There are still variations in the number and types of skills attributed to critical thinking. Beyer (1987) for example, posits that critical thinking includes ten thinking skills while Paul (1992) identifies seventeen.

Both critical and creative thinking are cognitive processes that are recognised as higher order thinking (HOT). They are described this way because they involve advanced level (higher order) as opposed to basic thinking skills. When higher order thinking is mentioned within the study the concept includes more than just thinking skills. Paul (1992:103) points out that the concept of higher order thinking includes affective dimensions that are essential to the effective use of higher order thinking skills in real settings. The affective domain is an area of learning that deals with feelings, beliefs, values, attitudes, and motives. These are personality traits that determine an individual's behaviour and responses to stimuli. Specific personality 'traits', sometimes referred to as 'dispositions', related to the affective dimension of thinking are understood to make people more pre-disposed to think critically or creatively. Traits of a critical thinker, according to Paul (1992:103), include independent thinking and intellectual curiosity. Both these traits also happen to be associated with creative thinking (Starko 2005).

Theoretical Developments: Arts, Cognition and Learning

Throughout much of the twentieth century, arts subjects in schools were perceived as contributing more to students' affective rather than cognitive growth. This is because arts subjects, including the visual arts, were understood as operating and functioning within the affective rather than the intellectual realm. According to Efland (2002), Eisner (2002), Parsons (1992), and Davis and Gardner (1992) the development of this perception was linked to various theoretical beliefs and practises within the fields of psychology, art, and education. Efland (2002) comments that for much of the twentieth

century explanations of art were built on behaviourism and psychoanalytical views of the subconscious. He claims that such was the predominance of these theories, by the late 1960s there were few in the field of education that perceived of the arts subjects as cognitive in character. While new cognitive views had far reaching implications for school-based education in general, throughout the second half of the twentieth century the impact of school-based education on arts education was far more profound than for other subjects (Parsons 1992; Efland 2002). This is because the arts were the only traditional subjects in school education that clearly fell into the affective category (Parsons 1992:71). Efland (2002) and Parsons (1992) argue that the emergence of new theories of cognitive development and learning had a major impact upon the way the arts were categorised within educational institutions. Whereas previously they had been perceived as non-cognitive, now they were cognitive.

Davis and Gardner (1992) attribute the development of research within cognitive psychology that took either a symbol-systems approach or an information processing approach as generating a view of artistic behaviour as a cognitive process. They (1992:114) say that,

In fact the field of art education had been built in significant measure on a view of the artistic process as a feeling enterprise best accessed through free and untutored expression. However, the new vision was of something called “artistic knowledge”- a way of perceiving, thinking, and forming which was basic and therefore essential to education.

This new vision according to Davis and Gardner (1992: 92-123) brought with it changes in thinking about artistic development that were important for art education. Similarly, Delacruz (1997) comments that a new cognitive view of the arts meant artistic expression and aesthetic response were re-conceptualised as cognitive operations. This change clearly had consequences for the understanding and education of the child as artist.

By the late 1990s research into arts education in North America also began to focus on the cognitive competencies afforded by the arts in an attempt to raise the academic profile of the arts in American schools. A series of research studies collectively referred to as *The Champions of Change Report* (Fiske 1999) were influential in changing teachers' and school administrators' perceptions about the value of the arts in developing students' social and mental growth. A review of one of the studies contained in the report is included in Chapter 3.

In more recent times there has been greater attention within the field of arts education focused on the nature of arts and the ways in which they provide a platform for teaching higher order thinking. This is evidenced by the fact that there has been a growing body of professional literature in recent years that specifically explores the cognitive function of the Arts. Arthur Efland's book, *Arts and Cognition* (2002) and Eliot Eisner's book, *Arts and the Creation of the Mind* (2002) are two prominent contributions to the field. Eisner (2002: 35) proposes a vision for arts education that emphasises its cognitive

consequences. He argues that this vision has been difficult to achieve in the face of enduring misconceptions about the arts. Eisner (2002: 35) writes,

They [the arts] are regarded as concrete rather than abstract, emotional rather than mental, activities that are done with the hands and not the head, imaginary rather than practical or useful, more closely related to play than to work. Yet the tasks that the arts put forward – such as noticing subtleties among qualitative relationships, conceiving of imaginative possibilities, interpreting the metaphorical meanings the work displays, exploiting unanticipated opportunities in the course of one's work – require complex cognitive modes of thought.

Naturally, there are others who have worked both in, and outside, America that have contributed to on-going research, dialogue and debate about cognitive functions and strategies in the arts. For example, an Australian academic, Dr Susan Wilks (2004) has begun to articulate how the visual arts can be used as a thinking tool within what is popularly described as the 'thinking curriculum'. Wilks (2004) supports the use of philosophical inquiry methods for developing a more cognitively orientated visual arts curriculum. Philosophical inquiry emphasises dialogue as a means to develop students' lines of reasoning and involves extensive teacher questioning intended as a means to probe students' statements and assist students in making reasonable judgements.

Implications for Visual Arts Teachers

Realising the potential of the arts in what Presseisen (1999) calls, 'teaching for thinking' is something that is addressed not only through curriculum reform but also through changes to teaching practices. Hagaman (1990:150) comments on the existence

of a gap between curriculum reform and reforms to teaching visual arts and slated this as an issue for art education in North America.

In order for students to have an art education which allows for real learning in the Vygotskian sense, the effects of teacher and peer collaboration in student learning and the inquiry process must be more fully acknowledged. Changes in curricula will not be enough if there are not effective changes in pedagogy as well.

There is naturally a difference between curriculum theory and actual instructional practice although practice is often thought of as ‘theory in action’. For the visual arts to have an important role in promoting thinking, there needs to be more attention paid to improvements within the teaching profession and not just to curriculum reform.

There appears to be a tendency towards complacency within arts education that stymies much needed pedagogical change in terms of teaching for thinking. Hamblen (1997:27) comments on this attitude of complacency after reviewing American research studies and professional literature in the 1990s. She says,

In current art education discourse there is an implication that art study *ipso facto* results in instrumental outcomes [in higher order thinking] without specific intervention and without teaching to or for particular outcomes.

Hamblen’s concern was that this assumption had weakened efforts to improve arts teaching practices.

Recommendations for reforms to art teaching practices have in more recent years stressed the need for teachers to take a more active role in shaping and guiding learning activities in the classroom and in setting complex tasks that become increasingly more challenging for their students. In reviewing contemporary debate and recommendations made within the field of art education about the new kind of role art teachers should adopt, Delacruz (1997:7) concludes that,

Art teachers are no longer thought of as non-interventionists, ready to stimulate students' creative and mental growth but careful not to intrude too heavily in students' natural development. Rather they are expected to interact directly and purposefully with students to shape and alter their ways of thinking about art.

The implications of Vygotsky's theories for visual art pedagogies are clear to many visual arts educators including Fielding (1989:47). Fielding draws on Vygotsky's socio-cultural educational theories in proposing a new role for visual arts teachers when he says,

For significant learning in the visual arts to occur in the classroom, the teacher needs to become involved in the enculturation of the child into the thinking processes and conceptual organization of Art. Teachers should also be aware that the most beneficial learning and subsequent development in Art occurs when they involve (extend) children in those areas of artistic behaviour, thinking and knowledge that are in advance of those that they can perform independently.

The *enculturation* that Fielding refers to extends beyond teaching rules and concepts, to providing logical structures that permit the individual student to act and think in more flexible and complex ways. The bodily and perceptual experiences afforded by

immersion in the visual arts should become the foundational source for the development of higher order thinking.

Conclusion to Chapter

This first chapter of the study has introduced ideas and issues raised by some cognitive scientists, visual arts educators and educational theorists showing a consensus of opinion in regard to the need for school curriculum to be more oriented towards teaching thinking, specifically higher order thinking, in various educational contexts. It has also been suggested that new theories of learning have re-defined the role of teachers, conceiving of them as active agents who provide the mental scaffolding required to develop these cognitive abilities amongst their students. There are references to the growing body of evidence that indicates teaching higher order thinking skills requires the use of more deliberate and conscious approaches to curriculum delivery.

It is also asserted that professional discourse in the field of visual arts education has often promoted the idea that involvement in the discipline area naturally fosters the acquisition and application of complex thinking skills. While this may indeed be the case the danger of this message is that there is less awareness of the intervention that occurs between subject and learner. In contrast to this view this study proposes that further research is needed that explores the role of curriculum planning and teacher intervention in fostering higher order thinking skills through the visual arts.

Within the chapter it has been pointed out that the visual arts, like other arts subjects, have until relatively recently been categorised as non-cognitive subjects. In the past the arts were perceived as contributing more to the development of affect rather than intellect. It is argued that new theoretical understandings about the arts and cognition opened the door to new ways of perceiving the visual arts in education.

There has been a concerted curriculum movement towards prioritising the teaching of thinking skills in schools over the last few decades and this is often referred to as *the thinking skills movement* (Marzano 1993; Halpern 1996; Presseisen 1999). The argument raised by many educational researchers and policy makers for prioritising the teaching of higher order thinking in educational institutions was that they were neglecting to teach students to go beyond the simple mental activities of recall and restatement of ideas and facts (Paul 1992). The ability to think in critical and creative ways is believed to be an essential life skill and schools are charged with the responsibility for teaching skills and strategies that contribute to the development of these cognitive competencies. The forthcoming chapter provides a more comprehensive review of the professional literature associated with critical and creative thinking theories and the thinking skills movement. A review of theoretical developments as they relate to cognitive views of visual arts and visual arts education is subsequently undertaken in Chapter 3. There is a specific focus on investigations that have contributed to an understanding of the role of critical and creative thinking in art based activity and learning.

Chapter 2

Critical and Creative Thinking: Theory and Pedagogy

This chapter examines critical and creative thinking in more detail. This body of theoretical knowledge has informed curriculum developments, specifically the thinking skills movement in education. Constructs of critical and creative thinking are often correlated within education literature devoted to higher order thinking, therefore an analysis of the relationship they share follows on from the independent examination of both constructs. The chapter reviews the rise in the thinking skills movement within education and explains why teaching for creative and critical thinking is widely recognised as an important educational goal. Theoretical developments within the movement are presented, particularly those that support an infused approach to teaching higher order thinking. The emphasis of these infused curriculum approaches is to promote critical inquiry and the finding and solving of creative problems within different discipline areas (Cropley 1992). Many strategies used within these infusion programs adopt an inquiry-based approach well suited to the cognitive task orientation and educational objectives identified within the visual arts curriculum. Three inquiry based strategies or models singled out for attention in this chapter are, Community of Inquiry, Socratic Dialogue, and Cooperative Learning because they have received a degree of support from visual arts educators and researchers in recent years.

Theories of Creativity

Studies of creativity can generally be grouped into three types of investigations. Starko (2005: 4-5) describes two separate approaches, one identifies the characteristics of

individuals whose work has been determined to be creative, while the second looks more at the work itself and asks the question, ‘what makes this creative?’ Weisberg (1992: 5) adds yet a third approach by distinguishing the creative process – how a creative work was produced – as something to consider in its own light. Within these three investigative approaches creativity is typically characterised as works or ideas that are novel and original while remaining appropriate to the original context (Weisberg 1992; Cropley 1992; Starko 2005).

Investigations of creative people, process and products can be linked to operations in visual arts education. Creativity is modelled through learning about the lives of creative individuals who have contributed to the domain, the identification of aesthetic qualities within works of art considered to be creative products, and encouraged through a focus on creative aspects of the art making process (Board of Studies New South Wales 2000). The following sections explore concepts and theories particular to these three fields within creativity inquiry.

Creative Individuals

Within investigations of creative people, there are those that have explored individuals’ social and psychological attributes and others that examine life events or biographical traits that shape a creative individual (Starko 2005). Amongst studies of the lives of creative people, the work of Csikzsentmihalyi (1988; 1996) and Gardner (1993) are widely cited within the field of inquiry into creativity. Both scholars have researched the lives of creative people and presented an extensive series of case studies (Starko 2005). Gardner (1993: 35) defines the creative individual as,

A person who regularly solves problems, fashions products, or defines new questions in a domain in a way that is initially considered novel but that ultimately becomes accepted in a particular cultural setting.

While there is no such thing as a generic creative person, there are a number of personality traits or characteristics that are commonly identified by creativity researchers. The following is a table developed by Tardif and Sternberg (1988) that presents the findings of sixteen leading creativity researchers as to the cognitive characteristics of creative individuals.

Table 2.1 Cognitive Characteristics of Creative People, Table from Tardiff and Sternberg (1988: 434)

Characteristics	Barron	Csikszentmihalyi	Feldman	Gardner	Gruber & Davis	Hennessey & Amabile	Johnson-Laird	Langley & Jones	Perkins	Schank	Simonton	Sternberg	Taylor	Torrance	Walberg	Weisberg
Originality	
Articulate and verbally fluent	
High intelligence											.			.	.	
Good imagination	
Creative in a particular domain	
Thinks metaphorically	
Uses wide categories and images					
Flexible and skilled decision maker		
Makes independent judgments	
Copes well with novelty												.	.			
Thinks logically	.								.							
Escapes perceptual set and entrenchment	.											.	.			
Builds new structures	
Finds order in chaos	
Asks "Why?"				
Questions norms and assumptions				
Alert to novelty and gaps in knowledge
Uses existing knowledge as base for new ideas	
Prefers nonverbal communication											
Creates internal visualizations					.									.	.	

The most commonly identified characteristics amongst researchers appears to be that creative individuals are creative in a particular domain, are alert to novelty and gaps in knowledge, and use existing knowledge as a base for new ideas. Table 2.1 represents research studies conducted prior to 1988. More recently, systems perspectives on creativity take into account the cognitive abilities of the creative person and their

relation with a field of practice and a domain of knowledge. Csikszentmihalyi (Csikszentmihalyi in Sternberg, 2004), Howard Gardner (1993), Gruber and Wallace (1992) make use of experimental studies and case studies of highly creative individuals to advance this position. Csikszentmihalyi (2004: 314-316) and Gardner (1993:41) describe the way in which there needs to be reciprocity between the individual, field and domain in order for creativity to occur. Gruber and Wallace (1992:5) point out that the creative person must reconstruct and take possession of whatever he or she needs for the work while retaining a social awareness of the relation between the work and the world. Amabile (1996) and Robinson (2001) advance cultural theories of creativity. Amabile (1996) who has conducted creativity research with school age children believes variables within the social environment of home and school largely determine the extent to which the child is able to develop creative behaviors. Robinson (2001:166) comments that original ideas come from the inspirations of individual minds and that this is not an isolated process. Creative people, as Robinson (2001:11) says, ‘need to draw on a network of existing knowledge and ideas and are stimulated by the work, ideas and achievements of other people.’

Creative Process

The creative process engages individuals in working towards creative outcomes such as new ideas, new ways of doing things and new products (Pohl 2000a). Although much creative work may occur in the mind, the individual must still do or produce something in the public domain in order for it to be considered creative (Gardner 1993).

When applied to creating art, the creative process can involve metaphorical thinking, flexibility and visualisation (Tardiff and Sternberg 1988; Gardner 1993; Csikszentmihalyi 1996; Sternberg and Williams 1996; Starko 2005). Metaphorical thinking allows the individual to find parallels between seemingly unlike ideas and to take ideas from one context and represent the idea effectively in a new context (Csikszentmihalyi 1996; Starko 2005). Flexibility denotes the ability to look at a situation from many points of view or to generate many categories of responses (Sternberg and Williams 1996; Starko 2005). Visualisation or visual thinking assists some creative individuals to conceive of things they cannot see (Gardner 1993; Csikszentmihalyi 1996; Starko 2005).

There is a classical division of stages in creative thought: preparation, incubation, illumination, and verification. Wallas proposed this four-stage model of the creative process in 1926 (Torrance 1988). In the *preparation* stage background work is done to identify what the problem is and this can be carried over long periods of time to gain knowledge and skills in the identified area. In the *incubation* stage the individual stops processing and shifts to other areas of thought even though the mind is subconsciously processing the problem. In the *illumination* stage the problem is addressed and an answer creatively found. The *verification* stage requires evaluation and refining of the solution. While different scholars have contested this model it does suggest a pattern of focus, withdrawal and then breakthrough (Robinson 2001:135).

Robinson (2001: 133) concludes that the creative process involves a dynamic interplay between generating ideas and making judgements about them. Generating ideas requires

a form of mental play in which the imagination becomes free to generate something original. The purpose of this generative activity is to find an alternative to what has become conventional or routine or to expand the possibilities of a situation (Robinson 2001). The creative process also involves being able to make judgements about the value of a new work or idea. Many ideas generated in the creative process are likely to be dead ends that do not work. Modifications may have to be put in place before a creative idea can work or succeed. As Robinson (2001: 133) points out, evaluating which ideas work requires judgement and critical thinking.

In creativity literature the term ‘flow’ is often used to describe peak creative performances. This term was used by Csikszentmihalyi (1996) to describe times when an individual is immersed in something that completely engages his or her creative capabilities. During a flow state the individual draws equally from knowledge, feelings and intuitive powers (Robinson 2001: 155). Csikszentmihalyi’s research revealed that many highly creative individuals in his study experienced a shift in consciousness during ‘flow’ such that they felt outside of themselves and lost a sense of time.

Creative Products

The creative object as product is the outcome of the creative process. The products of creativity can include a variety of expressive outputs such as performances, ideas and objects (Taylor 1988). The creative object is valued because it is recognised as an achievement of making and is usually judged according to notions of originality, appropriateness and acceptance within a knowledge area or discipline (Gardner 1993). Not surprisingly, judgements about these qualities can create dilemmas. How is a

product judged to be creative and who can be the judge of whether something is both original and appropriate? Creativity theorists point out that determining the creativeness of a product or idea is often subject to the passing of time in terms of history, it has to be considered within the cultural context in which something was created, and is usually judged against the work of others by experts within the same discipline or field (Weisberg 1992; Sternberg 1988; Perkins 1985).

Imagination and Creative Thinking

There is often an assumption that creativity – specifically creative thinking – employs the use of one’s imagination. Goldberg (2001: 51) writes,

The relation of imagination to creativity merits attention. It could be argued that imagining is the core of creating. One must imagine in order to create, although one need not create in order to imagine. However, if creativity is viewed as an action of process, the line tends to blur. In that light imagination could be viewed as a creative process.

In many contexts imagination refers to someone’s creative talents and achievements but there are equally negative associations with the word. For example, it is not uncommon to hear someone described as having ‘an overactive imagination’ and in this sense it means their logic cannot be trusted because they are out of touch with reality. However in some knowledge domains, such as the arts and sciences, performance and production are generally thought to benefit from the application of a rich imagination.

Imagination is usually understood to involve the development of mental images that extend reality or project reality into a new time or space. This is a feature of Efland's (2002: 133) definition:

Imagination is the act or power of forming mental images of what is not actually present to the senses or what has not actually been experienced. It is also the act or power of creating new ideas or images through the combination and reorganization of previous experiences.

Unlike Efland, Greene (1999: 10) does not refer to mental imagery but rather to the creation of new perspectives on reality through the power of imagination.

[without]...the ability to enter alternative realities, to bring an 'as if' into being, to look at things as they could be otherwise – we would be sentenced to perpetual literalness, to be confined to 'square rooms'.

There are some theorists and philosophers who are well known for their writings on the role of the imagination in cognition. These include Immanuel Kant and John Dewey. Kant (Efland 2002: 135) recognises imagination 'as the productive faculty of cognition' and believes imagination could bring intellectual ideas into play and thus enliven the mind and entertain others. Fleener (2000) writes about Dewey's transactional theory of cognition and how he espouses the theory that cognitive experience is emergent from non-cognitive experiences. These non-cognitive experiences are thought by Dewey (ibid) to include emotions, instincts, habits, feelings and the imagination. Thinking is a process that relies on these affective levels of experience, and in this way he conceives of thinking as a dynamic partnership between structure and logic on the one hand and less structured experiences such as imagination on the other. Imagination allows for a 'playing-out' of possibilities as one struggles for resolution in problematic situations.

Engaging the creative imagination with thoughtful deliberation of potentialities (what might be described as critical thinking) is essential to what Dewey believes forms a higher level of mental inquiry. Imagination in this sense, while still relegated to the realm of affect, is in dynamic partnership with higher order mental processing.

Levels of Creativity: Applying Principles of Creativity in Pedagogic Contexts

Many theories and definitions of creativity appear to focus on high-level creativity, creativity that results in change to some aspect of our world in dramatic ways (Starko 2005). Some theorists believe that creativity can actually be judged according to levels of creative output. Taylor (1959) as cited in Torrance (1988: 46) conceived of distinct levels of creativity. He suggested the following five levels:

1. Expressive creativity, as in the spontaneous drawings of children.
2. Productive creativity, as in scientific or artistic products where there are some restrictions.
3. Inventive creativity where ingenuity is displayed with materials, methods and techniques.
4. Innovative creativity, where there is an improvement through modification of things or ideas.
5. Emergenative creativity, where there is an entirely new principle or assumption around which new intellectual movements can flourish.

Taylor pointed out that many people have the fifth level (emergenative) in mind when they talk about creativity but that this level is in fact so rare that many investigations of creativity are involved in the lower levels. Thus, popular concepts and definitions of creativity tend to preclude the creative efforts of children. It appears that many theorists who study creative thinking and behaviour amongst children focus on the lower four levels of creativity identified in Taylor's model. To account for differences between

standards of adult and child creativity, Pohl (2000b) extends the identification of creative thinking in educational contexts to include instances when a child reapplies or reorganises an existing idea, process or product into a new or different form. This can be linked to Taylor's fourth level – innovative creativity.

In the context of school education one could argue that the degree of originality and appropriateness of thinking is assessed according to the behaviour and performance of one's peers. In the context of the classroom teachers may recognise that a particular student has produced something out of the ordinary and special and describe this as creative (Bates 2000). There is also an argument for establishing assessment criteria based on developmental stages within the knowledge domain. Amabile (1996) identifies domain relevant skills as an essential component of the creative process. She points out that finding problems of increased sophistication demands increased understanding of the knowledge domain. This suggests that higher levels of creative performance should be demonstrated as students develop sophistication and mastery of content knowledge and skills. Extensive knowledge, however, does not guarantee higher levels of creative thinking because one can become entrenched and 'find it difficult to view a field with a fresh perspective' (Starko 2005: 261). The setting of challenging problems and the establishment of authentic assessment procedures for evaluating creativity is therefore a critical aspect of the teacher's role in fostering creative thinking.

Summary of Creativity

The discussion thus far has centred on three types of investigations that have characterised creativity as a quality of thought, process and product. Definitions focus on these different aspects but essentially it is argued that novelty, originality and appropriateness are key indicators of creativity. Gardner (1983) suggests that a creative individual regularly engages in solving problems, consistently fashions novel and innovative products and frequently defines new questions. How one might apply these indicators to assessments of creative performance in schools is not always clear.

Educationalists have found it difficult to marry popular definitions of creativity to the work of young people (Pohl 2000a; Goldberg 2001; Koster 2004). This is because definitions focus on higher levels of creativity beyond the reach of most students. It is argued here therefore, that Taylor's (1959) model (cited in Torrance 1988), which describes levels of creativity, provides a useful benchmark for assessing creative performance amongst students. Very young students may be able to attain lower levels of creativity. As students grow older and have the opportunity to build more sophisticated knowledge and skills, higher levels of creativity may be demonstrated (Torrance 1988; Amabile 1996). It has also been asserted that creativity can be encouraged and developed through establishing the social/environmental conditions that encourage curiosity, complexity, risk taking and imagination (Torrance 1988). Encouraging the use of imagination is claimed to be important as this can contribute to the creative process (Efland 2002).

As highlighted earlier in this thesis, the terms creative and critical are often collocated when researchers speak of higher order thinking processes. Nonetheless, both terms require individual attention in order to ensure their collocation does not inadvertently obscure any individual meaning. Having explored theories and definitions surrounding creativity, the next part of the chapter focuses on aspects of critical thinking and introduces definitions and key concepts central to understanding its cognitive and affective dimensions.

Theories of Critical Thinking

Two 20th century figures, Dewey and Bloom, are generally considered to have been the major historical sources and guides in the field of critical thinking in education (Kennedy, Fischer & Ennis 1991). John Dewey (1934: 3) an early advocate for promoting critical thinking amongst school students, stressed that teaching critical reflection required a problem solving focus to learning. Bloom and his colleagues (1956) developed the *Cognitive Taxonomy of Educational Objectives* and this provided researchers and educationalists with a common vocabulary to describe cognitive behaviour. Although not originally designed as an instructional planning tool, Bloom's cognitive taxonomy was later adapted for classroom use and is still one of the most universally applied models across most levels of schooling and in many areas of study (Pohl 2000a). Bloom identified six levels of cognitive functioning – knowledge, comprehension, application, analysis, synthesis and evaluation. The last three categories in this taxonomy – analysis, synthesis and evaluation – are usually equated with critical thinking (Kennedy, Fischer & Ennis 1991). Bloom (1956) believed it was possible to develop behavioural objectives for each of these levels and to follow this up by

structuring learning activities to support them. Bloom argued that this was important because educational objectives in schools often remained at the lower levels of cognitive functioning.

Critical Thinking Definitions

The literature devoted to critical thinking indicates that there are diverse views about its definition and the way it can be best conceptualised (Bailin & Case 1996; Kennedy, Fischer & Ennis 1991; van Der Wal 1999). Many definitions appear to focus on the presentation or demonstration of critical thinking in terms of an ability to judge the value of information and to justify a decision or course of action (Moore and Parker 1994). Pohl (2000a: 27) defines critical thinking as,

... the process used in evaluating alternatives, making judgements based on sound reasoning, or justifying a position, stance or point of view.

Alvino's (1990) definition is similar to Pohl's but elaborates a little more on the nature of the process. Alvino (1990: 50) describes it as,

The process of determining the authenticity, accuracy, or value of something; characterised by the ability to seek reasons and alternatives, perceive the total situation, and change one's view based on evidence. Also called 'logical' and 'analytical' thinking.

Thinking Skills within Critical Thinking

Across many of the descriptions of critical thinking there are often references to the specific 'skills' that are involved. Burden and Bryd (1994) categorise critical thinking as a higher order thinking activity that requires a set of cognitive skills. Frequently

mentioned skills include, identifying and clarifying issues in an argument, assessing the reliability and credibility of information, distinguishing relevant from irrelevant information, determining the strength of an argument, synthesising information, making decisions, presenting a persuasive argument and defending a stance taken (Beyers 1987; Kennedy, Fischer & Ennis 1991; van Der Wal 1999).

Affective Dimension of Critical Thinking

Critical thinkers are described as autonomous responsible individuals who weigh the consequences of their actions, engage in advanced and thoughtful planning and deal in effective and innovative ways with personal and social problems (Bailin 1998). Perhaps the most comprehensive list of character traits that qualify the affective dimension of critical thinking is that presented by Marzano (1991: 426). His list of nine critical dispositions is a composite list drawn from the works of several authors. Table 2.1 below is adapted from Marzano 's list.

Table 2.2 Composite List of Personality Dispositions Associated with Critical Thinking, Adapted from Marzano (1991: 426)

1. Seeking clarity and precision when information is unclear.
2. Trying to be well informed.
3. Seeking reasons for what you believe.
4. Taking into account the total situation.
5. Carefully analysing information.
6. Remaining open-minded.
7. Taking a position (and changing it) when the evidence is sufficient to do so.
8. Showing sensitivity to the feelings, level of knowledge, and degree of sophistication of others.
9. Resisting impulsivity.

Purpose of Critical Thinking

Critical thinking is widely acknowledged to be an important ability that discourages individuals from blindly accepting what they see and hear. Particular situations are thought to demand the application of critical strategies (Marzano 1991; Presseisen 1999; Pohl 2000b). Pohl (2000b: 28) points to the need for critical strategies in five different kinds of tasks:

Critical thinking is particularly important in tasks that require some degree of planning, forecasting, communicating, decision-making and/or evaluating.

Within communicating tasks one might describe, clarify, compare and organise information or ideas. In contrast, evaluating tasks demand that one recognises bias, distinguishes fact from opinion, and tests the validity of a decision (Pohl 2000b).

Many concepts of critical thinking appear to focus largely on evaluative tasks. Theorists who stress the decision making aspect of critical thinking are Simon and Kaplan (1989: 24) who say it is, ‘the formation of logical inferences, calculating likelihoods, and making decisions’ and Ennis (1985: 46), who says it is ‘reasonable, reflective thinking that is focused on deciding what to believe or do’.

Summary of Critical Thinking

Overall, it has been shown that research in the field of critical thinking indicates that the ability to think critically requires individuals to use a storehouse of thinking skills and strategies as well as affective traits that are adapted to different practical situations as well as to diverse academic domains. It is also argued that particular tasks or situations

demand the use of critical thinking and these are analytical and evaluative in nature. The ability to analyse and evaluate information is useful in life because it allows one to test the validity of information and to make decisions and judgements based on sound information.

The next part of the chapter presents evidence that supports the view that critical and creative thinking are interdependent thinking processes. The implication of this conceptual shift is that school programs should be aiming to combine critical and creative skills within learning tasks.

Relationship between Creative and Critical Thinking

Research scholars have questioned the nature of the relationship between creative and critical thinking (Torrance 1988; Sternberg 1988; Sternberg and Williams 1996; Swartz and Perkins 1989; Paul 1992; Cropley 1992; Marzano et. al. 1993; Anderson and Krathwohl 2001). Typically, research inquiry into both thinking processes has been conducted separately and past descriptions of both forms of thinking differentiated them. Critical thinkers were often described as convergent thinkers because invariably they were able to find a single solution to any particular problem. The creative thinker, on the other hand, was described as a divergent thinker who was likely to find many solutions to a particular problem. The divergent/convergent conceptual divide, however has been criticised by creativity and critical thinking theorists. Guilford (1959), as cited in Torrance (1988), concluded that while creativity resulted in divergent products, creative thinking could not be equated with divergent thinking because sensitivity to problems and redefinition abilities are important in the psychology of creativity.

Contemporary cognitive theories, models and taxonomies now suggest a close relationship is formed between creative and critical thinking processes. They highlight the role of critical thinking in creativity and creative thinking in critical thought processes (Swartz and Perkins 1989; Paul 1992; Sternberg and Lubart 1999; Anderson and Krathwohl 2001; Starko 2005). Torrance (1988: 46) surmises that critical thinking contributes to an individual's sensitivity to problems and this is essential in getting the creative thinking process in motion. Sternberg and Lubart (1995) point out that the process of having creative ideas or producing creative outcomes requires an interchange between critical and creative thought. Sternberg and Williams (1996: 3) say that creative thinking requires analytic skills and that,

Analytic ability is typically considered to be critical thinking ability. A person with this skill analyses and evaluates ideas... Without well-developed analytic ability, the creative thinker is as likely to pursue bad ideas as to pursue good ones. The creative individual uses analytic ability to work out the implications of a creative idea and to test it.

Anderson and Krathwohl (2001) have developed a revised version of Bloom's original cognitive taxonomy and this proposes that critical thinking skills are required at certain stages in the creative thinking process. Table 2.2 given below, is adapted from Pohl (2000a). It illustrates Bloom's (1956) taxonomy and a later revision of this taxonomy by Anderson and a team of cognitive psychologists (2001). This table places cognitive categories named in Bloom's taxonomy in the left hand column and shows Anderson's categories in the middle column. More expansive descriptions of Anderson's cognitive categories are shown in the far right hand column.

Table 2.3 Cognitive Categories According to Bloom (1956) and Anderson and Krathwohl (2001), Adapted from Pohl (2000a: 8)

Bloom's Original Taxonomy	Anderson and Krathwohl's Taxonomy	Description of Sub-categories in Anderson and Krathwohl's Taxonomy
Knowledge	Remembering	Recalling Information
Comprehension	Understanding	Explaining ideas or concepts.
Application	Applying	Using new knowledge in another familiar situation.
Analysis	Analysing	Differentiating between constituent parts.
Synthesis	Evaluating	Justifying a decision or course of action.
Evaluating	Creating	Generating new products, ideas or ways of viewing things.

The result of Anderson and Krathwohl's (2001) taxonomy is that a number of changes, some more significant than others, were made to the existing taxonomy. The major categories of thinking were re-ordered according to what was viewed as an increasing level of complexity. This placed creative thinking – the creating level of the new taxonomy – at the highest level of the taxonomy, whereas, critical thinking – the evaluating level of the new taxonomy – had formerly been placed at the highest level (Pohl 2000a). Pohl (2000a: 10) states that according to Anderson and Krathwohl's new taxonomy it can be assumed,

...one can be critical without being creative (i.e. judge an idea and justify choices) but creative production often requires critical thinking (i.e. accepting and rejecting ideas on the path to creating a new idea, product or way of looking at things).

Marzano (1991, 1993) also asserts that creative thinking is closely related to critical thinking, however, in his view the important difference is the situational purpose that demands one form of thinking over the other. The emphasis of creative thinking, he

points out, is to generate new and unique ways of conceiving information rather than thoughtful analysis of information typically described in accounts of critical thinking.

Summary Perspective of the Relationship between Critical and Creative Thinking

An analysis of various theoretical perspectives suggests that, while the exact nature of the relationship between critical and creative thinking is contentious, there is some consensus that they form a dynamic partnership in cognition. It is possible to conclude from the research that different situational purposes encourage the application of either critical or creative thinking. However, when individuals are attempting to find and solve problems they are believed to move back and forth between creative and critical reflection in order to develop solutions or weigh the consequences of any one solution. In this situation the interplay of critical and creative thinking contributes to deeper understanding of subject matter, independence of thought and actions, the generation of creative ideas and products as well as cognitive flexibility.

The following part of the chapter is focused on issues related to the development of critical and creative thinking through education. School culture has been criticised for not supporting student engagement in higher order thinking in the past and recognition of this failure has spawned a curriculum reform movement dedicated to changing this situation. The discussion looks at the impact of instruction on students' cognitive ability, the different curriculum delivery modes recommended, what researchers have said about the potential of instruction in the development of critical and creative thought and some of the teaching strategies and learning structures that have been developed towards achieving this end.

The Thinking Skills Movement in Education

Helping students become more effective thinkers has become a fundamental goal in education over the last thirty to forty years. Theorists have argued that the application of lower-order thinking skills like comparing, contrasting, predicting and finding causes are commonplace in education. This is not reported to be the case for higher order thinking (Nickerson and Perkins 1985; Presseisen 1999; Halpern 1996). A preoccupation in schools with teaching students to learn and recall information has led to a situation where students can continue through the education system without learning to use their minds independently. Comer, Haynes, Joyner and Ben-Avie (1995) claim young people are particularly dependent on schools for learning higher order thinking. Those involved in the thinking skills movement advocate the need for schools and teachers to deliberately involve students in learning tasks that engage students in higher order thinking processes (Presseisen 1999).

Higher order thinking tasks involve both critical and creative thinking and the thinking skills associated with these. An individual's capacity for higher order thinking allows him/her to think more productively by combining creative thinking (to generate ideas) and critical thinking (to evaluate ideas). According to scholars in both critical and creative fields of inquiry, both modes of thinking are essential for a well-rounded productive and independent thinker (Paul 1992).

Impact of Instruction on Students' Higher Order Abilities

Nickerson, Perkins and Smith (1985) as cited in Wilks (2004: 6) 'believed that thinking skills, like motor skills, could be taught, practiced and learned'. Kennedy, Fisher and Ennis (1991) claim there is sufficient empirical evidence to support the view that school students' critical thinking can be improved through instruction. Cropley (1992) similarly claims a number of empirical studies have shown students' disposition to engage in creative thinking is improved through applying appropriate training methods in schools.

Various environmental factors in schools are shown to influence the development of critical and creative thinking. Amabile's (1996) research into creativity led her to believe that a child's social environment (home and school) plays a large part in forming the creative inclination of the child. Environmental factors include the social and physical conditions that impact on the learning experience. These involve people with whom students interact at school like peers, teachers and administrators and physical conditions like resources, equipment, facilities and curriculum. While Amabile (1996) acknowledges the role of parents, she considers teachers have an important influence upon the creative inclinations of the child within the social environment of schools. Amabile (1996) found that motivational factors, the acquisition of domain relevant skills and knowledge as well as engagement in creative tasks contributed to a child's ability to be creative and these are all within the control of teachers.

Many researchers have similarly described the important role of teachers in the development of higher order thinking (Nickerson, Perkins and Smith 1985; Cropley 1992; Halpern 1996; Csikszentmihalyi 1996; Amabile 1996; Presseisen 1999; Starko 2005). Sharron (1987: 37) and Fielding (1989) claim that as adult mentors the mediation of teachers plays a major role in the development of a child's capacity for critical and creative thought. They argue deliberate educational intervention is warranted because students need to be guided to develop their abilities to reason, inquire and form concepts. Fielding (1989) states that this view is supported by Vygotsky's socio-cultural theories of cognitive development, as Vygotsky surmised learning could take place without pedagogic intervention but considered that learning higher order cognitive processes required the guidance and help of an adult mentor.

Thinking Skills Instruction: Separate Curriculum Versus Infused Curriculum

Emerging from the large body of research and professional interest in the subject of cognitive development are many thinking skills programs designed for education (Marzano et. al. 1993). There appear to be strong arguments in favour of both *separate programs* as well as *infused programs* amongst educational theorists (Cotton 1991). Programs that teach thinking skills separately from the regular curriculum are referred to as *separate programs* and programs that integrate thinking skills instruction into the regular curriculum areas are *infused programs* (Cotton 1991).

Those favouring the separate method maintain that, like reading and writing, critical and creative thinking deserve separate instruction (Lipman 1988: 143). Advocates for infused programs, however, argue that learning cognitive skills may not necessarily

facilitate their application to content-area studies or real-life situations. This approach it is argued can also enhance content-domain learning (Resnick and Klopfer 1987: 36; Swartz and Perkins 1989). There are also educators who have argued for a two-pronged effort that employs both separate and infused programs in schools (Presseisen 1999).

Within contemporary thinking skills instruction literature there does seem to be significant support for the adoption of an infused approach (Sternberg and Lubart 1991; Amabile 1996; Csikzentmihalyi 1996; Starko 2005). Starko (2005: 260) for instance, supports an infused approach because teaching curriculum content remains at the heart of most school activities and content areas provide a vehicle for developing problem solving and critical and creative thinking.

Swartz and Parks (1994) write that the rationale for an infusion approach is based on three key principles. The first is that the more explicit the teaching of thinking is, the greater the impact it will have on students. The second is that the more classroom instruction incorporates an atmosphere of thoughtfulness, the more open students will be to valuing good thinking. The third is that when teaching of thinking is integrated into content instruction, the more likely it is that students will think about what they are learning.

Amabile's (1996) argument for using an infused approach to teach creative thinking is that domain-relevant skills – the knowledge and skills of the content base – define the area in which the individual can be creative. Finding problems of increased sophistication, Amabile (1996) argues, demands increased understanding of knowledge

within specific domains of knowledge. Amabile's componential model of creativity focuses on the ways in which individuals need knowledge in order to be creative.

Teaching for Creativity

The capacity for creativity is not always understood to be teachable, for example, some social and biographical traits are not open to the influence of teachable methods and procedures (Cropley 1992; Weate 1993; Starko 2005). Hennessy and Amabile (1988) on the other hand, suggest their research demonstrates that social and environmental factors play a more major role in creative performance than specific thinking skills and personality attributes already possessed by individuals. Corcoran (2006: 47) states that Amabile's research is perhaps the most positive in forming the opinion that, given the right circumstances, an individual's creative behaviour, and thus performance, can be improved. Sternberg and Williams (1996) argue that having a creative attitude is at least as important as creative thinking skills and that education can influence the development of both.

Studies of creative people have found that they excel in a particular pursuit because they love what they do (Amabile 1983, 1988; Gardner 1993; Sternberg and Williams 1996). It is argued that this understanding supports the view that schools need to establish a learning environment that builds students' motivation to pursue particular learning activity (Brophy 1988; Amabile 1988, 1996). Intrinsic motivation is internal to the student but it is claimed these inner states can be aroused by establishing learning tasks that are stimulating, interesting and challenging (Delacruz 1998). Unleashing creative performance in the classroom is also attributed to helping students discover their

interests or talents (Gardner 1983; Sternberg and Williams 1996). Curiosity comes into play in relation to objects, events and ideas that are unusual, animated, humorous, suspenseful and problematic (Delacruz 1998). Research findings also indicate that a key factor in student motivation is prior success and self-efficacy (Delacruz 1998). Ashton and Webb (as cited in Delacruz 1998: 55) surmise, 'that the basis for human motivation is the belief that one's actions produce a result in the environment'.

Starko (2005) advises that models designed to encourage creative thinking within discipline-specific activities include strategies for finding problems, problem solving, focusing on important ideas and expressing discoveries. Educational models and strategies for enhancing creativity include: the Incubation Model of Teaching, the SCAMPER model, problem finding, Creative Problem Solving (CPS) model, random input, divergent thinking strategies like brainstorming, synectics and the use of metaphors and analogies (Starko 2005; Sternberg and Williams 1996).

Sternberg and Williams (1996: 5) present 25 strategies that teachers can use to develop creativity in the classroom based on the investment theory of creativity. Amongst the teaching strategies they advocate are, modelling creativity (teachers as role models), building student self efficacy, questioning assumptions, encouraging idea generation, rewarding creative ideas, allowing time for creativity, instructing and assessing creativity, allowing mistakes, teaching self-responsibility and promoting self regulation, using profiles of creative people, encouraging creative collaboration and imagining other viewpoints.

There are a number of research studies that have criticised aspects of school culture as having a negative influence on the expression of a child's creativity (Corcoran 2006). Corcoran cites the studies of Csikszentmihalyi (1996), Torrance (1995), Sternberg and Grigorenko (1997) and Dacey and Packer (1992) as those that identify different ways in which school systems squash creativity. Dacey and Packer (1992) claim that the enforcement of inflexible rules and standardised routines play a part in the prevention of original ideas and creative performance. Csikszentmihalyi (1996) asserts that measures of creativity indicate that, after attending school for a short time, many students become more cautious and less innovative. He also points to the teacher as one of the main offenders in the suppression of creativity (Corcoran 2006). Sternberg and Grigorenko (cited in Corcoran 2006: 40) similarly focus on the role of the teacher within classrooms and their research finds that teachers' authoritarian position within classrooms has a negative effect. Students are able to quickly identify that teachers find certain behaviour unacceptable and those who ask original and unexpected questions are deemed by teachers to be disruptive.

Teaching for Critical Thinking

Research suggests the effectiveness of critical thinking education programs depends on the training of teachers (Resnick and Klopfer 1987; Marzano 1991). The infusion method requires that teachers have extensive knowledge of their own discipline, can instruct students how to apply cognitive skills in their areas and know when to make contextual links with other areas (Chambers 1988: 5-6). Golding (2004: 34-35) advises that teachers need to make the development of critical thinking skills an explicit aim

and that they should consider to personally model the same skills they want students to develop.

There are also indications that students themselves are more receptive at different points in their cognitive development. Maras (2001: 2) writes that Freeman and Sanger (1993) investigated the relationship of language and belief in terms of how children verbalise their critical thinking about a domain. One of the findings of their research indicated that a characteristic shift occurs in children's evaluative thinking between the age of seven and eleven. Freeman and Sanger advise that children in the higher end of primary school would be more likely to be at a developmental level that would be receptive to a program dedicated to critical thinking.

A widely known instructional approach for enhancing critical thinking is Taylor's Multiple Talent Model (1963) that is adaptable for different levels of schooling. Teachers are advised to use the model as a planning framework when designing units of work (Pohl 2000a). The model describes the essential elements of thinking that are decision making, planning, forecasting, communicating, creativity and specific talents. Specific talents begin with academic talent and then other talent areas (musical, dramatic, artistic) are incorporated (Pohl 2000a). The inclusion of creativity and talents within the elements suggests that, while the model is identified as having a critical thinking focus, a degree of balance between critical and creative thinking is provided.

Macro Skills Approach: Combining Critical and Creative Thinking

Teachers are also advised by some educational theorists to take what Fogarthy (1995) calls ‘a macro-skills’ rather than a ‘micro-skills’ approach to teaching critical and creative thinking within instruction. Teachers applying a micro skills approach target specific thinking skills within instruction. Fogarthy (1995) surmises that in the 1990s new cognitive models of classroom instruction began to suggest stringing several thinking skills together as a kind of macro process approach to developing complex thinking. In these models, critical and creative thinking skills, when combined together in a single cognitive task, were thought to lead to the development of macro-processes such as problem solving, decision making and creative ideation (Fogarthy 1995). Tishman and Perkins (1993) and Costa and Kallick (2000) are amongst the advocates of the macro skills approach claiming it is a more effective way to create a total learning environment within the classroom oriented towards fostering creative and critical thinking dispositions (Tishman and Perkins 1993; Fogarthy 1995; Costa and Kallick 2000). Dispositions are an individual inclination or tendency to thinking in a particular way and so dispositions are also described as ‘habits of mind’ (Costa and Kallick 2000; Tishman and Perkins 1993).

Inquiry Training

Inquiry training goes by many names and has various adaptations including: the scientific method, inductive reasoning, metacognitive instruction, discovery learning, socratic dialogue and the community of inquiry approach (Delacruz 1997). These models are macro approaches to teaching higher order thinking that can be infused into

different curriculum areas and used at all grade levels. Delacruz (1997: 33) says, ‘What unites these approaches is an interest in teaching thinking skills through direct encounters with materials and/or problems’.

Bruer (cited in Delacruz 1997: 33) has written extensively about inquiry training and the way activities are centred around ill-defined problems. Delacruz quotes Bruer who states, ‘an ill-defined problem is one for which there is no ready made, best explanation or representation and no standard method of solution’. The purpose of this is to encourage students to learn how to find and apply information on their own and to make use of problem-solving methods.

The distinct emphasis of Community of Inquiry, Socratic Dialogue, as well as Cooperative Learning Models, warrants further attention because they have recently been proposed for visual arts education. Visual arts education researchers Hagaman (1990), Wilks (2004) and Stout (1992) describe the effectiveness of incorporating Community of Inquiry discussion methods into visual arts instruction at different levels of education. Corcoran (2006) has researched the effectiveness of using cooperative learning strategies to enhance creativity in the secondary school art classroom. Further discussion of their research is included in Chapter 3 and so it is worthwhile introducing these strategies briefly prior to reviewing their research.

The Community of Inquiry and Socratic Dialogue

One of the inquiry based approaches for teaching higher order thinking dispositions that emphasises critical thinking, is the ‘Community of Inquiry’ approach developed from

Lipman's original Philosophy for Children model (Lipman, Sharp and Oscanyan 1980). Apart from critical thinking the use of dialogue is also thought to promote imaginative thinking and creative concept exploration (Davey 2004) although it is also noted that this approach does not specifically appear within many lists and groupings of educational approaches for teaching creative thinking (Fogarthy 1995; Sternberg and Williams 1996; Pohl 2000a; Pohl 2000b; Starko 2005).

Lipman, Sharp and Oscanyan (1980) advocate the need for an introduction of methods of philosophical inquiry within the whole school curriculum in order to develop a culture that fosters critical thinking. They advise educators to apply critical reflection to assist in developing students' thinking skills. Wilks (2004: 14) describes how within the Community of Inquiry model, the use of language is central and critical discussions are emphasised. Part of the practice in classes is to gather students together in a circle to discuss and debate philosophical issues as relevant to discipline content (Wilks 1995). This is thought to promote a range of critical thinking dispositions such as independence of thought and the ability to determine the truth or accuracy of statements (Stout 1992). A co-operative social structure is established within the community of inquiry model whereby the teacher's role changes from being the source of information to that of a facilitator and co-inquirer engaging with their students in the process of inquiry (Wilks 1995).

Lipman was not the only one to develop an inquiry-based learning approach to teaching critical thinking skills. Leonard Nelson (cited in Davey 2004) developed a similar method referred to as Modern Socratic Dialogue or Socratic Dialogue. Davey argues

that the main difference between the two approaches is the different emphasis each places on consensus and reaching full agreement. Socratic dialogue she says is aimed at achieving consensus through close examination of arguments while community of inquiry is not always aimed at consensus. A conflict of opinion is valued in the Community of Inquiry approach because it drives discussion and promotes skills through debate (Davey 2004).

Cooperative Learning Strategies

Cooperative learning is developed from the principles established in Lev Vygotsky's social interaction theory (Corcoran 2006). It is a strategy for fostering group inquiry and places emphasis on putting students together to work on particular academic and social tasks. Research suggests that collaborative inquiry spawns cognitive conflicts and these interactions promote critical and creative thinking. Peer communication is thought to foster participation, argument, verification, criticism and problem solving (Delacruz 1998). Corcoran (2006) says cooperative learning can only be successful if the teacher is willing to invest time and effort in the implementation of strategies involved in working together.

Valuing Critical and Creative Thinking in Visual Arts: Understanding Concepts and Processes

It has been shown that critical and creative thinking are mental processes that involve combinations of knowledge, values, attitudes and cognitive abilities and skills. While there are distinct characteristics and purposes to critical and creative thinking it is claimed that they are interrelated and complementary aspects of thinking. In order to

achieve more success in attaining critical and creative thinking outcomes, schools and teachers are advised to think about making the application of critical thinking explicit within content areas. They are also advised to be mindful of planning and structuring complex learning tasks that promote independence of thought, self regulation, the application of multiple criteria and diverse solutions (Resnick and Klopfer 1987). While some theorists believe aspects of creativity are not teachable, Amabile's (1983; 1988; 1996) research in particular suggests schools can contribute to fostering creativity and building relevant cognitive traits and abilities if the teacher and school system is mindful of the conditions that support creative performance and results.

While the underlying values and attitudes that underpin critical and creative thought may remain constant across school subjects, the knowledge and skill base required for critical and creative thinking varies from subject to subject. Critical and creative thinking processes are somewhat dependent upon specific subject matter for their form (Amabile 1996; Czikszenmihalyi 1996; Starko 2005). It is important, therefore, to recognise that critical and creative thinking processes do not develop in a knowledge vacuum and they take different forms within different knowledge disciplines. Attention must be devoted to what is considered critical and creative within a learning domain as the facts, concepts, processes, products, principles and theories that guide learning vary between various disciplines. Premised on this notion it is argued in the next chapter that the visual arts have the potential to foster creative and critical thinking in ways that other subject areas may not be able to achieve. It is also argued that pursuing an infused program in which thinking skills are taught, practised and assessed within visual arts

curriculum is worthwhile because it improves students' capacity for critical and creative thinking, their understanding of subject content and skills, as well as the quality of the learning experience.

It has been proposed that the use of a macro-skills approach to teaching, whereby subject content and skills provide the vehicle for fostering critical and creative thought, is valuable. Persuasive theoretical arguments (see for example, Swartz and Perkins 1989; Marzano 1991; Presseisen 1996; Costa and Kallick 2000) were presented in regard to conceptualising critical and creative thinking as sets of skills that can be taught in conjunction with subject matter. Many infusion approaches today emphasise the value of creating a whole classroom environment conducive to critical and creative engagement and for planning educational tasks that involve in-depth inquiry, problem finding and problem solving. It is suggested that inquiry based strategies such as Philosophy of Inquiry, Socratic Dialogue and Cooperative Learning offer alternative ways of structuring, planning and teaching for higher order thinking within discipline areas. These models/strategies received particular attention in this chapter because they have been proposed by visual arts education researchers as practices that can easily and effectively be adapted to fit within visual arts curriculum. Research related to their use in visual arts education is therefore presented in Chapter 3.

The next chapter reviews the primary sources that broadly inform the educational perspective adopted for the research. The discussion illustrates how beliefs and practices within visual arts curriculum are derived from diverse sources including educational philosophy and psychology, curriculum theory, and both modernist and

postmodernist conceptions of the visual arts. An examination of these sources reveals important ideas and assumptions about the nature of the visual arts, their role in developing critical and creative dispositions amongst students, and how critical and creative performance is conceptualised within different discipline-based art activities. Following on from this, Chapter 4, builds on these ideas but provides a more situated analysis of visual arts curriculum documents and policies in New South Wales. The analysis is critical to understanding current curriculum practice and theory and the opportunities the teachers involved in the study may have had for promoting critical and creative engagement with the discipline area.

Chapter 3

Visual Arts Education and the Development of Critical and Creative Thinking

The last chapter examined theoretical perspectives of critical and creative thinking and the pedagogical approaches that may be used to foster them. This chapter further explores critical and creative thinking as they are conceptualised and organised within visual arts curriculum and pedagogy. The chapter begins by describing how the changing image of art education over the last few decades has altered the way in which creativity and critical inquiry is fostered through curriculum activities. By the late 20th century art students were expected to experience art within the context of maker, historian, aesthete and critic and it is argued that these curriculum reforms afforded art educators more fertile ground for fostering both critical and creative thinking. The second part of the chapter theorises the capacity of these different discipline domains to train students to be critical and creative thinkers. The third section of the chapter looks at the research focus and programs of a group of developmental psychologists involved with a research centre at Harvard University called Project Zero. Arts-based research that explores the psychology of art practice and appreciation has continued to be generated through Project Zero since it was first established in 1967. The work of these researchers has contributed to the creation of education programs that use the arts as a vehicle for training higher order thinking in schools. Independent research into primary or secondary students' critical or creative thinking development through the subject area to date has not been extensive but a small number of studies are reviewed in the final part of the chapter. These studies specifically investigate aspects of art curriculum and the role of pedagogical strategies in fostering students' critical and creative engagement.

An Image of Visual Arts Education

The following section of the chapter describes key paradigm shifts that have created new curriculum imperatives for art education. With each of the three historical shifts identified here – Art as Self Expression (1960-80), Aesthetic Education Movement (1980-90) and Postmodernism and Cultural Pluralism: (2000-present) – there has been a re-conceptualisation of the role of art education in training creativity as well as facilitating critical inquiry.

Art as Self Expression 1960s-1980s

Abbs (1991) reflects on the fact that in the 1960s and 1970s 'self expression' was the key term in nearly all arts education in the Western world. This emphasis allowed the arts to be viewed primarily as a vehicle for emotional release and psychological therapy. Such was the emphasis on self-expression during this period, there was even a tendency for some to believe that formal education in the arts was actually damaging to an individual's artistic growth (Gardner 1996). Victor Lowenfeld was influential in leading an expressionist movement in art education. Within this movement children's art came to be appreciated as an expression of inner feelings rather than an imitation of realist adult art (Koster 2001). Lowenfeld advocated non-interference in children's art on the part of teachers and parents on the basis that the child would naturally progress through a series of developmental stages in the creation of art (Gardner 1996). Throughout the expressionist movement in art education, creativity was promoted through discouraging copying from models, avoiding too much direction in improving technical mastery and emphasising originality in art production (Koster 2001: 19).

Aesthetic Education Movement 1980s-1990s

In the 1980s intellectual debate within the professional field of arts education began to centre on the need to recognise a kind of cognition distinctly associated with arts experience and practice. The idea that arts disciplines; namely drama, dance, music and the visual arts, demand a special mode of cognition often referred to either as ‘aesthetic knowing’ or ‘aesthetic intelligence’ formed the nucleus of a new movement in art education (Reimer and Smith 1992; Gardner 1996). Aesthetics became far more than the study of a branch of philosophy, it provided an underlying philosophy for an education in the arts. Advocates for the adoption of an aesthetic education in England, pointed to the need to recognise the centrality of aesthetic modality for the arts (Pateman 1991; Taylor 1986; Abbs 1987, 1991, 1993). As an aspect of art education, aesthetics has been presented as the part of art criticism that deals with evaluation (Bates 2000). Aestheticians inquire about the nature of art by asking questions such as: What makes an artwork different from objects we do not consider art? Why does an artwork have personal, cultural or monetary value? What makes something art? (Bates 2000). The concept of an aesthetic education contributing to the social and intellectual development of the child became extremely influential in both England and America from the 1980s onwards (Ross 1989; Reimer and Smith 1992).

An aesthetic approach to visual arts learning allowed students to engage in interpretive discourse within the broader arts field (Pateman 1991). This had not previously been a regular curriculum practice in England, Australia or the USA (Collins 2001; Cunliffe

1998; Pateman 1991). Aesthetic education assigned value to the study of different discipline strands within the arts.

Taylor (cited in Wilks 2000: 38) claimed that the findings of a UK study – The Critical Studies in Art Education Project 1981-1984 – showed there had been pre-occupation with practical work in English secondary schools. This bias had meant that contemplative aspects of art education had virtually disappeared. Taylor (1988) reasoned that without any reflective and contemplative aspects, the subject was unable to help students become more critically aware and to be able to articulate ideas relevant to art. In England, aesthetic education advocates were proposing curriculum reforms that would ensure students were given the opportunity to broaden their perspective through analysis of works of art produced in a variety of eras (Ross 1989; Taylor 1988). Taylor believed the role of language and critical inquiry in aesthetic education was particularly important and that a skilful art teacher was one who could help students to ‘read’ works of art for themselves and to articulate their own understandings (Wilks 2000:39).

White (2004) states that the incorporation of language was also a critical component of an American model for aesthetic art education. This, he believes, was one of the lasting achievements of the U.S. Discipline Based Art Education (DBAE) model. He (2004: 70) comments,

Although there had been a tradition in art education for appreciating and discussing artworks, art educators became interested in the ways language facilitates the development of conceptual structures for understanding art.

In the DBAE model aesthetics was one of four DBAE disciplines and this came to be closely linked to art criticism, another DBAE discipline, because in-depth examinations of works of art could be undertaken in both disciplines (Wilks 2000).

Within aesthetic education the creation of artworks no longer came to be considered the only purpose of studying, and creativity was no longer bound to principles of self-expression (Eisner 1987). The ascendancy of a discipline-based model led to contestation within the field about the concept of creativity as it applied to the art curriculum. This change signalled a move away from the modernist tradition that emphasised originality and innovation (Weate 1993). The movement away from modernism meant a space opened up to re-theorise and re-invent creativity within art education (Weate 1993: 35). Creativity came to be associated with the tutored mind, immersed in content specific to the domain, building domain-specific knowledge and skills through research, capable of taking new directions in one's thinking, solving problems and producing clever or novel responses to tasks (Perkins 1985, 1988; Amabile 1988, 1996; Torrance 1988; Gardner 1990; Efland 2002).

Postmodernism and Cultural Pluralism: 1990s-2000s

The introduction of postmodernist principles in art education in recent years has promoted a socio-cultural cognitive view of art learning and teaching (Delacruz 1997; Walling 2000). Postmodernist pedagogies do not appear to have replaced DBAE models of teaching but rather appear to be accommodated within it (Sullivan 1996: 12). This approach to art education emphasises the role of art in capturing diversity and difference in society and culture. Clark (1996: 9) states that,

Postmodernism thrives on...differences, which are as evident in artifacts as they are among individuals...Ambiguities and surprises are sought, together with multiple references.

The world-view represented in this still evolving postmodernist paradigm is focused on forms of critical thinking (Clark 1996: 24). Art curricula premised upon this view add a critical dimension because they emphasise the relationships between the visual world and the social world, relationships that often reveal injustices and social issues such as feminism (Clark 1996: 24). Clark (1996: 2) states that,

Artistic meaning is seen as a socially constructed entity, requiring the viewer to look beyond the formalist compositional qualities of work, decode its symbolic imagery, and expose its embedded cultural assumptions.

A postmodernist art education emphasises meaning rather than form and requires teachers to decode sign systems (semiotics) and deconstruct visual images (Clark 1996: 83; Freedman 2001: 41).

Cultural pluralism has been an aspect of postmodernist perspectives within art education (Walling 2000: 34). Pluralism can be defined as the presence of multiple styles of art, in many cases derived from multiple cultures and sub-cultures (Walling 2000: 34). In the past a cultural observer might easily identify a broadly cohesive art style at any given time. In the world of postmodern art this becomes more difficult because influences from outside the culture affect art styles and there is no predominance of any one style (Walling 2000: 35).

The rise in postmodernist pedagogies in art has redefined the concept of creativity. Less value is placed on inspiration, originality and purity of form. This is replaced by appropriation of imagery and ideas, collage and juxtapositions of historically and culturally diverse art objects and images (Clark 1996: 2). Mass culture has allowed new forms of art to infiltrate the elitism of art. Modernist notions of self-expression and ownership are undermined through manipulating ‘masterpieces’ on computers (Wilks (2000: 26). The effect of postmodern perspectives upon artmaking practices in art education is palpable with many art educators encouraging students to borrow ideas from other artists and appropriate images, ideas and compositions from diverse cultural sources (Bates 2000). The more erratic construction of individual meaning rather than the construction of canonical knowledge is prized (Walling 2000). In contrast to originality of style or form, creativity is more closely associated with the process of production, the synthesis and transformation of existing ideas and imagery with one’s own.

The discussion here has described the changing image of visual arts education and the intellectual movements that established the arts as cognitive domains of learning in the last few decades. Attention has focused on how arts experiences can be used to shape and guide thinking. The DBAE model that emerged in the US in the 1980s and later in Australia in the 1990s is one of the legacies of the aesthetic education movement. The shift from modernist to postmodernist views of education and the influence of postmodernism in the art world has also had a significant effect on the way that critical and creative thinking are conceptualised within art pedagogies.

Thinking Orientation of Discipline Based Art Activities

Art education, like art itself is multidimensional and this makes it difficult to relate concepts as abstract and complex as creativity and critical thinking to the field unless one narrows the parameters to specific aspects of learning within the subject area. The following part of the chapter looks at the nature of practical and theoretical disciplines within the art domain. Learning in the visual arts is currently structured around these disciplines within both national (Curriculum Corporation 1994) and State (Board of Studies New South Wales 1997, 1999, 2000) visual arts curricula. The cognitive aspects of activities associated with artmaking, art history, art criticism and aesthetics have been debated and researched by scholars both in and outside the field of art education. Some of the key issues that are raised within the literature are discussed here in order to gain further understanding of the role these domains play in promoting critical or creative inquiry.

Artmaking and Creativity

Artmaking requires the production of artworks and involves the artist in conceiving ideas, developing and exploring ideas and presenting ideas in a visual form (Board of Studies New South Wales 2000). Engaging in artmaking or art production has long been considered an effective way of developing creative behaviour amongst students and this has often emerged as a rationale for the inclusion of art education in school curricula (Bates 2000). Artmaking has the potential to foster creative thinking skills when artmaking tasks involve problem finding and problem solving, both key aspects of the creative process (Csikszentmihalyi 1996; Sternberg 1999; Starko 2005). Art educators

typically conceive of artmaking tasks as problem solving tasks (Eisner 2002). The use of the word ‘problems’ is in fact widely used in visual arts education discourse as well as current curriculum documents (Board of Studies New South Wales 1997, 1999, 2000). The Queensland Senior Secondary Visual Art Syllabus (2000: 3) for instance describes how within the conceptual stage of the making process, ‘... developing requires students to generate solutions to art problems.’ In art the problem is perceived as a visual problem and not related to a mathematical equation or a scientific formula that requires one correct answer. Motivation for artmaking exercises comes from finding or having a problem to solve, however, these problems may vary in their potential for creative processing (Koster 2001).

The common use of abstraction, visual metaphor and analogy in artmaking is also thought to foster creative thinking (Efland 2002). The conscious use of these expressive symbolic devices engages the artist in innovative or imaginative thinking (Roukes 1988; Efland 2002, 2004; Eisner 2002). Efland (2004:769) argues that constructions of imagination can and should become the principle object of study,

... where it is necessary to understand that the visual image or verbal expression are not literal facts but embodiments of meanings to be taken in some other light.

Roukes (1988) advocated for the use of synectics as an instructional strategy in art education as a way to train the imagination. Synectics utilised analogies, puns, metaphors, myths, paradoxes and anomalies in order to transform the commonplace and locate familiar objects in new situations (Roukes 1988; Delacruz 1997). Artists often consciously use these devices to produce non-literal and unexpected visual forms in

their art because they are aware that interpreting these images requires further intellectual effort (Solso 1996). Radical transformations and de-contextualisation of images/symbols can create a sense of tension or conflict in terms of the perceiver's interpretation of the image schemata being represented. When the eye sees something incompatible with one's hypothesis of the world this can create psychological dissonance (Solso 1996).

Art practice is also believed to afford opportunities for self-expression. Art practice is expressive in nature because emotion, feeling, thought and knowledge are inexplicably entwined (Cropley 1992; Eisner 2002). This serves to connect individuals with the world in a myriad of ways because it places the expression of the 'self' and the formation of an artist's personal and social identity within the realities of society and culture (Cropley 1992; Efland 2002; Eisner 2002). Self-expression in artmaking however does not necessarily produce creative results although assessment or judgements of students' creativity in schools often centres on the level of creative expressiveness shown in students' works of art (Eisner 2002). In a discipline based approach to art education untutored childhood expressions are not regarded as necessarily creative (Clark, Day and Greer 1987). In Taylor's (1959) levels of creativity model 'expressive creativity', as in the spontaneous drawings of children, is described as the lowest level of creativity (Torrance 1988). There are clearly levels of creative expressiveness in students' artistic products (Eisner 2002).

The evaluation of creativity as represented in products of artmaking in schools is a difficult undertaking particularly when these typically are what Rush calls 'tutored

images' – arising from teacher-generated problems (Boughton, Eisner and Ligtoet 1996: 19-20). Innovation and originality are not often characteristic of these images. Rush (Boughton, Eisner and Ligtoet 1996: 43) advises that images made in order to solve problems (teacher generated) can be evaluated because they contain observable concepts that testify to the acquisition of these concepts by students. A conceptually focused approach she argues enlarges students' expressive options. Following this line of reasoning a student's expression of ideas in visual form can be considered creative if it represents a synthesis between existing ideas and their own thoughts. This notion is very different from the more child centred modernist notion that child art is creative because it is free from conventional imagery and children's efforts in self-expression can produce significant creative insights (Wilson 2004: 310-311). Teachers can be concerned that there is not enough objectivity when assessing students' creative responses and so tend to avoid it (Sternberg and Williams 1996). Although it is true that there is some sacrifice of objectivity, research shows that evaluators are remarkably consistent in their assessments of creativity (Amabile 1983; Sternberg and Lubart 1999). The problem with avoiding assessment of student creativity is that it goes unrewarded and this acts as a disincentive for the student (Sternberg and Williams 1996).

Artmaking and Critical Thinking

Many art educators have stressed the making of art as a form of critical engagement (White 2004: 70). Within the professional literature in the field of visual arts education there appears to be an interest in the way that critical thinking may be brought into play in the process of creative production. The artmaking process is often portrayed as a

problem ‘posing’ and problem ‘solving’ process and this is where overlaps occur between definitions of critical and creative thinking – both are conceptualised as having a problem solving focus (Paul 1992). Zurmuehlen (cited in Delacruz 1997: 34), describes classrooms where students are engaged in art practice tasks as places, ‘...where students can be originators: intending, acting, realizing, re-intending, combining critical reflection and action’ and where, ‘there is conversion from unreflective thought to reflective thought’. Zurmuehlen’s description represents an acknowledgement of the engagement of critical thinking in the process of artmaking. The production of artworks in the classroom has great potential to establish a climate favourable to both critical and creative thinking because innovative and free ranging thinking is encouraged through the production, reinforcement and evaluation of one’s ideas (Cropley 1992: 114). The self-reflective element of the artmaking process is the aspect that most authors see as engaging critical thinking (Perkins 1994; Zurmuehlen 1990; Davis and Gardner 1996). Fineberg (1992) believes critical thinking skills are more likely to be applied by students to visual arts practice when teachers show them how they could elaborate and refine their original designs and to encourage them to ‘rethink’ their conceptions or ideas.

Aesthetics and Art Criticism Tasks and Critical Thinking

The teaching of aesthetics and art criticism is likened to critical inquiry because it involves the intricately connected processes of description, interpretation and evaluation. Anderson (1998: 49) suggests that aesthetics in an educational context is similar to critical inquiry ‘in which students actively participate in the process of asking questions and developing answers using the strategies of professional aestheticians’.

Stout (cited in Delacruz 1997: 35) concludes that in a situation where art teachers engage students in art criticism ‘students become adept in conceptualising, analysing, synthesising and evaluating ideas, and make meaningful applications of knowledge’.

Critical evaluations of artworks, whether the student’s own or that of a professional artist, requires the use of various strategic and complex mental processes (Efland 2002; Wilks 2000, 2004). The interpreter has to be able to determine how the work of art is organised, how it centres on the principles and elements. She/he must identify the feelings, moods and ideas communicated in the work, and consider the artist’s overall purpose or intention (Board of Studies New South Wales 1997). When making critical judgements about an artwork’s value (evaluating), the student critic has to be able to consider the artistic merit of the work. This requires logical reasoning (Perkins 1994). Risatti’s (cited in Delacruz 1997: 35) advice is that interpretation and evaluation of a work of art should not entirely rest on the identification of art and design elements – understood as the ‘formal’ properties of art – because this can lead to a more superficial reading of art images. Attending to the work’s social and cultural nuances or visual narratives offers more potential to foster criticality (Delacruz 1997: 35).

David Perkins (1994) describes how works of art can become valuable aides to learning and he attributes the development of critical thinking ‘dispositions’¹ to programs that encourage critical inquiry into works of art. In *The Intelligent Eye, Learning to Think by Looking at Art*, Perkins (1994) challenges the stereotypical notion of the passive art

¹ Perkins explains that thinking dispositions are more than skills or strategies. They are an individual’s felt tendency, commitment and enthusiasm to ways of thinking.

viewer. This notion, he says, is an insult to the intelligent eye because looking at art demands two kinds or forms of intelligence, experiential and reflective. Experiential intelligence is what we gain from a rich range of knowledge and a multitude of encounters with different aspects of life. Reflective intelligence, on the other hand, takes time and requires one to look more clearly and deeply as well as broadly and adventurously. Perkins (1994: 83-86) points to at least four benefits that arise from using a work of art to promote critical discussion and investigation in the classroom. Firstly, artworks provide a sensory anchor for attention over a long period of exploration, such that the viewer can check something at a glance (Perkins 1994). Secondly, works of art invite sustained involvement because they invite personal engagement although there is a possibility of a neutral response (Perkins 1994). Thirdly, the process of interpreting artworks also puts to work pictorial and spatial perception and verbal analytical kinds of thinking. Fourthly, artworks are multi-connected as they can contain links to many things – social, gender and political issues, aesthetic concerns, or even scientific and mathematical concepts (Perkins 1994).

Efland (2002) argues that the ill-structuredness (as opposed to well-structuredness) of the visual arts, places more cognitive demands on individuals who are looking at and responding to art because they must assemble their own schemata rather than rely on the ability to retrieve broad generalisations, principles and commonalities. Schemata represent the structure of an object, scene or idea and this requires the activation of information stored in long-term memory (Johnson 1987; Solso 1996). In his book *Cognition and the Visual Arts*, Solso (1996) writes about how humans perceive, process and store visual information and apply it when viewing and interpreting art. Visual

perception occurs within the context of an observer's rich personal knowledge as he or she views a work of art and responds to the physical composition of the visual field. Different types of art schemata, such as, pop art schemata or impressionism schemata are influenced by one's knowledge of art. According to Solso (1996), this type of visual perception and interpretation represents a form of higher-order cognition.

Aesthetics and Art Criticism Tasks and Creative Thinking

Engaging with artworks offers both symbolic and practical occasions to deal with change, ambiguity and even chaos (Eisner 1987). When artworks are metaphorical, multi-layered and ambiguous, messages or ideas are not literally communicated. This makes interpretation of meaning difficult because art concepts may be contested and there is a real likelihood that more than one solution or answer to questions of meaning can be found (Eisner 2002; Efland 2002; Tishman 2006). This elusiveness and ambiguity encourages the application of creative thinking (Sternberg and Williams 1996). Creative thinking is employed when students have to sort through many categories of knowledge to find solutions to the puzzle presented to them. They are required to synthesise their prior knowledge with the ideas expressed in artworks in order to find a creative solution (Sternberg and Williams 1996). The process of knowledge synthesis is, according to Anderson and Krathwohl's (2001) cognitive taxonomy, creative in orientation. However, the extent to which there is creative processing occurring when students study artworks is dependent on the circumstances that surround this task. Students can be pushed to unpack the depth and complexity of works by inviting them to ask creative questions, make diverse observations and explore multiple viewpoints (Tishman 2006). Creative thinking can be encouraged

through brainstorming the topic as a class group and asking students to frame their own ‘what if’ questions. Questions, such as, ‘what if we knew..?’ and ‘what would change if..?’ stimulate curiosity and lay the groundwork for independent inquiry (Tishman 2006; Pohl 2000a, 2000b).

Art History and Critical Thinking

Studying art history has the potential to foster critical inquiry. Art historians practice critical inquiry when they analyse, interpret and convey information about art (Delacruz 1997; Erickson 2004). Erickson defines art historical inquiry as establishing facts, interpreting meaning and accounting for change (Erickson 2004). Delacruz (1997: 37) states that,

Historical inquiry requires skills of detailed observation and description, making comparisons, drawing inferences from available evidence, interpreting symbols, looking for additional information to confirm hypotheses, proposing explanations, supporting conclusions, and asking questions.

In interpreting meaning in historical artworks and artefacts the student critic needs to be able to use evidence to support assertions of meaning, and engage in discourse with others to debate the validity of their conclusions (Tishman 2006). These actions are reflective of the professional practices used by professional art historians. Howard Risatti (cited in Delacruz 1997: 35) observes that critical evaluations of historical artworks are statements about qualities and ideas that are drawn from a larger social and cultural context. Risatti (ibid.) describes the process of evaluation as bringing external points of reference to bear when interpreting the historical meaning of the work. Artistic conventions, social contexts, political nuances and so on may all be referenced as part

of this evaluation. The way in which complex conceptual connections are formed between artworks and aspects of social life (whether past or present contexts) when perceiving, analysing and interpreting artworks can therefore facilitate the application of higher order thinking (Perkins 1994; Solso 1996).

The value of studying history through the lens of artworks is that it can transform students' historical inquiry into a personal and contemporary experience (Tishman 2006). Artworks do not represent a straightforward timeline of events or facts and this provides some freedom and flexibility in historical inquiry (Tishman 2006). Historical inquiry can become personal when students practice empathetic projection and adopt different points of view in order to develop insights into a particular time and place. Perspective taking, empathy and role-playing can all be effective ways to promote critical thinking (Tishman 2006).

The preceding discussion has shown that, in theory, art disciplines can effectively facilitate critical and creative thinking although each does this in different ways and to different extents. Despite this large body of theoretical evidence there are concerns that art education is not tapping into the rich potential of these disciplines to develop thinking (Wilks 2004; Efland 2002). Art education is not only about art or theories of art and it is naïve to think that the complex social interactions and purposes of education do not shape the construction of knowledge and opportunities for the development of ideas (Freedman 2001). One needs to have an appreciation for the issues concerning the practice of teaching and the way in which each teacher and class group shapes the curriculum.

The next part of the chapter looks at research into pedagogical aspects that influence the cognitive orientation of art curriculum. The education and art based research projects conducted by research teams at Project Zero have concentrated on the development, field testing and introduction of particular education programs aimed at improving the quality of thinking in the arts as well as in subjects across the curriculum. The other individual research projects selected for review have studied art education from the perspective of different student age groups, different art disciplines and a focus on either critical or creative dimensions of these disciplines. Together these provide a spectrum of information about teaching for critical or creative thinking.

Project Zero Research

The particular nature of learning in the arts has attracted the interest and scholarship of several prominent developmental psychologists attached to Harvard University's Project Zero. Nelson Goodman, David Perkins and Howard Gardner are psychologists who have initiated and conducted many Project Zero research projects. Some of their research has focused on helping students to become more critical and creative thinkers (Tarica 2005). Project Zero is not a single project as the title suggests, it actually involves a collection of projects with different funding streams and principal investigators (Tarica 2005). The project started in 1967, as a research program that aimed to understand and enhance learning, thinking and creativity. The 'Zero' in the project title according to Davis and Gardner (1992: 106), 'represented a whimsical estimate of the state of firm knowledge about art education'.

The original founder Nelson Goodman linked the development of critical thinking skills and problem solving to arts education (Fineberg 1992). In his introduction to *Art, Mind, and Education*, Goodman (1989: 1) recalls his motivation,

We viewed the arts not as mere entertainment but like the sciences, as ways of understanding and even constructing our environments, and thus looked upon arts education as a requisite and integrated component of the entire educational process.

Goodman reasoned that each art medium is a symbol system in its own right, and these essentially could be imagined as languages. Goodman (cited in Parsons 1992) contributed his theory that visual arts are not a language per se but rather symbol systems dense in their semantic features but lacking a rule governed syntax. Goodman's theory opened the way to the visual arts becoming recognised as a cognitive area and his ideas grounded Howard Gardner's and David Perkins's future work at Project Zero (Parsons 1992).

Howard Gardner became involved in *Project Zero* research in the early 1970s (Gardner 1996). Gardner's initial emphasis was on developmental issues involved in the acquisition of symbolic competence (Efland 2002: 60). His publications *The Arts and Human Development* (1973) and *Artful Scribbles* (1980) were representative of the early work he did within Project Zero. Gardner attributes the work he did on symbol system research at Project Zero as contributing to the development of his Multiple Intelligences (MI) theory (Gardner and Davis 1992). In MI theory Gardner (1983)

posited seven different intelligences as distinctive ‘frames of mind’. Davis and Gardner (1992: 102-103) describe these frames of mind as.

...potential cognitive resources for negotiating one’s way (finding, creating and solving problems) in different symbolic domains (problem-spaces).

MI theory promoted the idea that intelligence is a multidimensional phenomena and that each person has unique strengths and preferences in regard to the way they come to know things. Visual-spatial intelligence, one of the seven intelligences, logically appears closely linked to the visual arts. However, Gardner believes that all the intelligences he identified can be used for either artistic or non-artistic purposes (1993).

Perkins became affiliated with Project Zero after 1967 and he has had a long involvement in the research program over the last three decades. Perkins developed several strategies for creating a culture of thinking in the classroom that are applied in schools throughout the world (Tarica 2005). He has been involved in research that examines how art can be used to assist in the development of thinking. In his book *The Intelligent Eye: Learning To Think by Looking at Art* (1994) Perkins explains why looking at art requires deep and reflective thinking and proposes that there is a persuasive argument to be made for the value of looking at art as a means to cultivate what he refers to as ‘thinking dispositions’. Some of the theories he espouses as to why looking at and interpreting works of art are valuable activities that help cultivate critical thinking dispositions, have been discussed in an earlier section of this chapter titled, ‘Aesthetics, Art Criticism Tasks and Critical Thinking’.

Arts Propel Program

The Arts PROPEL program was developed and field-tested during a five-year period from 1986 to 1991 by researchers at Harvard Project Zero and funded by the Arts and Humanities Division of the Rockefeller Foundation (Winner and Simmons 1992: 5). The program is grounded in the belief that artistic learning can be assessed in ways that support creativity and at the same time provide information useful to both teacher and student (Winner and Simmons 1992: 8). The model concentrated on training perception (noticing connections and making discriminations within and among works of art), art production (rehearsing performing, improvising, composing, and designing), and reflection (thinking about the process of making or responding to works of art). Through the synthesis of these activities students are taught to be reflective creators of art as well as a critical perceivers of art (Winner and Simmons 1992: 8). The emphasis of Arts PROPEL however, is on encouraging the development of imaginative and creative thinking through art production and thus artmaking is promoted as a central feature of art education programs (Davis and Gardner 1992; Clark 1996; Bates 2000).

Artful Thinking Program

The Artful Thinking model was first developed in 2003 by Project Zero researchers and a quasi-experimental study reported on the results of its implementation in schools between 2004 and 2006 (Tishman 2006). The model offers an approach for integrating art into regular primary and middle school classroom instruction. It encourages generalist classroom teachers to use works of visual art and music in their curriculum in ways that strengthen student thinking and learning. The program focuses on

experiencing and appreciating art, rather than making art. There are two broad goals of the program: (1) To help teachers create rich connections between works of art and curricular topics; and (2) to help teachers use art as a force for developing students' thinking dispositions. The artful thinking model emphasises the application of intellectual behaviours such as asking provocative questions, making careful observations, exploring multiple viewpoints, and reasoning with evidence. Thinking dispositions are developed through the use of thinking routines and these are described as short, easy-to-learn mini-strategies that extend and deepen students' thinking and become part of the fabric of everyday classroom life (Tishman 2006).

Project Zero research and education initiatives, specifically the Arts Propel and Artful Thinking programs, have highlighted ways that art can be used to encourage higher order thinking. Processes associated with making art and contemplating works of art are believed to foster students thinking in unique ways. The next part of the chapter explores some of the insights offered by art education researchers who have considered the interaction that occurs between subject and learner in the development of higher order thinking.

Research into Visual Arts Pedagogies

The researchers Wilks (2000) and Corcoran (2006) have conducted research in Australian secondary schools that provides insights into the curriculum choices that facilitate either critical or creative thinking. Other US art education researchers include McSorley (1996) who studied the development of critical thinking through art criticism

exercises with young children and Burton, Horowitz and Abeles (1999) study that involved elementary and middle school children. In England Tickle (1984) examined creative elements in Years 9 and 10 art and design classes. A review of the methodologies and the findings represented in these research studies is presented below. The studies are organised according to their age group focus and the specific art curriculum discipline addressed.

Primary/Elementary School Art Education

Creative Arts Curriculum

A series of North American research studies collectively referred to as *The Champions of Change Report* (Fiske 1999) were influential in changing perceptions about the value of arts learning in schools. Amongst the various research studies presented in this report was a study conducted by Burton, Horowitz and Abeles (1999) that involved over 2000 primary and middle school students and their teachers that was titled *Learning in and Through the Arts: Curriculum Implications*. The goal of the research project was to determine what cognitive, social and personal skills are developed through arts learning and if these competencies had a more general effect upon learning across the curriculum (Burton, Horowitz and Abeles 1999: 36). The research was conducted on a large scale, involved the use of both qualitative and experimental measures, and encompassed a range of creative arts disciplines. The researchers recognised from the beginning that the practice of arts teaching in schools is extremely diverse and so they rejected the idea of a narrowly focused study of one program or art form or behavioural outcome in favour of a broad based arts focus with multiple research sites (Burton, Horowitz and Abeles 1999: 36-37). The researchers combined several standardised measures, with

paper and pencil inventories, designed to elicit the responses and opinions of pupils and teachers. The *Torrance Tests of Creative Thinking – Think Creatively With Pictures*² that measures creative thinking abilities, was administered to all pupils. The researchers also employed the *Self Description Questionnaire*³ as a way of measuring self-concept and the *School Level Environment Questionnaire* as a tool for evaluating aspects of school climate such as the way that pupils and teachers interact. Furthermore, the researchers developed their own *Teacher Perception Scale* to measure teachers' judgements about qualities such as risk taking and creativity on the part of pupils. Data obtained through quantitative measures were used in conjunction with interviews with specialist and non-specialist teachers (both arts and non-arts) and school administrators over a two-year period.

When the researchers analysed the numerical creative thinking abilities data (Torrance Tests) and teachers' perception data (Teacher Perception Scale) they found significant associations. There was a correlation between high arts exposure in schools and high creative thinking ability scores. Students in arts-rich schools (multiple forms of arts regularly integrated into the curriculum) scored higher on the *Torrance Tests of Creative Thinking – Think Creatively With Pictures* than did students in arts-poor schools. The teachers in the schools described in the study as 'arts-rich', perceived that pupils with high creative ability were those who showed curiosity, were able to express

² The test was created by Torrance, Ball and Safter (1992) and measures creative thinking abilities commonly presumed to be brought into play in creative achievements. Burton, Horowitz and Abeles (1999: 37) claim that despite some criticisms of the test it has remained the most commonly used yardstick for measuring the creative impact of arts learning.

³ The self description questionnaire (SDQ-1) is based on a hierarchical model of self concept developed by Shavelson (cited in Burton, Horowitz and Abeles 1999: 37) and provides data on three areas of academic self-concept: reading, writing and general-school.

their ideas and feelings in individual ways, and were not afraid to display their learning before teachers and their peers. The Torrance Test results also showed that the majority of these students scored well on measures of fluency, originality, elaboration and resistance to closure – capacities central to creative thinking. Highly creative students demonstrated an ability to imagine problems from different perspectives, taking imaginative leaps, and in problem solving tasks they layered one thought upon another as part of the problem solving process (Burton, Horowitz and Abeles 1999: 37-40). Students within the high-arts upper quartile group were also far more likely to see themselves as academically competent individuals, particularly in language and mathematics.

Burton, Horowitz and Abeles (1999) claim their study shows that cognitive learning strategies used within the arts promote critical and creative thinking. It is noted however, that critical thinking is assumed to be an aspect of creative thinking within the study as no specific separate measure was employed to test for critical thinking skills.

The authors (Burton, Horowitz and Abeles 1999: 43) concluded that,

In essence, our study reveals that learning in the arts is complex and multidimensional. We found a set of cognitive competencies – including elaborative and creative thinking, fluency, originality, focused perception, and imagination – which grouped to form constellations in particular instructional contexts. These contexts elicit the ability to take multiple perspectives, to layer relationships, and to construct and express meaning in unified forms of representation.

The researchers claimed that they were interested in knowing more about how the environmental aspects of learning (contextual and pedagogical factors) influenced higher order learning outcomes. Their findings in regard to the effects of school climate

upon the promotion of thinking were rather broad and non-specific. Burton, Horowitz and Abeles (2000: 23) found that the beneficial effects of arts learning appeared to be intensified by certain mediating variables, such as the central role of administrative support (like school principals), the integration of the arts within the general classroom, the confidence, innovation and professional interest of teachers and collaboration between arts teachers. Unfortunately, the study failed to clarify how students' applications of higher order thinking was enhanced through so-called 'innovative arts teaching'. The absence of observation data from the study may have limited its scope in regard to studying the influence of student-teacher interactions. This, combined with the lack of reporting on the data obtained through teacher interviews contributes to a lack of detailed knowledge about arts pedagogies arising from the study.

Art Criticism Activities Involving Elementary School Children

McSorley's (1996) study of thirteen primary school teachers found teachers held limited conceptions of teaching art criticism. Her study followed a phenomenographic research approach and she engaged teachers in conversations about art criticism through open-ended questioning procedures (cited in Erikson 2004). These questions focused on teachers' conceptions of teaching aesthetics and art criticism. The primary teachers who participated were not trained specialists but generalist primary teachers and they represented the whole staff of one school (cited in Erikson 2004). Her data analysis procedures were essentially content analysis and involved processing teachers' statements through various stages of selection, elimination and groupings relevant to the investigation (Wilks 2000: 87). McSorley (1996) believed her analysis method was developed out of the phenomenology tradition and differed from traditional paradigms

of content analysis because the categories were not decided in advance. The first phase of the analysis was a selection of statements related to conceptions of teaching art criticism. In the second phase, McSorley searched for relationships among the statements. She then organised the content into categories that she described as 'conceptions'.

The six major conceptions of the teaching of art criticism were: a selection of artworks for presentation; a situation for learning; the demonstration of expertise; the fostering of the learning process; momentary reflection; and joint reflection. On the surface this seems like quite an array of conceptions of art criticism, however, McSorley perceived that teacher conceptions were limited when one considered the possibility for developing critical inquiry through art criticism. Among the various limitations identified was teachers' failure to take into account the 'life worlds of the learners' as well as the fact they had no clear set format or procedure for teaching art criticism (cited in Wilks 2000: 87).

McSorley theorised that there was a probable link between teachers' lack of experience of art and the quality of teaching art criticism. Teachers' poor art knowledge may have contributed to their lack of concern for a philosophical or theoretical base from which art criticism was being taught (cited in Erikson 2004: 477). McSorley found the teachers in her study, 'indicated no conception of art criticism as helping students create and derive meaning from visual art, only a concern for fostering art appreciation' (cited in Erikson 2004: 477).

Secondary School Art Education*Aesthetics and Art Criticism Activities with Secondary School Students*

In Australia, Susan Wilks's (2000) research is amongst the few studies that specifically investigate the application of higher order thinking instruction to visual arts pedagogies. Her doctoral study, titled *Critical Inquiry in Arts Criticism and Aesthetics: Strategies for Raising Cognitive Levels of Student Inquiry*, explores the development of students' critical thinking through the aesthetics and arts criticism learning strand of the visual arts curriculum in Victorian schools. Wilks (2000) applied an intensive approach that comprised three ethnographic case studies undertaken in three selected Victorian secondary schools. Wilks observed three teachers and their students during classroom activities that involved art criticism and aesthetics (a sub-strand of the Victorian Arts CFS 1995). This curriculum document (cited in Wilks 2000: 226) states that students should:

...learn how social and cultural values are constructed, challenged and reconstructed. Students engage in arts criticism as they describe, analyse and interpret, evaluate, develop preferences and the ability to discriminate between arts works and challenge ideas. They reflect on and respond to their own art works and those of others.

During Wilks's pre-intervention phase of the study she noted that students rarely engaged in any of these requisite activities.

Wilks adopted an ethnographic approach to case studies. The major components of this were field notes, observations, interviews, records, diaries and personal documents kept for the purposes of the study (Wilks 2000: 111-12). Semi-structured questions were

prepared prior to interviews and interviews with teachers were transcribed shortly after they took place. The observation phase led to the development of categories used as the basis for further study (Wilks 2000: 114). Observations of classrooms were unstructured and non-participant in the first phase and then became structured as Wilks conducted classroom interaction analysis. Over a period of twelve months the three teachers in Wilks's study were observed, attended an intervention seminar and then were re-observed. Wilks's intervention program was developed out of a *Community of Inquiry* approach (Lipman, Sharp and Oscanyan 1980).

There were three main reasons Wilks found for the lack of sustained critical inquiry. The first was that teachers tended to organise class content around their own preconceived notion of what they felt students expected. Critical inquiry was therefore limited by a desire to provide students with what they wanted rather than by testing the limits of their understanding. Secondly, the requirement to foster analysis of how cultural values were constructed and reconstructed required knowledge that the teachers did not possess and/or skills they could not utilise. Thirdly, ensuring students engaged in challenging ideas as well as critical interpretation of artworks required approaches the teachers did not employ. Within her summary of findings, Wilks (2000: 228) illustrates what happened when teachers read her transcripts of their classroom discussions at the end of the pre-intervention phase,

... the teachers were able to diagnose the absence of higher levels of cognitive inquiry. They also noted the extent to which they dominated discussions and lamented the fact that they were content to accept lower-level thinking. The teachers recognised that this was demonstrated by poor use of vocabulary by both themselves and their

students and short verbal responses to their closed questions coupled with their own long verbal moves.

In the post intervention period Wilks (2000: 229) reported that patterns of talk had altered and students were verbally participating more in terms of the quality and quantity of their responses. Teachers were using resources modeled on the intervention program and were using discussion approaches believed to facilitate higher-level inquiry. The aggregated increase in student talk during art appreciation discussion was 21% after the intervention. Teachers when interviewed in the post intervention phase were able to describe and give reasons for these changes. A large factor in this improvement Wilks (2000: 232) ascribed to the teachers believing that levels of critical thinking in the visual arts could and should be raised after they participated in the intervention workshops.

Artmaking Involving Senior Secondary Students

Tickle (1984) as cited in Wilks (2000) examined aspects of practice in art and design classes in Years 9 and 10. As Wilks (2000: 76) states, Tickle had initiated the project because he believed that there were few teachers 'who encouraged exploration, creativity, problem solving, and active engagement in learning'. Three teachers were observed engaging in the didactic teaching of basic skills while attempting to foster creativity and problem solving (Wilks 2000: 76). Wilks writes that, in interviews, Tickle found each teacher articulated their desire for creative thinking to play a major part in their students' artistic development. However, he observed in student-teacher interactions that their intentions were frustrated by their own beliefs, approaches and interventions. What resulted during fieldwork was an unconscious separation of the

students into two groups – students who were more able in one group and those that were less able in the other. Each group followed a different curriculum and time was apportioned differently to both groups. Those who were more able received more attention and were engaged in tasks that had more creative elements than the other. Those students judged to be less able by the teacher were engaged in more controlled and structured learning tasks (Wilks 2000).

Corcoran (2006) undertook an action research project in two Queensland schools that reflected upon an intervention she implemented into her own teaching practice over two years with different Year 11 and 12 class groups. The study investigated the strategy of cooperative learning and embedded with this strategy the Parnes Creative Problem Solving (CPS) model as it applied to studio art activities in her secondary school art classroom. In Corcoran's (2006: 44) view this represents a strategy that 'allows for the identification of convergent and divergent thinking' in creative thinking. The senior secondary visual arts students were from two different schools. Triangulation of data involved gathering accounts from the points of view of the teacher researcher, students and colleagues as critical friends. Various types of data, such as, photographs, videos, student questionnaires, student visual art journals, field log teacher notes and interview transcripts were analysed.

Corcoran says her analysis and observations over her years of teaching art to senior students prior to beginning the study raised a number of questions in relation to her own pedagogy. She wondered how to expand students' cognitive abilities to problem solve and to be able to reflect meta-cognitively to use their knowledge repeatedly in any

creative problem solving situation. Furthermore, she was interested in ways to motivate students to learn. Corcoran (2006) claims her study assisted her in examining teaching practices that resulted from certain assumptions she had held about teaching for creativity. She implemented cooperative learning through all the steps of ‘fact finding’, ‘problem finding’, ‘idea finding’ and ‘solution finding’ in the CPS model as well as the use of creative brainstorming and art synectics (metaphor, analogies, puns, riddles, etc).

Corcoran’s evidence appears to support the conclusion that embedding the CPS model within cooperative learning provided a structure that enabled students to become more self regulated learners. The model also gave the researcher and her students more concrete knowledge of where the student is situated in relation to the student’s creative thinking (Corcoran 2006: 297). Furthermore, she found that analysis of data from students’ questionnaires showed that the model provided them with steps to fall back on when suffering ‘artist blocks’ or ‘mental ruts’. In general, she believes her findings demonstrate the importance of teachers’ pedagogy in the process of enhancing creativity. Her use of synectics and brainstorming techniques also met with some success. Brainstorming, Corcoran (2006: 301) believed, was considered useful by her students in developing creative ideas. Corcoran (2006: 304) also reported that students felt the use of synectics was most useful in making the required task motivational.

The value of Corcoran’s research appears to be the emphasis given to her students’ observations, opinions and attitudes in regard to the strategies she implemented. There were both positive and negative reactions amongst the students who participated and this seemed to depend on how the model suited their own personal learning styles and

habits. The cooperative structure at certain times appeared to limit some students' ability to work in a fluent way and make progress with their own ideas.

So What Do We Know?

Learning theories and research projects presented in this chapter support a perspective of visual arts education that acknowledges its cognitive aspects. It is asserted that art provides rich opportunities for facilitating critical and creative inquiry. The research suggests that, if framed appropriately, art-based learning activities can engage students in processes that involve them in problem finding and problem solving, both of which are linked to the use of critical and creative thinking. Clearly, there is a growing body of theoretical and research evidence that suggests visual arts have a place in the thinking classroom and can make a significant contribution.

Researching the literature on teaching for critical or creative thinking brought home to me the fact that while there seems to be literally hundreds of thinking skills programs, models, theories and research in the broader field of education, there has been surprisingly little research to date that has focused on the topic within art education. The lack of research is not at first apparent because there has been much theorising about the cognitive dimensions of art disciplines. One can find a strong consensus of opinion emerging that artists, including student artists, naturally engage in critical and creative thinking during art activity. The words 'critical' and 'creative' are in fact so commonplace in art education literature that they have become almost mundane terms. The research that does exist within arts education has tended to focus on the nature of the arts themselves for training cognitive competencies rather than critically evaluating

the influence of variable environmental factors such as student and teacher interactions. As far as possible those that fall into the latter category have been incorporated in this literature review. Each of these studies has followed different methodological approaches in order to investigate cognitive aspects of the art curriculum. Amongst the research referenced is an auto ethnographic study (Corcoran 2006), ethnographic case studies (Wilks 2000), case studies that employ analysis procedures grounded in the phenomenological tradition (McSorley 1996) and a large-scale study that combined various quantitative measures with qualitative methods (Burton, Horowitz and Abeles 1999).

The research studies described in this chapter have by-and-large described situations in which teachers and students were failing to attain anticipated levels of critical and creative thinking in various aspects of the curriculum. Reasons cited in these different reports include: teachers' lack of art knowledge and training; a limited teacher philosophy or conception of either critical or creative aspects of art investigations; a domination of traditional pedagogies that limit opportunities for independent student inquiry; limited time to allow for in-depth investigation of art topics; students' lack of confidence; wide variations in creative abilities between individual students; a lack of meta cognitive skills to develop strategies amongst students for improving creative performance; and inadequate teacher and student vocabulary to conduct critical analysis and aesthetic evaluations of artworks. There are of course other relevant findings worthy of mention but those listed here have typically been identified in more than one study. There were also positive signs that strategies put in place to promote critical and creative engagement through the subject area were to some extent effective. Corcoran's

(2006) self auto ethnographic study was positively affirming of the intervention measures taken by the researcher to improve levels of student creative engagement. Wilks's (2000) study was also affirming of the intervention program she instituted with three art teachers.

Today's visual arts curriculum in Australia has been formed around various ideas and concepts promulgated by learning theorists and researchers in a number of significant ways. Naturally, the art teachers and students who are the focus of research in this study are guided by these frameworks for visual arts learning through the implementation of, and engagement with, State-based visual arts curricula. Theories of creative and critical thinking as they relate to the visual arts, while not always explicitly stated in curriculum documents, are implicit in contemporary curriculum constructs. Consequently, an understanding for the New South Wales (NSW) school visual arts curriculum is essential for understanding the context within which this research project was undertaken. The next chapter explores and reviews curriculum documents and policies highlighting aspects of their design most relevant to this study.

Chapter 4

Critical and Creative Perspectives within Visual Arts Curriculum

The content and organisation of Australian arts education curriculum policies and New South Wales visual arts syllabus documents are evaluated in this chapter in order to show that there is an expectation that teachers will foster critical and creative thinking skills amongst students in art lessons. It is contended in this study that primary and secondary school art teachers should be able to do this while still meeting learning objectives and outcomes mandated in the curriculum. Teaching for critical and creative thinking development should not be considered as a ‘add on’ but rather as an essential part of curriculum practice established through the implementation of syllabus content.

The chapter begins with a discussion of curriculum reforms that took place in Australia between 1994 and 2004. The formation of a national arts education policy in 1994 is considered key to curriculum changes that occurred thereafter in each Australian state. Recommendations made in the *National Statements and Profiles for the Arts* (Curriculum Corporation 1994) were instrumental in framing the content of New South Wales (NSW) visual arts curriculum from primary through to secondary level in the decade that followed. National arts curriculum policies supported a discipline-based approach to arts education that had already been adopted in many English and North American schools throughout the late 1980s and early 1990s (Taylor 1986; Emery 1998). The focus on ‘disciplines’ within the subject area and the introduction of an outcomes-based assessment system transformed instructional theory and practice in the visual arts. The discipline-based approach was considered to be more cognitive in orientation and so these curriculum reforms are highly relevant to this study (Wilks

2000; Bamford 2002). The chapter also examines the particular content and structure of NSW visual art syllabi used by teachers in the study. These syllabus documents reveal important ideas about the visual arts and how they can be used to develop critical and creative perspectives amongst students. They also have implications for the role of the teacher in fostering critical and creative inquiry.

The Development of a National Curriculum Profile for the Arts in Australian Schools

By early 1994, *National Curriculum Statements and Profiles* had been released for the arts, which encompassed the five subjects of dance, drama, media, music and the visual arts (art, craft and design). These creative arts subjects were designated as one Key Learning Area (KLA) amongst a total of eight Key Learning Areas. This was considered by some arts educators to be beneficial to the arts, because for the first time the arts became recognised as one of eight compulsory areas in the general curriculum. The perceived benefit of formal recognition within the core curriculum was somewhat offset by concerns amongst art educators that bundling the arts together as the ‘creative arts’ would mean educational administrators could potentially treat the arts as one subject and so reduce the time apportioned to each arts discipline (Emery 1998).

In 1994, the Curriculum Corporation published *The Arts: A Curriculum Profile for Australian Schools* as part of the *National Curriculum Statements and Profiles*. The document resulted from a joint project between States, Territories and the Commonwealth, initiated by the Australian Education Council. The collaboration produced sixteen documents – a statement and a profile in each of the identified eight

areas of learning; namely, English, mathematics, science, technology, languages other than English, health and physical education, studies of society and environment and the arts (Curriculum Corporation 1994). In developing these documents the respective ministers of education from the states and territories authorised a set of common educational goals for the Commonwealth of Australia. The agreed educational goals included learning outcomes that students were expected to achieve at different stages of their education. The outcomes-based model that was adopted specified the ways in which teachers should assess levels of development, progress and learning experiences throughout primary and secondary school systems (McPherson 1995).

The national curriculum profile for the arts recommended that they be divided into three learning strands. The first involved creating, making and presenting. The second encompassed arts criticism and aesthetics. The third strand required investigating and learning about past and present contexts (Curriculum Corporation 1994). These were to reflect the major elements of learning in all the arts including the visual arts. The three learning strands were further refined into five sub-strands for the visual arts. These were (i) making – skills, techniques and processes, (ii) creating – exploring and developing ideas, (iii) presenting, (iv) art criticism and aesthetics and (v) past and present contexts (Jane and Darby 1998). The recommendations for curriculum content and structure that appeared in the *National Statements and Profiles for the Arts* by-and-large were to inform the development of syllabus documents by each of the Australian States and Territories after 1994 (McPherson 1995).

The writers of the National Curriculum supported a culturally inclusive view of the arts and focused their awareness on the way that the arts embody different attitudes, opinions, values and beliefs within social systems (Grenfell 1993). The authors (Curriculum Corporation 1994: 15) state:

The arts are shared-meaning systems that are forms of communication. As such they are constructs of reality which carry values and have the capacity to evoke responses in others. The arts are never neutral but are the embodiment of values, opinions and selected constructs. The arts can be used to preserve and maintain tradition yet they can be dynamic agents of social change.

An emphasis on values and beliefs had the potential to allow teachers to raise important questions and lines of enquiry about the relationship between art and culture. The curriculum writers were laying the groundwork for curriculum reforms that promoted critical analysis and debate through acknowledging the important role of social construction of meaning in art. The message was clear that art was a subject area in which concepts and ideas remained open to contestation and change.

The content of the *National Statements and Profiles for the Arts* had also been influenced by theories about arts learning embedded within an emerging international arts education movement that began in the 1980s – the aesthetic education movement. The next section details some of the principles and ideas that influenced curriculum policy initiatives in Australia in 1994.

The Influence of Discipline Based Arts Education (DBAE) on the Formation of Learning Objectives

An outcome of the aesthetic education movement of the 1980s and 1990s was the formation of the *Discipline Based Art Education* (DBAE) model developed in North America (Walling 2000). This represented a new focus on art as a content-centred subject. Wilson (quoted in Walling 2000: 19) writes that,

DBAE builds on the premise that art can be taught most effectively by integrating content from four basic disciplines – artmaking, art history, art criticism, and aesthetics (the philosophy of art) – into a holistic learning experience.

The new focus on these ‘disciplines’ transformed instructional theory and practice in the visual arts in many schools. In relating the DBAE movement to the later formation of the Australian national arts education policy and even later development of individual State visual arts curricula, it is evident that the inclusion of distinct disciplines in the visual arts subject area was something that closely followed the DBAE model (Wilks 2000; Paris 2006).

Individual state syllabus documents were prepared in the years following the release of the *National Statements and Profiles for the Arts*. They varied in their interpretation and emphasis but essentially each incorporated the principles and concepts contained in the national arts education policy document. The emergence of elements of the DBAE approach in New South Wales’ visual arts curriculum (KG – Year 12) is significant to this study because this represented a more cognitive approach to art education.

The considerable influence of the DBAE model on the arts curriculum profile for Australian secondary schools meant that learning objectives were established for the DBAE disciplines of artmaking, art criticism and aesthetics, and art history. In New South Wales, however, the two DBAE strands – art criticism and aesthetics – retained the same distinct identities but were integrated to form just one discipline strand ‘art criticism/aesthetics’ in secondary syllabi (Board of Studies New South Wales 1997, 1999). This meant that altogether there were three rather than four separate visual arts discipline strands in the secondary school curriculum. While time is not prescribed for each of these three discipline strands, teachers are encouraged to evenly distribute time between them in their visual arts programs (Board of Studies New South Wales 1997, 1999, 2000).

While NSW primary school arts curriculum still essentially follows a discipline-based structure it differs slightly from the DBAE model. The Australian arts curriculum policy document (Curriculum Corporation 1994) recommended that Australian primary arts curricula follow a simpler and more integrated structure. Subsequently, in New South Wales, the content of the primary visual arts course was formed around just two discipline strands, artmaking and art appreciation. Appreciation replaced the two DBAE discipline strands, criticism and aesthetics. In contrast to the DBAE model, which identifies art history as a separate discipline with distinct course content, the New South Wales primary syllabus (Board of Studies New South Wales 2000) incorporates the study of past and present social contexts of art within artmaking and art appreciation.

Overview of New South Wales Visual Arts Curriculum

New South Wales students currently take visual arts as a mandated subject from the start of primary school through to their second year of high school whereafter the subject becomes an elective. Table 4.1 below provides an overview of the sequence of the visual arts course from Kindergarten through Year 12.

Table 4.1 Overview of Visual Arts Stage 1- Stage 6 Syllabi (Board of Studies New South Wales 1999:8)

Primary Stages 1-3	Secondary Stages 4-5		Secondary Stage 6
Creative Arts K-6 Syllabus (2000)	Visual Arts 7-10 Syllabus (updated and reprinted 1997)		Visual Arts 11-12 Syllabus (1999)
Visual Arts	Mandatory 100 hr course generally done in Stage 4	Additional course generally done in Stage 5. Offered as 300-, 200-, or 100-hour course	Preliminary and HSC courses

Students who participated in the case studies undertaken for this thesis were either in Years 4, 5, 6, 7 or 10. The prescribed scope and structure of learning varied slightly according to the different syllabus documents used by each teacher. The first two columns in Table 4.1 outline the course structure for students involved in the study.

The primary students in the study were either Stage 2 (Year 4) or Stage 3 (Years 5 and 6) level students. They followed the Kindergarten to Year 6 creative arts syllabus (Board of Studies New South Wales 2000). Visual arts are one of four creative arts disciplines included in the same syllabus document. The K-6 creative arts syllabus came into effect a little more than a year before fieldwork in the study commenced. The Years 7 and 10 students worked within the guidelines of the Years 7-10 syllabus. Year

10 students in the study were engaged in the Stage 5 additional studies 200-hour course while Year 7 students were engaged in the Stage 4 100-hour course. A new 7-10 secondary syllabus was phased into schools in incremental stages over two years. In 2005 it was introduced to Year 7 and 9 students and in 2006 to Year 8 and 10 students. Though some revisions to the syllabus were undertaken between 1997 and 2006, changes to concepts, structure, learning outcomes and developmental paths were not significant.

The Visual Arts Curriculum in New South Wales Secondary Schools

In addition to the discipline strands, the secondary syllabi adopt an approach in which learning is structured around three key components – ‘practice’, ‘the conceptual framework’ and ‘frames’. These three key components and the relationships between them are described in the syllabus (Board of Studies New South Wales 1999) as represented in Figures 4.1 and 4.2. Furthermore, each of the three components are clarified in the syllabus through the designation of four sub-categories as shown in Figure 4.1.

While all three components remain a part of both the Years 7 – 10 and the Years 11 – 12 syllabi, a change of emphasis occurs as students make the transition between these stages. The course changes at the senior level such that there is more of a focus on exploring the inter-relationships formed between practice, frames and the conceptual framework. Figure 4.2 therefore illustrates this inter-relationship through the overlap of the three components.

Figure 4.1 Years 7-10 Course Structure, Adapted from Course Structure Rationale, Aim and Objectives (Board of Studies New South Wales 1999: 11)

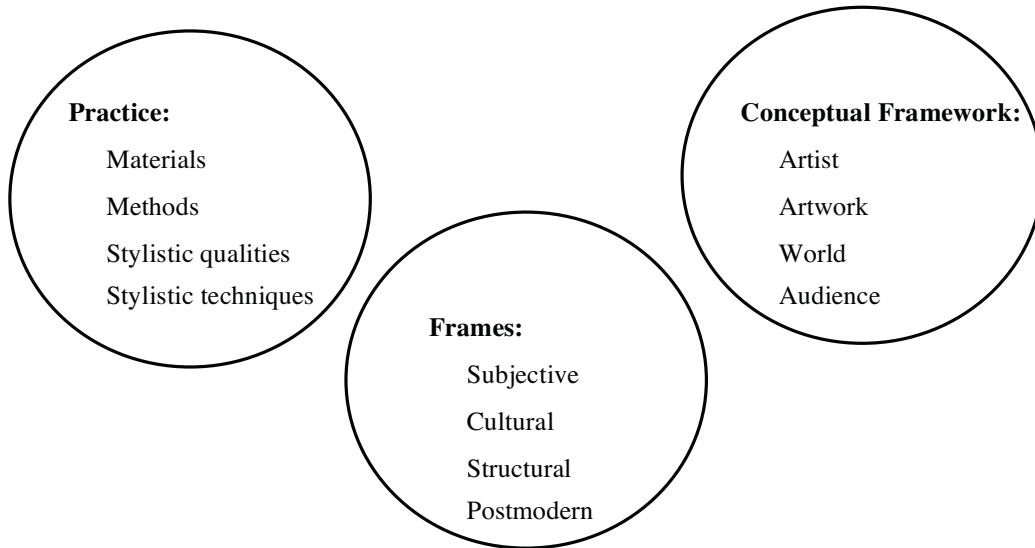
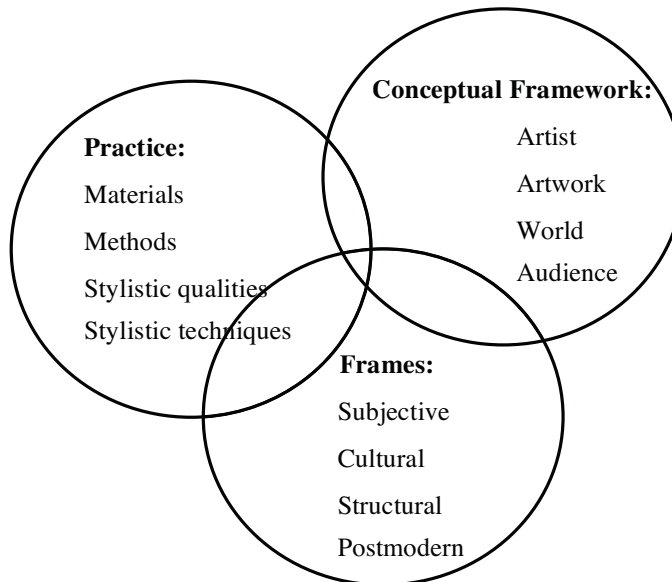


Figure 4.2 Years 11-12 Course Structure, Adapted from Course Structure Rationale, Aim and Objectives (Board of Studies New South Wales 1999: 11)



‘Practice’ denotes the exploration of conventions of artmaking activities as well as the conventions of practice within art criticism and history activities (Board of Studies New South Wales 1999). Artmaking trends and technologies used in the artworld are incorporated into students’ own artmaking projects. ‘Practice’ (artmaking) is an

important component of the Years 7-10 syllabus and the syllabus says that learning may entail, ‘exploring the potential of materials, methods, stylistic qualities and techniques’ (Board of Studies New South Wales 1997: 9). In the words of the syllabus (Board of Studies New South Wales 1997: 16) artmaking,

empowers students to actively engage in one of the primary forms of communication in contemporary society and provides them with a unique means of personal growth and development.

The second syllabus component – the Conceptual Framework – developed out of the theories of Freeman (Mills 2004: 6-7) and Danto (McKeon 2002: 101). This focuses students’ investigations of artworks around the role and function of artists, audiences, artworks and the world. Arthur Danto proposed an institutional theory of art that gave the notion of the ‘artworld’ a philosophical definition. As McKeon (2002: 101) states,

The artworld as configured by Danto constitutes a complete and exhaustive conceptual framework for accessing objects and images interpretively. Danto conceives of the roles and relationships of the artist, and audience, the nature of the artwork and the influence of the world.

The conceptual framework model used in the secondary syllabuses (Board of Studies New South Wales 1997, 1999) identifies the same entities – artist, artwork, world, audience – described in Danto’s institutional theory of art. However, the research and theories of the experimental psychologist, Norman Freeman are also thought to have been influential in forming this conceptual model (Mills 2004; Paris 2006). Freeman’s research in the area of art and learning investigates the relationship of language and belief in terms of how children verbalise their critical thinking about the art domain (Paris 2006). Freeman’s research led him to propose that a child’s conception of art was

filtered through a web or net of social relations (Mills, 2004; Paris 2006). A functional approach to art analysis, Freeman says, ‘dethrones the picture from a central position in favor of the mind’ (Freeman 2004: 360). His reasoning is that a picture does not literally do something because the pictorial properties of a picture have no causal effects upon the world except via agents who register these properties.

The third syllabus component – the Frames –include four different models students apply to investigations of artworks. The four frames provide subjective, cultural, structural and postmodern interpretive frames or lenses. Students are expected to learn about these four frames and how to use them at different times to adopt different points of view within artmaking, art criticism/aesthetics, and art history (Board of Studies New South Wales, 1999). Different frames support the generation of different kinds of questions and possible answers (Maras 1994). When used by art educators, the frames are supposed to help students to realise the variety of ways in which art can be known (Board of Studies New South Wales 1999).

Through integrating the three component strands of Practice, Conceptual Framework and Frames, students are able to use artworks as sources for expressing ideas through either written, verbal or artmaking activities. By using conceptual frameworks and the interpretive frames, students are encouraged to evaluate the role of the artist and his/her intentions by asking who, what, how and why type questions. This is thought to assist with their own artmaking by encouraging them to acknowledge their own intentions in what they make as artworks. In theory work, they are to consider the role and value of the audience, including art critics and historians, as critical consumers of art and how

this gives different meaning to artworks. They consider artworks as real objects and as representations of cultural, symbolic and critical interpretations of others' ideas. They also consider how interests in the world are represented – for example, how art, as a representation of ideologies, are presented (Board of Studies New South Wales 1999: 23-24).

Critical and Creative Perspectives in the Secondary Visual Arts Curriculum

The New South Wales secondary 7-10 syllabus (Board of Studies New South Wales 1997) effectively offers scope to promote critical thinking in the art classroom. Students are encouraged to become autonomous thinkers who can interpret and determine the purpose of artworks for themselves. Through interpreting and evaluating qualities in their own and others' artworks there is an expectation that students will seek reasons for, and provide evidence to support, their own responses to art. This can be performed in both formal (written work) and less formal (discussions) contexts. In discussions the defence of an opinion about art is important for developing critical thinking skills (Wilks 2004: 78). Through the application of the conceptual framework and the frames students learn to appreciate the fact that there may be diverging views in relation to art because they learn that there are multiple interpretive practices that can be applied to analysis, interpretation and evaluation of art. As the viewer of art, they are required to consider their own understanding of the properties of an artwork and reflect upon how close this understanding might be to what the artist originally intended to communicate. Furthermore, students learn that because their interpretation can be contested by others they are required to use evidence obtained from artworks to support their assertions about the meaning and value of an artwork. The fact that syllabus guidelines encourage

students to examine people's beliefs, values and lives in the context of art and the world means that the visual arts are given a multi-disciplinary focus. This allows for study and research to reach beyond the boundaries of the subject area. The emphasis on a conceptual model within the curriculum promotes an understanding of the complexity of art as a knowledge domain.

The word 'critical' appears frequently in the two syllabus documents reviewed in the study. By contrast, there are remarkably few references to 'creativity' in the Year 7-10 syllabus document (1997) and fewer still in the K-6 syllabus (2000). Weate (1996: 93-94) draws a comparison between the use of the word creativity in the former (1987) syllabus document and the new syllabus (introduced in 1994 and revised in 1997). She says that creativity and its cognates¹ appear a total of 22 times in the former syllabus, whereas, it appears only nine times in the 1994 syllabus. Two of the nine times it is used in the term 'creative arts'. Weate (1994: 94) attributes this change to a reduction in the importance and authority of the term. This reduction is thought to be deliberate, signalling a movement away from an expressionist model (see further Chapter 3) in arts education and acceptance of the DBAE model (Weate 1994; McKeon 1994). The shift away from the authority of creativity is also considered an aspect of the ascendancy of postmodern practice within art education (Weate 1996; Efland 2004; Freedman and Stuhr 2004). The creative precepts of uniqueness, originality and the individual are no longer highly regarded within the paradigm of the postmodern because they are too closely associated with modernist accounts of art (Weate 1993: 95).

¹ Creativity cognates, according to Weate (1996: 94) include the words 'create', 'creative', 'creatively' and 'created'.

While there may have been an avoidance of references to creativity by syllabus writers, it appears that in its place are frequent references to innovation, imagination, problems and problem solving (Board of Studies New South Wales 1997). The use of these terms implies that creative objectives are still important to learning in the visual arts but that there was a shift in thinking about the concept of creativity. Creative outcomes were now considered more likely to result from providing stimulating learning experiences and through developing knowledge, techniques and skills (Bamford 2002). The message appears to be that all students can be creative because creative thinking skills are teachable (McKeon 1994: 18)

Visual Arts Curriculum in New South Wales Primary Schools

In New South Wales, the draft creative arts syllabus was first tried in primary schools throughout the state in 1998 and the final version of the syllabus was released after a two-year trial and development phase in 2000. This was six years after the *National Curriculum Statements and Profiles for the Arts* (Curriculum Corporation 1994) and eleven years after the prior visual arts syllabus.

The new curriculum framework (Curriculum Corporation 1994) meant all creative arts disciplines were now integrated as one Key Learning Area (KLA). Consequently there was one syllabus document as opposed to the former situation in which there was a separate syllabus for art, craft and music and none for dance or drama. A further major change in the new syllabus was that teachers were expected to incorporate activities designed to teach art appreciation and this had not been a structural part of the 1989

syllabus (Department of Education New South Wales). The visual arts now had two learning strands – making and appreciating (Board of Studies New South Wales 2000). Teachers were also expected to consider social and historical perspectives in their planning and programming of making and appreciating (Board of Studies New South Wales 2000). Through both making and appreciating activities, teachers and students are encouraged to focus on the way thoughts and concepts can be represented in visual form as well as the way they can be interpreted and presented to an audience. Art appreciation is presented as a simpler and more foundational form of art criticism practised at secondary school level. Art appreciation places greater emphasis on student-centred critique and this is believed to be better suited to the developmental stages of younger children (Geahigan 1998: 14).

Student understanding of the influence of social agencies – ‘artists’, ‘artworks’, ‘audiences’ and ‘the art world’, concepts central to the secondary syllabuses (Board of Studies New South Wales 1997, 1999) – are also present in the primary syllabus document. This is made clear in the following statement of syllabus (Board of Studies New South Wales 2000: 10) aims:

In Visual Arts, students develop knowledge and understanding, skills, values and attitudes in *Making* and *Appreciating* by engaging with the concepts of artists, artworks, the audience and the world.

Bamford (2002: 45) comments that the K-6 (2000) syllabus places child art within the parameters of the art world and draws parallels between the two.

Critical and Creative Perspectives in the Primary Curriculum

The introduction of the primary syllabus in 2000 effectively expanded the scope for the development of thinking. Students were expected to observe, plan, create, reflect upon and evaluate artworks. Bamford (2002) states that the new syllabus represented a more cognitive approach to the subject. She says (2002: 45),

A more cognitive approach to art moved away from child models to reliance upon studying acclaimed art works as examples of best practice in the discipline.

In keeping with a more cognitive approach, primary students were encouraged to reflect upon how their own works may be connected to the work of others within the field of art. The new course content and structure allowed students to gradually develop an understanding of the place and value of the visual arts in society and culture at a personal, community, national and global level.

Within the new syllabus structure the process of making art remained an important focus but it was conceptualised as a design or problem solving process rather than a 'creative' process (Bamford 2002: 45). The teachers' role was to scaffold the problem solving process through providing training in art skills and techniques, choosing amongst art media and exposing children to examples of quality art. Bamford (2002: 45) says that the transition to a new cognitive problem solving approach made it difficult for many primary teachers who had been trained and often had school experiences themselves, during the expressionist era when the philosophy was to maintain the purity of child art.

The K–6 syllabus document (Board of Studies New South Wales 2000) contains various statements that indicate an orientation towards improving students' cognitive capacities. For example, the following excerpt (Board of Studies New South Wales 2000: 6) contains clear references to ways of thinking and working:

Students can interpret certain aspects of the world in their works, in novel, innovative and creative ways....Over time students can think about how works might generate different interpretations and how they may mean different things to the makers and the audiences....The approach also takes into account students' cognitive development and the critical role of the teacher in providing learning experiences that are suited to the students' abilities and developmental needs and interests.... By the time students have reached Stage 3, students are generally able to reflect upon their own activity.

The direct reference to cognitive development in the above extract is notable. The attention drawn to the role of teacher as an active agent in framing cognitive growth through the selection of learning experiences is also apparent. There is encouragement for engaging in learning experiences that lead to innovative and creative thinking – whether through art practice or art criticism. There is also reference to forming 'different interpretations' and to the fact that there may be multiple interpretations of artworks. Students may have to suspend judgment and consider a work's social purpose and meaning. This kind of activity suggests an orientation towards the application of critical thinking, as does the final statement in the extract: 'students are generally able to reflect upon their own activity'. The syllabus (Board of Studies New South Wales 2000: 11) states that art appreciation can be used to develop 'critical perspectives'.

Students can develop a critical perspective in their appreciation of the visual arts by discussing the properties of selected works and thinking about which is more effective and why.

Art appreciation at the primary school level involves students in investigations of artists' works through direct personal responses (Board of Studies New South Wales 2000). Personal response whether in written or spoken form, offers young students a degree of authority in their interpretation of meaning (Weate 1993). Geahigan (1998: 14) states that facilitating personal response to works of art within art appreciation is a means of getting students started on critical inquiry by helping them, 'to realize that the works they are studying present problems of meaning and value'. Students think about themselves 'as members of an audience' and also come to realise that there is no singular way meaning can be derived from artworks (Board of Studies New South Wales 2000: 11).

A Cognitive View of Art

Thus far, the discussion in this chapter has focused on curriculum changes that signalled a move towards a more cognitive view of art education. It is contended that in the 1990s national curriculum policy makers and the writers of the New South Wales school syllabus documents were responsible for introducing a discipline-based approach to teaching the subject. Within this discipline-based approach the student was viewed as a 'conscious critical individual' (Lovegren and Sten-Gosta, cited in Bamford 2002: 45). The curriculum changes encouraged the application of critical thinking skills in making and responding to art. The formation of The Frames, Agencies in the Artworld and Practices, in the New South Wales primary and secondary syllabi as concepts for learning, promoted the idea of critical engagement. This idea is also illustrated in the frequent use of the term 'critical' as well as 'analysis', 'evaluation', 'interpretation' and 'judgement' – all processes associated with critical thinking.

It has also been argued that the focus on critical thinking in the syllabus, to some extent resulted in a devaluing of creativity as a primary learning aim. Although the syllabus changes seem to reduce the value of creativity through a change of emphasis, there is no question that the development of creative skills remains an important rationale for the study of art. Creativity in artmaking is considered within the syllabus documents to result from carefully planned and sequenced learning activities that engage students in creative problem solving (Board of Studies New South Wales 1997, 1999, 2000). ‘Creative innovation’ is fostered through finding interesting and imaginative problems to solve and applying innovative practices and techniques in artmaking (Board of Studies New South Wales 1997). Artworks also are viewed as sources of creative inspiration and teachers are expected to carefully select exemplary models to stimulate students’ own creative ideas for artmaking (Board of Studies New South Wales 2000; Bamford 2002).

Undoubtedly, the curriculum concepts and syllabus strands described in this chapter have a significant influence on the practices and activities of art teachers. Teachers who were observed and interviewed for this study were expected to be familiar with the syllabus relevant to their situation and were required to design their teaching in a variety of ways to satisfy curriculum requirements. As this chapter has demonstrated, the syllabus documents clearly emphasise critical and creative thinking as an important element in art teaching. Exactly how teachers engage with critical and creative thinking practices is of course the primary research question of this thesis. In order to answer this

question, a particular methodology was adopted whereby specific teachers and students were interviewed and observed in their classrooms. Before turning to the presentation of this data, however, it is necessary to clarify the methodological approach used for this thesis. The next chapter therefore, outlines the methodological considerations that were significant for the collection and analysis of data and outlines the research design adopted for the study.

Chapter 5

Research Design

Deep understanding of a complex landscape will not be obtained in a single traversal. Similarly for a conceptual landscape. Rather the landscape must be crisscrossed in many directions to master its complexity and to avoid having the fullness of the domain attenuated (Spiro et. al. 1988: 6).

The chapter begins by outlining the reasons for the selection of a qualitative design framework for the study. A classroom based qualitative case study inquiry approach was believed to be an effective means of developing insights into teachers' and students' theoretical perspectives and practices in regard to the development of critical and creative thinking through art. Specifically, ethnographic case study methods were used to gather, analyse and triangulate significant data. Four different cases were included in the study and data was collected through observation records and interviews with teachers and students in these case groups. While this formed the broad parameters of the research approach, the researcher developed a unique set of procedures and tools as a way of addressing the research questions. This chapter presents information about: the researcher's participant role; sampling decisions; the purposes of thick description in establishing the generalisability of findings; data collection; choices in sorting and transcribing data; the process adopted for the reduction of categories; and comparative analysis of data through triangulation.

The Guiding Influences of a Qualitative Choice

The perspective taken in regard to the central research topic – the role of critical and creative thinking in visual arts pedagogies – is that one should not only think of these cognitive activities as qualities of thinking possessed by *individuals* but also as

interactive social projects that are often dependant on the quality of the social environment. In the context of schools, the people who contribute to the social environment are school administrators, principals, teachers and students. Qualitative methods were highly suited to the purposes of the study because they were able to address questions designed to provide a deeper understanding of social phenomena and to provide descriptions of social settings (Thurber 2004). My intention was not to test existing theory but rather to apply an inductive approach suited to theory building. In qualitative studies variables unfold as a result of the research process and so research rarely begins with a hypothesis (Thurber 2004). Such research considers phenomena as though it was happening for the first time and requires the researcher to suspend presuppositions (Hays 2002).

There is a high degree of flexibility in qualitative frameworks and this made it suited to researching social aspects of classroom life. The pluralistic methods used in qualitative inquiry were valuable in capturing the complex elements and processes of art teaching and generating theories about the way a group of experienced art teachers and their students conceptualised critical and creative development. The ability of qualitative methods to more fully describe a complex and dynamic phenomenon was an important consideration. The study of critical and creative thinking in the context of visual arts education is a complex undertaking because these are often hidden mental processes. They can only be identified through analysing the nature and quality of human communication and behaviour – speech, writing, actions and visual communication. It is also claimed in this study that as Amabile (1996) suggests, critical and creative thinking are somewhat dependent upon specific subject matter for their form. While the

underlying values and attitudes that underpin critical and creative thought may remain constant across school subjects, the knowledge and skill base required for critical and creative thinking varies from subject to subject. The strength of a qualitative methodology is that it was able to capture different viewpoints or perspectives in regard to what counts as critical and creative thinking in the visual arts domain. Furthermore, as a domain of knowledge, the visual arts offer aesthetic experiences that are essentially qualitative in nature and art enterprises are often investigative and exploratory (for example, see Eisner 2002). In studying the experience of learning in the visual arts it seemed appropriate to reflect these qualities.

Qualitative research is an umbrella term that spans a variety of research methodologies and practices. Some of the many qualitative research traditions that have been applied to education research include phenomenography, action research, symbolic interactionism and ethnography. An ethnographic case study approach was applied to this study and the next part of this chapter discusses the characteristic qualities of this research approach as well as its suitability for the research topic.

An Ethnographic Case Study Approach

Ethnography essentially is holistic research that is founded on the idea that properties within a social system cannot necessarily or accurately be understood independently of each other (Bresler 1998). In order to understand the unique properties of the system and how these interrelate, the researcher typically participates in that system for a period of time and conducts extensive fieldwork. Bresler (as cited in Thurber 2004: 497) described ethnographic research as an in-depth means of discovering shared

values, knowledge and practices of one culture or a specific group of people. Case studies similarly involve in-depth analyses of individuals, groups or settings and these can take the form of a single case, multiple case, and cross-site analyses (Thurber 2004: 497).

As a research design, the ethnographic case study approach allows for multiple methods of obtaining data in order to gain in-depth understanding of the teaching and learning processes that exist within different classroom populations. Since the focus of the study was to discover how visual arts pedagogies contributed to the development of critical and creative thinking during visual arts lessons, this approach appeared most relevant. Participants in each case organised or contributed to the teaching and learning environment in a way that was particular to that setting. A field based case study strategy was considered appropriate since it placed action and events in context. The researcher interviewed, observed, recorded and described the role of critical and creative thinking in different classroom settings – actions that are characteristically used for ethnographic case study methods (Bresler 1998).

Developing the four cases allowed the researcher to assemble a set of descriptive portraits or images. These images reflected teacher practitioners' theories and the value they ascribed to training critical and creative thinking through art. In addition, they reflected the way these theories and beliefs impacted on education practices in the classroom. While the four case studies could not possibly represent the realities of the broader field of art education they were able to capture some of the diversity that existed in art teaching practices in New South Wales schools. Spanning both primary

and secondary education the study involved specialist and non-specialist art teachers, students of different ages (an age span of approximately eight years from oldest to youngest) and incorporated different art curriculum components. It was anticipated that this would assist not only in understanding more about the pedagogical orientations in each case but also how these might encourage critical and creative work differently.

As is typical for ethnographic case studies, this study can be characterised as 'naturalistic'. In keeping with naturalistic enquiry methods, there was no attempt to influence the research setting since the intention was to focus on people and their regular activities (Patton 1990). However, the presence of an outsider naturally had a bearing on the behaviour of participants. The interaction between the researcher and participants was a two-way process and over the time of research, interpersonal understandings grew through regular encounters.

Researcher as Participant

During fieldwork the researcher tried to aim for a non-participatory stance but it was not always possible to remain a detached observer. The reason why non-participant observation was a preferred option was that it was perceived that the researcher's subject expertise and experience in visual arts could interfere with fieldwork. Apart from this concern there was an awareness of the fact that the visual arts by nature provide a very 'hands on' experience and there is often a strong demand for students to be given individual attention during art classes. This makes it difficult to maintain the clear mental and physical space required to observe both students and teachers. Burns (2000) points out case study researchers are rarely total participants or total observers

and this is true of the experience of fieldwork in this study. There was more than one occasion during class visits where this researcher was called upon to help in such ways as handing out materials to students, supervising the class if the teacher had to leave the room and helping individual students who sought assistance. In general however, the researcher signalled to others that she was purely there to observe. This was done through avoiding direct eye contact with students as much as possible, deflecting pleas for help by directing students toward the teacher, and using body language that suggested a preference for positioning oneself on the margins of classroom activity. There was some fluidity of movement, however, between remaining on the margins of activity and engaging directly with students and teachers. There were moments during lessons when there were opportunities to have quiet conversations with students and their teacher about what they were doing and planning.

Generalisability

The process of creating thick description was applied to field notes undertaken in this study. The concept of thick description is associated with ethnographic research (see further Geertz 1973, cited in Eisner 1994). Eisner (1994: 228) defines the meaning of thick description as follows: ‘thick description as opposed to thin description seeks to explicate the deep structure of social events, and the rules or modes that gives them order’. The logic behind employing thick description is that if more detail is provided by the researcher in descriptions of particular events, settings and various aspects of social existence, someone reading the account will have much more intimate understanding and appreciation of the relationships between social practices and the systems of meaning in a particular cultural milieu (Lindlof and Taylor 2002). Bresler

(1998) comments that providing thick description in qualitative research is essential as a basis for transferability of phenomena from one context to another at least to the extent to which the studied phenomena correspond to the reader's experience. Some transferability of understandings about phenomena may occur because in another similar context or situation it is possible to recognise certain characteristics or qualities that are described in the case study (McTaggart (1991)).

Sampling Decisions

As Lindlof and Taylor (2002: 122) point out, most qualitative studies are guided by purposeful sampling strategies. Schwandt's (quoted in Lindlof & Taylor 2002: 122) comments on the subject present a clear rationale for purposeful sampling.

Sites or cases are chosen because there may be good reason to believe that 'what goes on there' is critical to understanding some process or concept, or to testing or elaborating some established theory.

Similarly, for the purposes of this study it was important to select educational sites that would maximise opportunities to discover more about the role that critical and creative thinking played in visual arts education. For this reason it was the researcher's desire to discover rich centres of visual arts activity in schools. Teachers selected for the study had what could be described either as a 'passion' for, or a 'deep interest' in art and were experienced teachers. It appeared to the researcher that what actually went on in their classes would provide valuable data about variations in the role of critical and creative thinking in the teaching/learning process. As accomplished art teachers it was reasoned they were more likely to have developed effective ways of fostering critical and creative thinking through art.

The four case studies included class groups from different state schools situated in a regional/rural area in northern New South Wales. Two primary school and two secondary art classes were chosen. Such a selection provided a diversity of age and developmental levels – a student age spread of approximately eight years. The inclusion of a diversity of class age groups was thought to assist in exploring a range of circumstances and experiences amongst participants functioning at different levels within the school curriculum. The main rationale for the age spread was that it was considered likely that the role of creative and critical thinking in art classes shifted as students advanced through their schooling. Teachers would in all likelihood have different expectations of students' ability to learn and apply critical and creative thinking skills to art tasks due to their age level.

Whilst the aim was to have variation in student ages represented in the four cases, a decision was made not to include students who were at the extremities of age in the school population such as infants' grades (Kindergarten, Years 1 and 2) and the senior secondary grades (Years 11 and 12). There were a number of reasons for excluding these age groups. There was a concern that critical and creative thinking are complex and abstract concepts that very young students may not be cognisant of and may not have the vocabulary to articulate a viewpoint about in interviews. Involving senior students would have also been problematic for two primary reasons. Firstly, the learning program in New South Wales' schools typically follows a different pattern to the junior secondary years. Art teachers often work with their students on an individual basis while students do extended art projects and so there are fewer activities and dialogue

that involve the whole class group. This would have made it difficult for the researcher to observe patterns of class instruction and interactions within the class group. Secondly, formal assessment procedures, particularly in the Year 12 group, are demanding and there are times during the year when revision and testing occupy a great deal of classroom time.

There were obvious variations amongst each of the case study sites. The main variables were the students' ages and the syllabus documents used by the four teachers. Two teachers followed the New South Wales primary K-6 Creative Arts Syllabus (New South Wales Board of Studies 2000) and the other two teachers, the New South Wales Stage 4 and 5 (Years 7-10) Visual Arts Syllabus (New South Wales Board of Studies 1997).

Selection of Participants

Six main factors influenced the selection of teachers and schools for the study. Firstly, it was essential that teachers in each classroom were consistent. That is, in each case study the same teacher needed to be teaching on a regular weekly basis throughout the total period of observation. Secondly, all teachers selected had to show a willingness to participate in the study. Similarly, each of the school's principals had to give their permission to conduct the study. Thirdly, teachers were selected who would help incorporate samples of a range of class groups. Fourthly, teachers were selected because they had been recommended either by the creative arts education consultant working in the New England Regional Office of the New South Wales Department of Education and Training, or by teacher colleagues and/or school principals. They were

recommended because they had a passion and interest in teaching art. Fifthly, all the schools selected were situated within the New England region of Northern New South Wales as the proximity of site locations made data collection convenient. And finally, the position of teachers involved in the study represented typical arrangements for classroom instruction within either primary or secondary school staffing structures.

Participant Schools and Classes

As is shown in Table 5.1, two secondary schools and two primary schools in the New England district of northern New South Wales were selected to take part in the study. The four cases are numbered in Table 5.1 and are similarly described as Case 1, 2, 3 and 4 in the forthcoming Chapters 6, 7 and 8.

Table 5.1 Identification of Individual Case Samples

CASE STUDY 1 Secondary School	CASE STUDY 2 Secondary School	CASE STUDY 3 Primary School	CASE STUDY 4 Primary School
New England District	New England District	New England District	New England District
Specialist Art teacher Full time staff	Specialist Art teacher Full time staff	Generalist teacher Part time staff	Generalist teacher Full time staff
Year 10 Additional elective studies class.	Year 7 Mandatory class	Years 4, 5 and 6 Composite class	Year 4
Secondary Year 7-10 Syllabus Stage 5 level	Secondary Year 7-10 Syllabus Stage 4 level	Primary Creative Arts Syllabus Stage 2 & 3 levels	Primary Creative Arts Syllabus Stage 2 level

The two primary schools were of different sizes. One had over two hundred students while the other just over fifty students. The smaller of the two schools was situated near farmlands about 45 kilometres from the largest town in the region and the larger of the two primary schools was situated near the town centre.

The small primary school (Case 3) had a staff of two full-time teachers and one part-time teacher as well as a part-time Aboriginal teacher's aide. The classes were composite (multi-age) classes. The school principal of this school was also one of the full-time teachers and taught the Stage 2/3 (Years 4, 5 and 6) composite class. This class had twelve students of which eight were boys and four were girls. The teacher participating in this study came into the school two days a week as a release teacher for the principal and over those days she taught a range of subjects including an art lesson once a week (mid week) for approximately thirty minutes in the last period of the day.

The larger of the two primary schools (Case 4) organised classes according to homogenous age groupings so that each class represented one grade level. The class group chosen for this study was a Year 4 class with a total of 28 children in the class – 19 boys and 8 girls. Art class times usually varied such that there was no regular timetable slot. However, since it was necessary to establish a time each week for research visits, the teacher agreed to a more regular arrangement for art lessons. During the period of observation, art classes usually took between 45 and 90 minutes and were held mid week either immediately before or after lunch.

The two secondary school classes selected for the study were of approximately the same size and were in large state secondary schools. One of the case study classes (Case 2) was a Year 7 group (Stage 4 syllabus) who were enrolled in a mandatory studies art class. The other was a Year 10 class (Case 1) who were enrolled in an additional studies (Stage 5 syllabus) art class. This meant that the Year 10 students had selected to do

visual arts study voluntarily while the Year 7 students were undertaking art study as a required part of the core curriculum. The Year 7 class had twenty students – nine boys and eleven girls. The Year 10 class had 25 students – three boys and 22 girls. Both the Year 7 and 10 art classes were regularly scheduled each week and there were usually three periods of art every ten-day cycle for each class group. Art periods could last between 45 minutes (Year 7) and one hour (Year 10).

Participant Teachers

Of the four teachers selected as participants in the study, two can be described as generalist primary classroom teachers, whilst the other two were specialist visual arts secondary school teachers. This use of a *generalist* to teach the primary school creative arts curriculum versus a *specialist* for teaching individual secondary school arts disciplines reflects normal teaching practices in government primary and secondary schools in New South Wales.

In government secondary schools, art teachers are recognised as subject specialists; that is, they usually teach the one curriculum subject. Typically, they have completed an undergraduate bachelor degree in Fine Arts as well as postgraduate teaching qualifications incorporating secondary methods in visual arts pedagogy. A primary teacher on the other hand, is required to teach all six Key Learning Areas (KLA) in the primary curriculum. Creative Arts is identified as one KLA even though the term ‘Creative Arts’ in fact incorporates music, drama, dance and visual arts. Training in creative arts pedagogy is therefore just one of a number of curriculum studies that pre-service primary teachers are required to undertake in their undergraduate degree.

Commonly pre-service primary teachers are required to complete just one compulsory unit of study in Creative Arts education. As a study of the Creative Arts necessitates a multiple subject focus the amount of time that can be allocated to visual arts is often limited. Some primary teachers opt to do further in-service training in the Creative Arts to improve their knowledge and skills but this is on a voluntary basis and is not required by the New South Wales Department of Education.

The two secondary school teachers who participated in the study were full-time teachers who had taught art for many years. Both had experience teaching a wide range of ages from Year 7 through to Year 12. At the time that fieldwork commenced for this project, one teacher had been at her current school for just over a year and the other over five years.

The two primary school teachers who took part in the study had been teaching for many years. Neither of these teachers had any formal art training apart from their pre-service teacher training. One of the primary teachers had been involved in a few recent in-service art education workshops run by the New South Wales Department of Education. Both teachers were personally interested in art and enthusiastic about the subject and had been teaching in their respective schools for over five years. They were both recognised by their school colleagues and principals as having valuable subject expertise and they assumed responsibilities for art displays and exhibitions within the school.

Data Sources and Triangulation of Data

In the four case studies the main data sources were interviews and observation field notes. Interviews were conducted with teachers in each case study and with a sample of students from each class. In addition, extensive field notes, as well as informal conversations with individuals over a period of six to eight weeks, were undertaken with each class group. Furthermore, information gained from documents such as teachers' lesson plans, student artworks, and art textbooks were recorded in the field note journals.

An important aspect of data collection and analysis was the concept of triangulation. In this study the way triangulation occurred was through comparing transcripts of student interviews, teacher interviews, and field observations. Contrasts and similarities were noted between these to find a common explanation in regard to particular themes or issues relating to the research topic. While the use of triangulation in this study was valuable in finding more reliable explanations about the topic it was not aimed merely at validation. Triangulation of data also was aimed at deepening and widening the researcher's understanding of the topic. Conceptual development specifically in regard to the development of concept categories was facilitated through converging information from different data sources.

Observations and Field Notes

Observation visits were conducted over a one-year period beginning in early October 2002 and finishing in November 2003 for all four case studies. Each case study

involved site visits for the purpose of observation over one school term. This meant there were multiple observations of visual arts lessons in four separate schools for between eight (for secondary schools) and ten (for primary schools) weeks. Primary school class observations involved just one visit per week to attend the specific art lesson held at each school. On the other hand, visits to secondary school classes involved two to three class visits per cycle (ten days in a timetable cycle). Due to this variation in timetabling the total number of observation visits to each of the case study sites were very similar despite the reduction in weeks spent doing secondary school fieldwork. General notes of classroom events, as well as teacher and student behaviour were entered into a field diary during each visit and later transcribed. The researcher's attention in observation sessions was focused on the external behaviours that were indicative of critical and creative thinking amongst students. These journal notes were later prepared in typed manuscript form.

Interviews

As Burns (Burns 2000) suggests, interviews can be classified as either open ended (unstructured), semi-structured, or structured. Semi structured interviews were believed to be an appropriate method to use in the study because it allowed interviewees to voice their own analysis of observed events and activities. In keeping with the semi-structured method, an interview guide was designed prior to teacher and student interviews (see Appendices Documents IV and V). Having questions prepared worked to enable consistency of focus across all the interviews while allowing opportunities for interviewees to venture into areas or topics not previously anticipated. Lindlof and Taylor (2002: 195) state that when using an interview guide, 'the researcher has the

freedom to ask optional questions or go down an unexpected conversational path' and he or she can also 'reshuffle topics and questions in order to find the best fit'. Lindlof and Taylor distinguish between the informality of an interview guide as opposed to the formality of an interview schedule. According to Lindlof and Taylor (2002: 194-195), the interview schedule is designed so that 'all interviewees hear roughly the same questions in the same way' and it 'stresses standardisation of the method'.

The use of an interview guide rather than a questionnaire meant there was no fixed or standardised structure and sequencing of questions and there were opportunities to probe interviewees' initial responses by asking further questions. The flexible nature of the questioning process gave interviewees some sense of empowerment in the interviews. It allowed them to bring forward information they felt was relevant to discussion topics. The interviewees were also able to reflect upon previously observed lessons and consider the kinds of cognitive behaviour and strategies that might have been fostered on different occasions. It also allowed the researcher to probe answers to certain questions to develop a more in-depth understanding of the ideas, issues and concepts raised.

Student and teacher interviews took place in school grounds and were recorded with the permission of the informants. In each case study site interviews were scheduled near the end of the period of classroom visits. This was important, as the quality and depth of the responses were likely to improve when a rapport had been established with the researcher. In interviews it was also possible to draw on recent class events and activities to prompt students and teachers to recall how and why they did certain things

during art classes. Interviews with teachers and students were recorded using an audio recording device and then later prepared as typed transcripts.

Student Interview Procedures

Only a small sample of students from each class was involved in interviews. It was impossible to involve all students in each class in the interviews and not all students consented to being interviewed. The logistics of interviewing large numbers of students would have extended the research period well beyond the time allocated for each case study. A total of eighteen students from all four sites were interviewed. The least number of students interviewed at any one school was four, while the greatest was six. Each student interview session lasted between 30 and 45 minutes. However, no restriction was placed on time allocated for interviews. A trial interview session was conducted with one student in the first case study although the transcript data was not used in case analysis. Subsequently, another interview session was conducted at the same case study site involving two students. The students had volunteered to be together for the interview. The interview was successful and free flowing because having an, 'interview buddy', seemed to give the younger students confidence. There were also opportunities for students to listen and respond to each other and this established a more relaxed mode of discourse. In contrast the negative effects of interviewing students in pairs had to be considered. In some respects the presence of a peer may have influenced the sort of information each student was willing to share with the researcher. Furthermore, student dialogue may have 'followed suit' on some occasions because one student was inclined to follow the lead of a more dominant peer and thereby echo the same response to questions. Nonetheless, after weighing up the

positives and negatives of pairing students, it was decided that all interviews would include two students.

Prior to starting each interview, the students were told a little about the format of the interview. Student participants were also told that they could ask to leave the interview and return to their class at any time if they were not comfortable with the questions. Interviews with students were always conducted within close proximity to either their teacher or another adult school staff member.

Teacher Interview Procedures

One interview was conducted with each participant teacher in the final week of fieldwork visits. This ensured that I had the same degree of experience of teachers' classroom work upon which to orient the interview. Each teacher interview varied from 25 minutes to 60 minutes. The variation in time was a result of factors, such as, available break times in the school schedule and the level of teacher receptiveness to being interviewed. There were also very brief informal non-taped discussions with the teachers before, during and after classes. Notes about these discussions were entered immediately at the end of observation periods in a fieldwork journal. These informal discussions formed an important part of the dialogue between teachers and myself as teachers would sometimes critique or reflect on lessons.

Analysis Process

No single method of analysis should necessarily be applied to a case study. However, content analysis has been commonly associated with this method (Tesch 1990). Content

analysis has had a long tradition in sociology but qualitative forms emerged much later than quantitative content analysis (Tesch 1990: 25). Content analysis is widely used in social research because it can be applied to examine any piece of writing or recorded communication.

In this study, content analysis allowed the researcher to look directly at communication – the central aspect of social interaction – and in so doing helped identify the focus or communication trends of individuals in each case. The use of semantic lexical analysis procedures within content analysis assisted in forming semantic connections between concept categories and critical/creative thinking. Semantic lexical analysis relied on knowing the meaning of individual words and how the meanings of individual words combined to form the meaning of groups of words. Words associated with the core categories were compared against complex word webs established for critical and creative thinking constructs. These word webs were derived from the earlier literature review.

A grounded theory approach to content analysis was used, in keeping with the inductive nature of ethnographic case study methods. Therefore, concepts or categories were not prepared prior to sorting, coding and analysing the data collected. A deeper analysis of all transcripts provided a means to examine each case study to identify key approaches, opinions and activities. This analysis necessitated a thorough preparation of transcripts. Consequently, transcripts of interviews and observation notes were prepared in documents with each line numbered for easy reference. Line numbers provided a simple system for locating specific segments of text within each transcript.

Sorting Data

During reading and a subsequent re-reading of all the interview and observation data, single sentences and larger chunks of data were highlighted and marked with comments in the margins of each page. All data was accounted for during these readings and short descriptive titles were written into the margins of transcript pages. In general, within the interview data these initial categories could be described as being connected to informants' feelings, thoughts and opinions in relation to their general experience of studying or teaching art.

Categories were 'tagged' in four distinct ways. Firstly, those portions that did not appear to have any bearing or relation to the research questions were tagged as 'Null'. Secondly, teachers or students sometimes mentioned key words during interviews and these were taken as the tag for that statement. For example, the key word 'creativity' was mentioned by teachers when they made comments such as, 'I think that *creativity* comes from the motivation for why we even exist' or '*creativity* is in all of us'. By contrast, in the third method for determining a tag, the researcher tried to encapsulate the essence of what was being said using words and terms that were not directly mentioned. For example, the category, 'student artistic autonomy' was clearly implied when participants said such things as, 'more free choices' and 'if we could do what we wanted instead of what we are told' in regard to their artmaking activities. Finally, tags were also chosen as synonyms for other words mentioned by either teachers or students. For example, the category 'art criticism' was only directly mentioned twice in all of the teacher and student transcripts but teachers also used other descriptors when they said,

‘they [students] don’t like to have to make judgements [about artworks]’ or ‘analysing art is a rigorous intellectual exercise’. In these instances the words *judgements* and *analysing* were read and understood as synonyms for art criticism because these words denote different phases in criticism. The *ArtLex Art Dictionary* states, ‘Interpretation or judgement is a stage in the work of art criticism following the describing and analysing of an artwork, in which one identifies the work's expressive qualities, or the meaning, or the mood, or idea communicated to the viewer’ (<http://www.artlex.com/> accessed 12th October 2007). Judgement is also recognised as a key aspect of art criticism in the secondary syllabi as is illustrated in the following quote: ‘Judgement plays a prominent role in art criticism in terms of arguing a case about the qualities of an artwork or an issue or event of some significance...’ (Board of Studies New South Wales 1999: 21).

Observation data was also subject to the same process of sorting and tagging as interview data. Many of the same categories that appeared in the interview data also emerged in observation data. In general, within the observation data the initial categories formed could be described as being connected to informants’ dialogue exchanges, their behaviour and actions as well as class events and innovations. Following the identification of initial tags a review process was undertaken to identify similarities amongst them. This helped gain an overview of the data and resulted in the recombination of themes or concepts into larger conceptual units. The lists of tags for interview and observation data were checked thoroughly. It was discovered that many themes or concepts in both student and teacher list tables, although labelled differently,

were conceptually similar. For example, those related to art appreciation could be collapsed into one. At first art appreciation had been tagged within three separate categories – art appreciation and the connections to art making; art appreciation and the study of other artists; and art appreciation exercises. These three categories could easily be absorbed into the single generic category of ‘art appreciation’. A list of 49 categories resulted from this process and these were placed in alphabetical order according to the first letter in the category tag.

Macro Thematic Groupings of Codes

The list of tags represented a significant number of thematic categories within the interview and observation transcripts. Individual categories were grouped into larger ‘macro concept’ groups. Macro concept groups were then developed through comparing categories to see how they could be applied to the three main lines of enquiry within the research topic – teachers’ perspectives and practices, students’ perspectives and practices and contextual scheduling/resources factors. As shown in Table 5.2, four macro thematic headings were chosen. These were: A) Teachers’ Views and Actions, B) Students’ Views and Actions, C) Cognitive Skills and Behaviour and D) Resources and Environmental Factors. The four macro thematic groups were allocated yellow, orange, green and maroon colour codes as appears in each header in Table 5.2. Colour highlighting matching these colours was then added to all transcripts to identify which lines were associated with particular macro themes.

Table 5.2 Macro Themes Emerging Through Data Analysis

GROUP A. TEACHERS' VIEWS/ACTIONS – INCLUDES ATTITUDES, VALUES AND JUDGMENTS, TEACHING METHODS.	
1) Art Apprec/critic.	Teacher set tasks – art appreciation (primary), art criticism (secondary) tasks
3) Art styles/genre/lang	Teacher set tasks – art styles used, art genre studied, art language employed
7) Art theor/hist	Teacher set tasks – art theory covered/art history knowledge& concepts
8) Art/therapy	Teacher comments that art is used as therapy
9) Assessment/teach	Teacher comments about assessment procedures
10) Assist/stud/teach	Teacher assistance offered to students
16) Expression	Teacher set tasks – art is used to express something – art themes & concepts
17) Fam/comm	Teacher comments on family/school/community attitudes to art
28) Motivation	Teacher comments on level of student motivation to engage in art study/practice
30) Per/art/dev	Teacher comments about student art development & growth
36) Stu/acad/perf	Teacher comments about students academic performance
38) Syllabus	Views about the content or application of the syllabus
39) Teacher/artist	Teacher comments about self as artist
42) Teach/dialogue	Teachers dialogue during class
43) Teach/experience	Teacher comments about teaching experience
44) Teach/inter/art	Teachers comments about their own interest in art
46) Teach/meth/strat	Teacher comments on their use of methods and strategies
47) Tech/skills	Teacher set tasks– art techniques and skills practiced/taught
GROUP B. STUDENTS' VIEWS/ACTIONS – INCLUDES ATTITUDES, VALUES AND JUDGMENTS, LEARNING PROCESSES.	
2) Art/autonomy	Student comments about their artistic autonomy
4) Art success	Student comments about success/failures in art
5) Art/make/work	Student comments about the process of art making & the final product
6) Art/spec/mode	Student comments about art representing a special mode of operation
7) Art theor/history	Student views about art theory and history work
9) Assess/stud	Student views about assessment
10) Assist/stud/req	Student requests for assistance by students
11) Awar/cult/soc/	Student comments indicating awareness of cultural/social differences
12) Conf/Skill	Students comments indicating confidence in own artistic skills/talents
14) Des/teach/qual	Student comments about desired teacher qualities
15) Eval/Refin	Student evaluation or refining of own work
17) Fam/comm./stud	Students comments on family/school/community attitudes towards art subject

18) Fut/art	Student perceptions about their future as artists
19) Idea/opinions	Students' ideas and opinions expressed in class
21) Individuality	Student comments they feel a sense of individuality
24) Lesson/teach	Student comments on lessons or teacher's actions
25) Life experience	Student comments about life experience as it relates to art study
26) Life/benefits	Student perceptions about life benefits as a result of studying art
28) Motivation	Student is/is not motivated to engage in art study/practice
29) Originality	Student originality in art production
30) Per/art/dev	Student comments about their art development & growth
31) Per/val/art	Student value attributed to art by students
33) Purp/art/ed	Student views about purpose of art education
36) Stu/behav/resp	Student behaviour or response in class
GROUP C. COGNITIVE BEHAVIOUR/APPLICATION – STUDENT AND TEACHER COMMENTS ON FORMS OF THINKING	
13) Creativity	Creative ideas/creative products/creative process in art operations
20) Imagination	Imagination in art operations
22) Intell/Log/Critic.	Intellectual, logical and critical thinking in art operations
23) Lateral think	Lateral thinking in art operations
34) Prob/Solv	Problem solving in art operations
49) Vis/lit/think	Visual Literacy/Visual thinking in art operations
GROUP D. ENVIRONMENTAL FACTORS – STUDENT/TEACHER COMMENTS ABOUT CONTEXTUAL FACTORS THAT IMPACT ON ART STUDY	
27) Mat/equipment	Student & teachers comments about materials & equipment
35) Space/time	Student & teacher comments about qualities of physical space& scheduling
48) Texts/resources	Student & teacher comments on opportunities to use texts/visual resources

Reduction of Categories According to Qualitative Measures

The creation of macro theme groupings provided a valuable conceptual organisation of the whole body of the transcribed data. However, it still appeared that a number of the 49 categories were subject areas that seemingly had no clear semantic connection to critical and creative thinking. It was at this stage that it was decided further procedures should be applied to ascertain those categories that would prove most apposite to answering the research questions. This process could more effectively assist in

answering specific research questions if the overall number of concept categories were reduced to those that were, a) considered central to the research topic and b) those that appeared most often across different sets of transcripts. The reduction and identification of important categories was effectively achieved through applying a two-staged approach. Initially, a qualitative approach was used to assess how meaningful the categories were in terms of uncovering something about critical and creative thinking. Subsequently, quantitative measures were used to ascertain the frequency with which participants mentioned these same categories.

Creating Word Webs

The qualitative approach first involved creating word webs informed by literature sources on the topic of critical and creative thinking. Key words found in the literature as represented in the word webs were compared to the lexical table (5.2) and if anything was found to match that meant the category remained and would be considered in further analysis of the data. The two individual categories of critical (Code 22) and creative (Code 13) were clearly central to the research topic. These concepts were therefore used to create expanded word webs in a graphic format. The words and phrases included in these two word webs were based upon concepts mentioned in theories and descriptions of critical and creative thinking in a range of texts reviewed in Chapter 2 and 3. Upon examination of Figures 5.1 and 5.2 included in the following pages, there are reference details indicating the original authors of these words/concepts.

Figure 5.1 Word Web for Critical Thinking

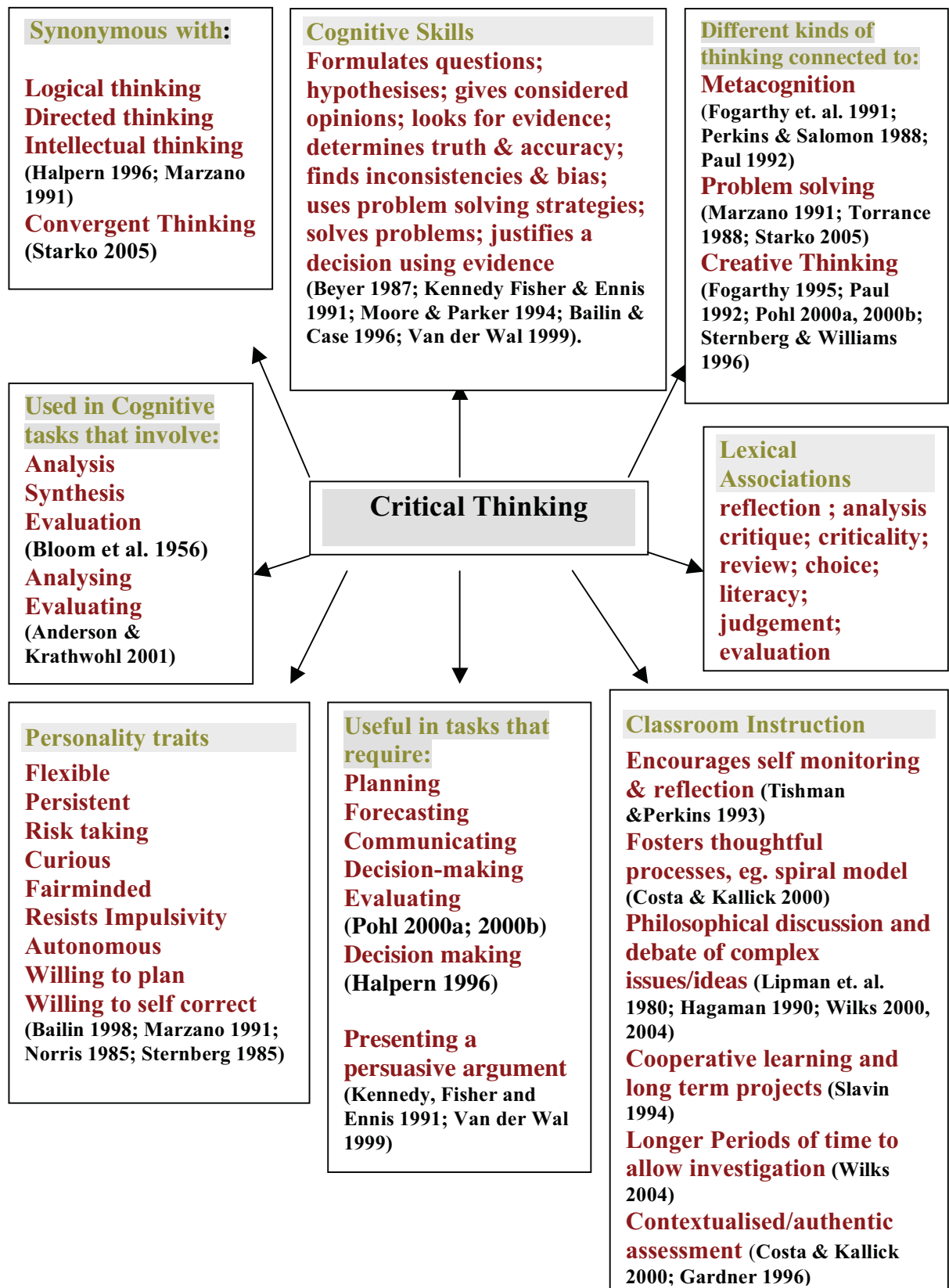
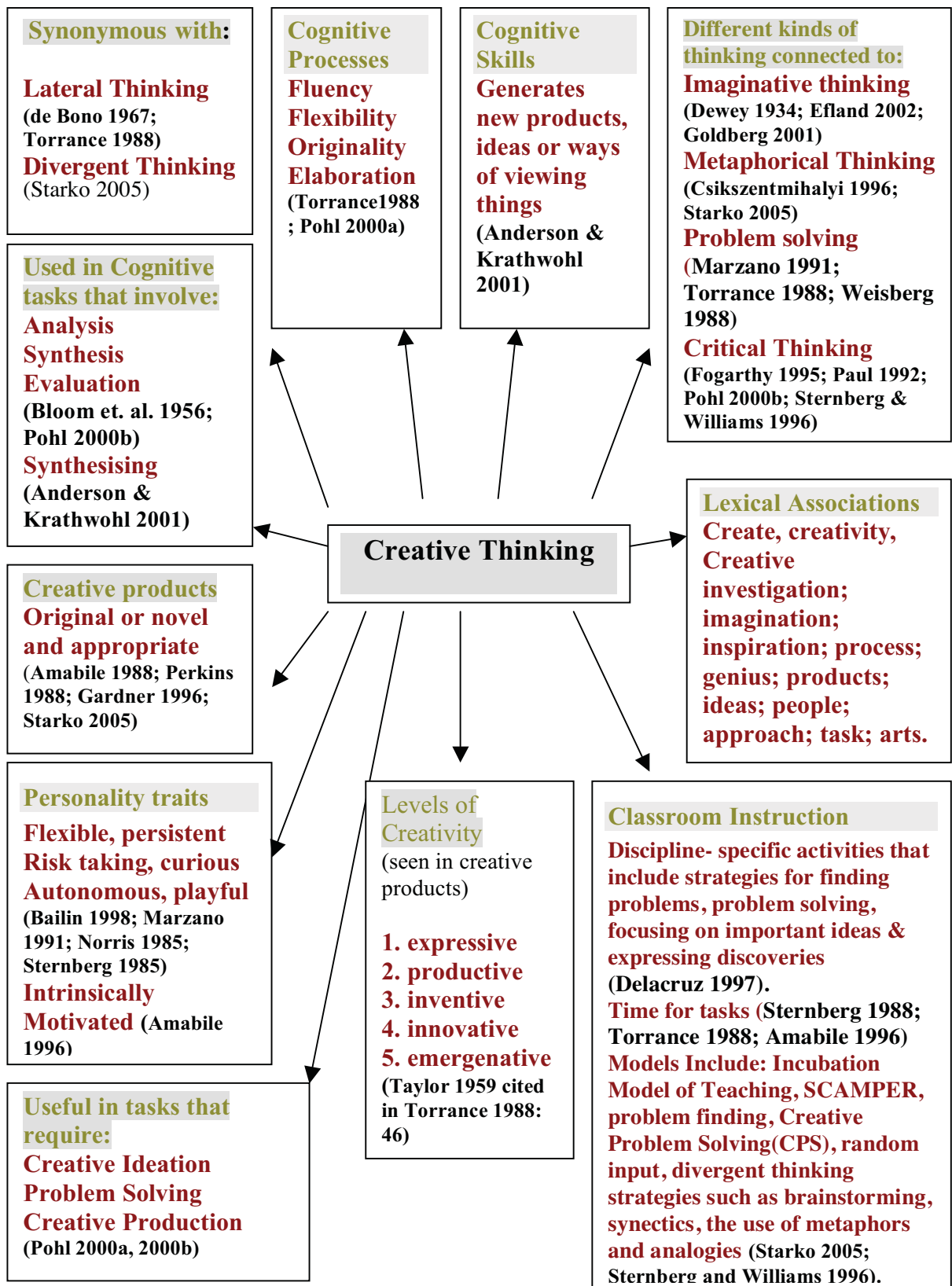


Figure 5.2 Word Web for Creative Thinking



Lexical Analysis of Categories

A process of semantic lexical analysis was applied to each of the category subject headings in order to find any key words that related to aspects of the research topic. The rationale for doing this was that it provided a principled way of deciding which of the original categories were optimal in terms of providing valuable information. The focus was to identify broad themes within the categories of data that related to critical and creative thinking.

Semantic lexical analysis relies on knowing the meaning of words and the relationships between them in order to make inferences about characteristics of a communication. The term semantics refers to the study of meaning and this is undertaken in various fields, such as, linguistics, philosophy, and semiotics. Linguistics semantics involves the study of meanings of words and sentences, their denotations, connotations, implications and ambiguities (McArthur 1998). Lexical semantics is one aspect of linguistic semantics and it is valuable in finding word relations (sense relations) by focusing on the word (lexical item) and lexical structures (McArthur 1998). There were many types of sense relations that are applied to semantic lexical analysis. There are, for example, hyponyms (subordinate or a 'part to whole' relationship of words), hyperonyms (superordinate or 'whole to part' relationship), homonyms or polysemy (words different in meaning but identical in form), antonyms (words that are opposite in meaning), synonyms (words that are similar in meaning), as well as collocations (words that commonly occur together) (McArthur 1998).

The methodology used allowed for the identification of broad concept categories that in turn condensed the number of items to be investigated into manageable and coherent units. Semantic connections were established by searching for five types of word relationships within concept categories. Some examples extracted from the data will illustrate this. In the context of a thought or action, the informants used ‘new’, ‘original’ or ‘creative’ with similar intentions of meaning as synonyms. In the context of the students’ styles of work the informants contrasted ‘autonomy’ and ‘dependence’ (antonyms). Under ‘teaching strategies’ (hyperonym) the informants included a range of activities such as ‘demonstration’, ‘dialogue’, ‘questioning’, and ‘lecture’. Both ‘printmaking’ and ‘painting’ (hyponyms) were types of activities the informants described in the context of discussions about artmaking in general. Words that informants frequently mentioned together were ‘academic’ and ‘performance’ or ‘visual’ and ‘imagination’ (collocations). The classifications of word relationships for all of the original 49 categories were formed into a table. A small sample of the first section of this table is shown in Table 5.3 on the next page. In the first column (that furthest to the left) the ascending numbers (1-49) represented the code number attached to each category as listed in alphabetical order. In the second column the category names were listed and in the third column the dictionary (Oxford Dictionary 1998) meanings of words that appeared in the individual categories were included. Different categories of word relationships appeared in the remaining four columns and these were: synonyms, antonyms, hyponyms and hyperonyms (in the same column) and finally collocations.

Table 5.3 Lexical Semantic Analysis of Categories: A Small Sample from the Full Table (Appendix IX)

NO.	Categories	Dictionary	Synonyms	Antinomy	Hyponyms & Hyperonyms	Collocations
1	Art Appreciation Art criticism	Appreciation: A favourable opinion about something. Criticism: A spoken or written opinion/judgment about what is wrong/bad about someone or something.	Art criticism: Critical appraisal Appreciation Valuing or Approving art	Disapproval Depreciation	Artefacts/ Appreciation Appreciation/ Understanding	Informed Fair Honest Critical Analysis/Analyse Evaluation Judgement
2	Artistic autonomy	Autonomy: Personal independence & the capacity to make decisions for oneself and act upon them.	Artistic freedom	Dependence Artistic restriction Lack of control	Autonomy/ Independence Independence/ own decision-making	Artistic freedom Autonomous judgement
3	Art styles, genres, language	Genre: One of the categories that artistic works can be divided into on the basis of form style, or subject matter. Painting depicting household scenes Style: Distinctive and identifiable appearance, form and content in an artistic medium Art Language: Form of Communication Mode of expression	Styles – Art approaches, features, Genres movements, classifications Categories Language – Art terms, techniques, vocabulary	N/A	Art concepts/style Movements/ Styles/Expressionism Styles/ Abstraction Genre/ Portraiture or Still Life	Artistic styles, stylistic movement, stylistic choice, art genres, art language, art concepts, expressive genre, historical genre,

Once this process of lexical analysis had been completed it was found that 30 of the 49 categories had clear relevance to the topic of critical and creative thinking because they had semantic lexical relationships that contained key words and phrases appropriated from the literature on the topic of critical and creative thinking. The rows for each of the categories identified as ‘relevant’ in Table 5.3 were shaded in grey. Those not shaded were considered peripheral to the research. The thirty categories most relevant to the research topic are included in Table 5.4 titled, ‘Thirty Select-Group Categories’. In Table 5.4 the right-hand column provides examples of key words and phrases that have a semantic lexical relationship to critical and creative thinking concepts and theories. These have been taken from the word webs – Figures 5.1 and 5.2 – and the Lexical Semantic Relationship Tables.

Table 5.4 Thirty Select-Group Categories: Codes Considered Relevant to the Subject of Critical and Creative Thinking

CATEGORY	EXAMPLES OF SEMANTIC LEXICAL RELATIONSHIPS
Art appreciation, art criticism	Critical thinking – analyse, synthesise, evaluate, critique, judge.
Artistic Autonomy	Creative thinking – creative expression, novelty/originality, innovation, risk-taking. Critical thinking – independent decision making
Art Making – Process & Product	Creative thinking – creating, creative process – preparation, incubation and revision, fluency, flexibility, imagination, creative product, Critical thinking – reflection, refining images/ideas, organization, decision making.
Art theory, Art history	Critical thinking – art investigation and analysis, understanding and application of the rules, principles, and social conventions.
Assessment	Critical & Creative thinking – analysis, judgement, evaluation.
Awareness of social and cultural differences in art	Critical & Creative thinking – questioning assumptions, suspending judgement, locating bias in cultural aesthetic, synthesis – comparing and evaluating features, informed perspective, finding relationships.
Confidence in own artistic skills & talents	Creative thinking – risk taking, perseverance, independence
Creative, Creativity	Creative thinking
Evaluating and refining work	Critical thinking – evaluate, appraise, judge. Creative Thinking – evaluate, solve problems, refine ideas.
Art expression	Creative Thinking – creative expression, create, communication. Critical thinking – interpretation, visual representation of thoughts and ideas
Student ideas and opinions	Creative & Critical thinking – mental thoughts, estimation, attitude, judgement, beliefs, perspectives, Critical Thinking - giving considered

	opinions, determining truth & accuracy
Imagination	Creative thinking – new, original, unique, imaginative ideas
Individuality	Creative thinking – values originality, freedom, and independence. Critical Thinking – self directed, autonomous.
Intellectual/Critical/Logical think.	Critical Thinking – logical reasoning, rational, reasonable, critical, abstract thought, disciplined
Lateral thinking	Creative Thinking – imaginative, non-conventional, non-linear
Student motivation (to engage in art)	Creative Thinking – intrinsic motivation, interest, Critical Thinking – engagement, focus
Student artistic development & growth	Creative & Critical Thinking – progress, change, self reflection, skills, knowledge, creative abilities
Personal Value Attributed to Art	Critical & Creative Thinking – curiosity, deliberate, sustained attention or focus. Creative Thinking – positive values, feelings, interests, appreciation.
Views about the purpose of education	Critical and Creative Thinking – attitudes, academic, intellectual status of art, judging effectiveness, cognitive goals
Problem Solving	Critical and Creative Thinking – problem solving, creative problem solving, identifying issues & problems
Space/Time (for art)	Creative Thinking – time for incubation, development and reflection of complex ideas, flexibility for teaming with others or individual to work alone and uninterrupted Critical Thinking – organisation, management, focus.
Student behaviour and response	Critical Thinking – thinking skills, intelligent/critical response. Creative Thinking – Creative response, creative action, demonstration of creative thinking behaviours, problem-finding
Syllabus	Critical and Creative Thinking – perspectives, frameworks, outcomes.
Teacher Critique, Criticism	Critical Thinking – critical questions, critical review, critical assessment.
Teacher Demonstration	Critical Thinking – alternatives, possibilities, information, implementing an idea or course of action, thinking aloud, organization. Creative Thinking – creating, creative action, creative possibilities, creative use of materials
Teacher dialogue	Critical and Creative Thinking – discourse, interpretation, critical questioning, motivation, critical enquiry – ‘What if’ questions, giving considered opinions.
Teaching Methods and Strategies	Critical and Creative Thinking – decision-making, evaluating, considering consequences, comparing alternatives, predicting consequences, justifying actions and reactions, thinking about own thinking.
Visual/written texts and resources	Creative Thinking – creative expression, written/visual communication of ideas, novelty, creative techniques & materials, creative response. Critical Thinking – clarifying information, locating bias, critical reflection and judgement.
Visual Literacy/Visual Thinking	Creative Thinking – sensory skills/response, visual perception, visual imagination. Critical Thinking – interpretation, criticism.

Comparative Analysis Across Different Sets of Data Transcripts

The qualitative assessment of meaningful categories was followed by a quantitative approach whereby the presence of a category and the percentage of dialogue (in terms of the total written interviewee dialogue contained in one interview session) associated with that category were calculated within each individual transcript. Only the thirty categories found to be semantically linked to the research topic were considered in these calculations. Commonly emphasised categories within the data transcripts that were also semantically linked to the research topic were deemed to be of interest in the further analysis of the data. Statistical information for each of the individual transcripts were then compared with other transcripts in different groupings to discover which of the categories were most emphasised by participants in the study. The twelve groupings are shown in Table 5.5.

Table 5.5 Groupings of Sets of Transcripts

All data across all case studies	All teacher interviews	All student interviews	All observation notes
All high school data	All high school teacher interviews	All high school student interviews	All high school observation notes
All primary school data	All primary school teacher interviews	All primary school student interviews	All primary school observation notes

Together the various transcripts provided a means to compare each case study site to determine unique aspects as well as commonality amongst participants and classrooms. The existence of a particular code or macro theme in any of the case study sites does not in itself reveal anything unique. A student's or a teacher's action or comment may well reveal an individual attitude or approach towards critical and creative thinking in the art classroom but determining which of these *across the whole of the study* were

particularly significant required a further level of analysis. As will be shown in Chapters 6 and 7, comparing and contrasting concept categories within and across case study data revealed a number of variations. For example, some were emphasised by students, some by teachers and others by the researcher. There were categories that appeared more frequently in the secondary school transcripts than in the primary school transcripts and vice versa. Furthermore, certain concept categories were agreed by all participants to contribute to the construction of a creative and critical thinking environment in the art classroom while only one individual mentioned others.

Code Tabulation

A simple ‘code tabulation’ was undertaken whereby the number of words associated with any particular code was totalled. When examined as a whole, different emphases on different conceptual codes across all the transcripts could be noted and compared to reveal significant commonalities or dissimilarities. Code tabulation was therefore undertaken for each transcript. All transcripts were examined and the number of words in each transcript associated with each code was tallied. Since each transcript was of a different length, the percentage of words associated with any one code was critical – not the total number. Consequently, for each transcript the number of words per code was compared to the total number of coded words in the transcript to determine a percentage value. Words within transcripts that were tagged as *null* were not included in the total count. There were variations in the percentage value attributed to each of the categories. However, the most emphasised categories were understood to be those that represented over 5% of the coded words within an individual transcript. A comparison of percentage values for each of the thirty remaining categories (after semantic lexical analysis was

applied) across each of the sets of case study transcripts indicated that twenty of these categories were emphasised (over 5% of total words) in at least one transcript. Furthermore, some categories were commonly emphasised within a transcript set (for example all high school teacher interviews) or across a number of transcript sets. However, none of the categories were commonly emphasised across all the case study data combined.

A comparison of statistical results obtained through calculating the frequency with which student and teacher participants mentioned things relating to the thirty concept categories revealed information relating to the research questions. Categories commonly emphasised by individual teachers, for example, could be contrasted and compared to the other teacher and student responses. In this way a comparison of different emphases by different participants and data sources provided a means to highlight what appeared to be unique approaches by teachers and students within the different case studies. Commonly emphasised concept codes for each of the twelve sets of transcripts that had also been identified as having a semantic connection to the research questions were tabulated in a list of tables that followed the format shown in Table 5.3. The complete list is included in the Appendices documents. A summary of all the results across the twelve different selected data sets are detailed in Table 5.6. The middle column in Table 5.6 titled, 'Emphasised Code Numbers' listed all the categories that were frequently mentioned by participants. A category was viewed as 'emphasised' because it appeared frequently throughout at least one written transcript. When the total amount of participants' words made up five percent or more of the total amount of written dialogue (for that transcript), the category was included in the list. The right-hand

column titled, ‘Emphasised Code Numbers Common to Every Transcript within the Data Set’ was a list of categories that also proved to be both over the 5% benchmark of frequency and common to all transcripts within that set.

Table 5.6 Emphasised Code Numbers

TRANSCRIPT SET	EMPHASISED CODE NUMBERS FOUND IN EACH TRANSCRIPT	COMMONLY EMPHASISED CODE NUMBERS COMMON TO EVERY TRANSCRIPT WITHIN THE DATA SET
All data across all case studies	1, 2, 5, 7, 13, 15, 22, 24, 28, 30, 31, 33, 35, 36, 38, 40, 41, 42, 46, 48	-
All secondary school data	1, 5, 7, 13, 22, 24, 28, 30, 33, 35, 36, 38, 40, 41, 42, 46, 48	-
All primary school data	1, 2, 5, 15, 24, 28, 30, 31, 35, 36, 38, 46, 48	1
All teacher interviews	1, 5, 7, 13, 17, 22, 28, 30, 35, 36, 38, 46, 48	30, 38, 46
All secondary school teacher interviews	1, 5, 7, 13, 22, 28, 30, 35, 38, 46	7, 13, 22, 30, 46
All primary teacher interviews	1, 28, 30, 35, 36, 38, 46, 48	1, 28, 30, 31, 35, 38, 46
All student interviews	1, 2, 5, 7, 15, 24, 30, 31, 33, 35, 40	1
All secondary school student interviews	1, 5, 7, 9, 19, 20, 21, 24, 25, 28, 30, 33, 40	1, 28, 30
All primary school student interviews	1, 2, 5, 15, 20, 24, 31, 35	1, 2, 5, 15, 31, 35
All observation notes	1, 5, 7, 35, 36, 40, 41, 42, 46, 48	36, 46
All secondary school observation notes	5, 7, 13, 22, 36, 40, 41, 42, 46	7, 22, 36, 41, 42, 46
All primary observation notes	1, 5, 35, 36, 46	1, 5, 36, 46

In summary, the categories included in Table 5.6 are those that were first tested and found relevant to the subject of research through a rigorous process of semantic analysis, and second, identified through applying quantitative measures as those that were emphasised (over 5% of words) within the transcript sets. The identification of commonly emphasised codes across different transcript sets allowed for a deeper analysis of responses and observations in relation to the research questions. In this context the research questions were re-examined to determine what aspects of

statements within commonly emphasised categories answered aspects of these questions. Research questions that related to teachers were matched with data that contained teacher information and similarly research questions that related to students were matched with data that contained student information. Emphasised categories within transcript sets were used to extract critical statements and information that helped answer questions about teachers and students.

Summary

This chapter has outlined the methodology adopted in this study. It has been explained that the research questions were exploratory in nature and required an inductive approach to research. The questions were premised on the notion that visual arts educators have to find and employ pedagogical resources within their own practice to facilitate the development of students' critical and creative thinking.

The adoption of an ethnographic case study approach and the triangulation of data gathered from different data sources were valuable ways to gain further understanding about the role of critical and creative thinking in the different visual arts classrooms. A multi-site case approach was adopted in order to take account of the issue of uniqueness and to deepen understanding of the phenomena under study (Miles & Huberman 1994). Fieldwork was conducted at four different sites and comprised observation of classroom activities and interviews with teachers and students of varying ages. Including multiple sites enabled issues emerging from one case to be compared and contrasted with issues from other cases. It was hoped that this would enhance not only the validity of findings but also contribute to the robustness of the understandings that were established. The

triangulation of data obtained from three different sources (teacher interviews, student interviews and observation notes) was aimed at deepening and widening the researcher's understanding of the topic. Conceptual development was facilitated through converging information from different data sources. Transcripts of each of the data sources were prepared, and by using a system of codes, words within each transcript were related to specific conceptual areas. Some words were also identified as having no relevance to the research questions. Thereafter, the relative emphasis on different conceptual codes within each data source was determined and compared. Finally, comparable areas of coded emphasis across specific transcript sets were highlighted to provide a means to locate comments and statements that were of specific value in answering the research questions.

2000; Bamford 2002). The chapter also examines the particular content and structure of NSW visual art syllabi used by teachers in the study. These syllabus documents reveal important ideas about the visual arts and how they can be used to develop critical and creative perspectives amongst students. They also have implications for the role of the teacher in fostering critical and creative inquiry.

The Development of a National Curriculum Profile for the Arts in Australian Schools

By early 1994, *National Curriculum Statements and Profiles* had been released for the arts, which encompassed the five subjects of dance, drama, media, music and the visual arts (art, craft and design). These creative arts subjects were designated as one Key Learning Area (KLA) amongst a total of eight Key Learning Areas. This was considered by some arts educators to be beneficial to the arts, because for the first time the arts became recognised as one of eight compulsory areas in the general curriculum. The perceived benefit of formal recognition within the core curriculum was somewhat offset by concerns amongst art educators that bundling the arts together as the ‘creative arts’ would mean educational administrators could potentially treat the arts as one subject and so reduce the time apportioned to each arts discipline (Emery 1998).

In 1994, the Curriculum Corporation published *The Arts: A Curriculum Profile for Australian Schools* as part of the *National Curriculum Statements and Profiles*. The document resulted from a joint project between States, Territories and the Commonwealth, initiated by the Australian Education Council. The collaboration produced sixteen documents – a statement and a profile in each of the identified eight

areas of learning; namely, English, mathematics, science, technology, languages other than English, health and physical education, studies of society and environment and the arts (Curriculum Corporation 1994). In developing these documents the respective ministers of education from the states and territories authorised a set of common educational goals for the Commonwealth of Australia. The agreed educational goals included learning outcomes that students were expected to achieve at different stages of their education. The outcomes-based model that was adopted specified the ways in which teachers should assess levels of development, progress and learning experiences throughout primary and secondary school systems (McPherson 1995).

The national curriculum profile for the arts recommended that they be divided into three learning strands. The first involved creating, making and presenting. The second encompassed arts criticism and aesthetics. The third strand required investigating and learning about past and present contexts (Curriculum Corporation 1994). These were to reflect the major elements of learning in all the arts including the visual arts. The three learning strands were further refined into five sub-strands for the visual arts. These were (i) making – skills, techniques and processes, (ii) creating – exploring and developing ideas, (iii) presenting, (iv) art criticism and aesthetics and (v) past and present contexts (Jane and Darby 1998). The recommendations for curriculum content and structure that appeared in the *National Statements and Profiles for the Arts* by-and-large were to inform the development of syllabus documents by each of the Australian States and Territories after 1994 (McPherson 1995).

The writers of the National Curriculum supported a culturally inclusive view of the arts and focused their awareness on the way that the arts embody different attitudes, opinions, values and beliefs within social systems (Grenfell 1993). The authors (Curriculum Corporation 1994: 15) state:

The arts are shared-meaning systems that are forms of communication. As such they are constructs of reality which carry values and have the capacity to evoke responses in others. The arts are never neutral but are the embodiment of values, opinions and selected constructs. The arts can be used to preserve and maintain tradition yet they can be dynamic agents of social change.

An emphasis on values and beliefs had the potential to allow teachers to raise important questions and lines of enquiry about the relationship between art and culture. The curriculum writers were laying the groundwork for curriculum reforms that promoted critical analysis and debate through acknowledging the important role of social construction of meaning in art. The message was clear that art was a subject area in which concepts and ideas remained open to contestation and change.

The content of the *National Statements and Profiles for the Arts* had also been influenced by theories about arts learning embedded within an emerging international arts education movement that began in the 1980s – the aesthetic education movement. The next section details some of the principles and ideas that influenced curriculum policy initiatives in Australia in 1994.

The Influence of Discipline Based Arts Education (DBAE) on the Formation of Learning Objectives

An outcome of the aesthetic education movement of the 1980s and 1990s was the formation of the *Discipline Based Art Education* (DBAE) model developed in North America (Walling 2000). This represented a new focus on art as a content-centred subject. Wilson (quoted in Walling 2000: 19) writes that,

DBAE builds on the premise that art can be taught most effectively by integrating content from four basic disciplines – artmaking, art history, art criticism, and aesthetics (the philosophy of art) – into a holistic learning experience.

The new focus on these ‘disciplines’ transformed instructional theory and practice in the visual arts in many schools. In relating the DBAE movement to the later formation of the Australian national arts education policy and even later development of individual State visual arts curricula, it is evident that the inclusion of distinct disciplines in the visual arts subject area was something that closely followed the DBAE model (Wilks 2000; Paris 2006).

Individual state syllabus documents were prepared in the years following the release of the *National Statements and Profiles for the Arts*. They varied in their interpretation and emphasis but essentially each incorporated the principles and concepts contained in the national arts education policy document. The emergence of elements of the DBAE approach in New South Wales’ visual arts curriculum (KG – Year 12) is significant to this study because this represented a more cognitive approach to art education.

The considerable influence of the DBAE model on the arts curriculum profile for Australian secondary schools meant that learning objectives were established for the DBAE disciplines of artmaking, art criticism and aesthetics, and art history. In New South Wales, however, the two DBAE strands – art criticism and aesthetics – retained the same distinct identities but were integrated to form just one discipline strand ‘art criticism/aesthetics’ in secondary syllabi (Board of Studies New South Wales 1997, 1999). This meant that altogether there were three rather than four separate visual arts discipline strands in the secondary school curriculum. While time is not prescribed for each of these three discipline strands, teachers are encouraged to evenly distribute time between them in their visual arts programs (Board of Studies New South Wales 1997,1999, 2000).

While NSW primary school arts curriculum still essentially follows a discipline-based structure it differs slightly from the DBAE model. The Australian arts curriculum policy document (Curriculum Corporation 1994) recommended that Australian primary arts curricula follow a simpler and more integrated structure. Subsequently, in New South Wales, the content of the primary visual arts course was formed around just two discipline strands, artmaking and art appreciation. Appreciation replaced the two DBAE discipline strands, criticism and aesthetics. In contrast to the DBAE model, which identifies art history as a separate discipline with distinct course content, the New South Wales primary syllabus (Board of Studies New South Wales 2000) incorporates the study of past and present social contexts of art within artmaking and art appreciation.

Overview of New South Wales Visual Arts Curriculum

New South Wales students currently take visual arts as a mandated subject from the start of primary school through to their second year of high school whereafter the subject becomes an elective. Table 4.1 below provides an overview of the sequence of the visual arts course from Kindergarten through Year 12.

Table 4.1 Overview of Visual Arts Stage 1- Stage 6 Syllabi (Board of Studies New South Wales 1999:8)

Primary Stages 1-3	Secondary Stages 4-5		Secondary Stage 6
Creative Arts K-6 Syllabus (2000)	Visual Arts 7-10 Syllabus (updated and reprinted 1997)		Visual Arts 11-12 Syllabus (1999)
Visual Arts	Mandatory 100 hr course generally done in Stage 4	Additional course generally done in Stage 5. Offered as 300-, 200-, or 100-hour course	Preliminary and HSC courses

Students who participated in the case studies undertaken for this thesis were either in Years 4, 5, 6, 7 or 10. The prescribed scope and structure of learning varied slightly according to the different syllabus documents used by each teacher. The first two columns in Table 4.1 outline the course structure for students involved in the study.

The primary students in the study were either Stage 2 (Year 4) or Stage 3 (Years 5 and 6) level students. They followed the Kindergarten to Year 6 creative arts syllabus (Board of Studies New South Wales 2000). Visual arts are one of four creative arts disciplines included in the same syllabus document. The K-6 creative arts syllabus came into effect a little more than a year before fieldwork in the study commenced. The Years 7 and 10 students worked within the guidelines of the Years 7-10 syllabus. Year

10 students in the study were engaged in the Stage 5 additional studies 200-hour course while Year 7 students were engaged in the Stage 4 100-hour course. A new 7-10 secondary syllabus was phased into schools in incremental stages over two years. In 2005 it was introduced to Year 7 and 9 students and in 2006 to Year 8 and 10 students. Though some revisions to the syllabus were undertaken between 1997 and 2006, changes to concepts, structure, learning outcomes and developmental paths were not significant.

The Visual Arts Curriculum in New South Wales Secondary Schools

In addition to the discipline strands, the secondary syllabi adopt an approach in which learning is structured around three key components – ‘practice’, ‘the conceptual framework’ and ‘frames’. These three key components and the relationships between them are described in the syllabus (Board of Studies New South Wales 1999) as represented in Figures 4.1 and 4.2. Furthermore, each of the three components are clarified in the syllabus through the designation of four sub-categories as shown in Figure 4.1.

While all three components remain a part of both the Years 7 – 10 and the Years 11 – 12 syllabi, a change of emphasis occurs as students make the transition between these stages. The course changes at the senior level such that there is more of a focus on exploring the inter-relationships formed between practice, frames and the conceptual framework. Figure 4.2 therefore illustrates this inter-relationship through the overlap of the three components.

Figure 4.1 Years 7-10 Course Structure, Adapted from Course Structure Rationale, Aim and Objectives (Board of Studies New South Wales 1999: 11)

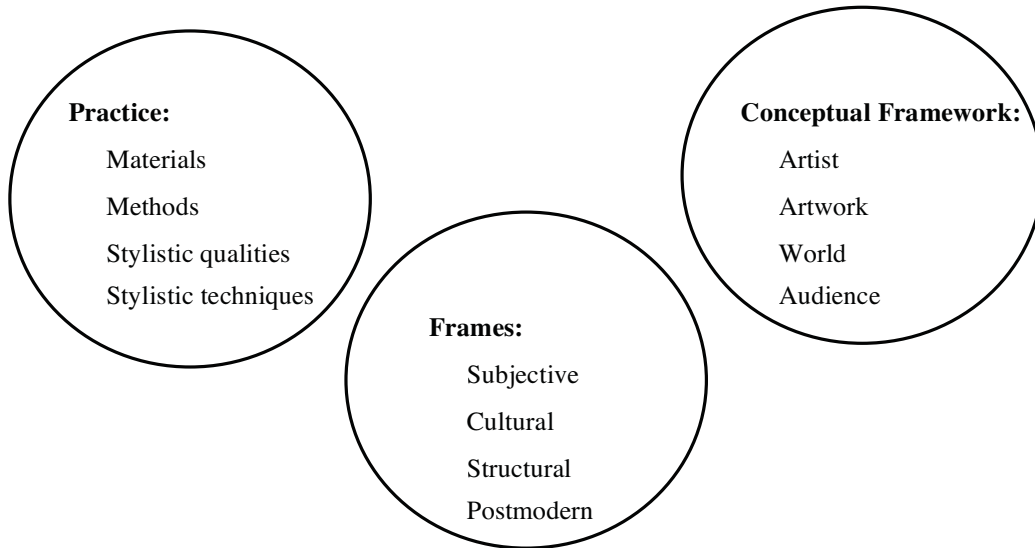
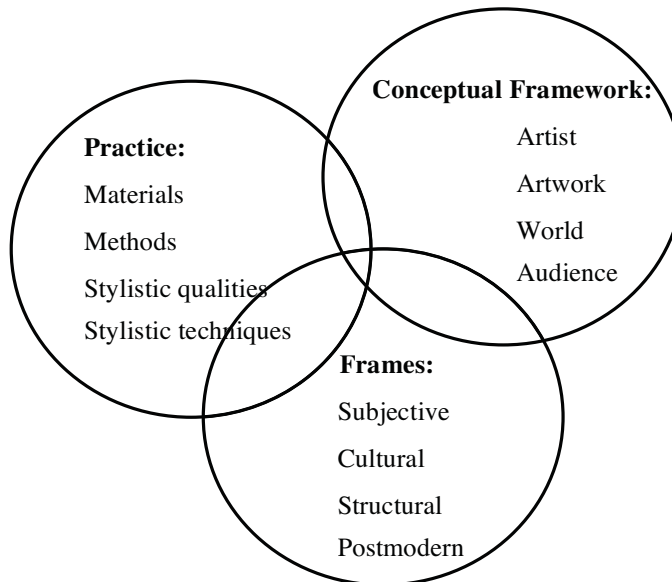


Figure 4.2 Years 11-12 Course Structure, Adapted from Course Structure Rationale, Aim and Objectives (Board of Studies New South Wales 1999: 11)



‘Practice’ denotes the exploration of conventions of artmaking activities as well as the conventions of practice within art criticism and history activities (Board of Studies New South Wales 1999). Artmaking trends and technologies used in the artworld are incorporated into students’ own artmaking projects. ‘Practice’ (artmaking) is an

important component of the Years 7-10 syllabus and the syllabus says that learning may entail, ‘exploring the potential of materials, methods, stylistic qualities and techniques’ (Board of Studies New South Wales 1997: 9). In the words of the syllabus (Board of Studies New South Wales 1997: 16) artmaking,

empowers students to actively engage in one of the primary forms of communication in contemporary society and provides them with a unique means of personal growth and development.

The second syllabus component – the Conceptual Framework – developed out of the theories of Freeman (Mills 2004: 6-7) and Danto (McKeon 2002: 101). This focuses students’ investigations of artworks around the role and function of artists, audiences, artworks and the world. Arthur Danto proposed an institutional theory of art that gave the notion of the ‘artworld’ a philosophical definition. As McKeon (2002: 101) states,

The artworld as configured by Danto constitutes a complete and exhaustive conceptual framework for accessing objects and images interpretively. Danto conceives of the roles and relationships of the artist, and audience, the nature of the artwork and the influence of the world.

The conceptual framework model used in the secondary syllabuses (Board of Studies New South Wales 1997, 1999) identifies the same entities – artist, artwork, world, audience – described in Danto’s institutional theory of art. However, the research and theories of the experimental psychologist, Norman Freeman are also thought to have been influential in forming this conceptual model (Mills 2004; Paris 2006). Freeman’s research in the area of art and learning investigates the relationship of language and belief in terms of how children verbalise their critical thinking about the art domain (Paris 2006). Freeman’s research led him to propose that a child’s conception of art was

filtered through a web or net of social relations (Mills, 2004; Paris 2006). A functional approach to art analysis, Freeman says, ‘dethrones the picture from a central position in favor of the mind’ (Freeman 2004: 360). His reasoning is that a picture does not literally do something because the pictorial properties of a picture have no causal effects upon the world except via agents who register these properties.

The third syllabus component – the Frames –include four different models students apply to investigations of artworks. The four frames provide subjective, cultural, structural and postmodern interpretive frames or lenses. Students are expected to learn about these four frames and how to use them at different times to adopt different points of view within artmaking, art criticism/aesthetics, and art history (Board of Studies New South Wales, 1999). Different frames support the generation of different kinds of questions and possible answers (Maras 1994). When used by art educators, the frames are supposed to help students to realise the variety of ways in which art can be known (Board of Studies New South Wales 1999).

Through integrating the three component strands of Practice, Conceptual Framework and Frames, students are able to use artworks as sources for expressing ideas through either written, verbal or artmaking activities. By using conceptual frameworks and the interpretive frames, students are encouraged to evaluate the role of the artist and his/her intentions by asking who, what, how and why type questions. This is thought to assist with their own artmaking by encouraging them to acknowledge their own intentions in what they make as artworks. In theory work, they are to consider the role and value of the audience, including art critics and historians, as critical consumers of art and how

this gives different meaning to artworks. They consider artworks as real objects and as representations of cultural, symbolic and critical interpretations of others' ideas. They also consider how interests in the world are represented – for example, how art, as a representation of ideologies, are presented (Board of Studies New South Wales 1999: 23-24).

Critical and Creative Perspectives in the Secondary Visual Arts Curriculum

The New South Wales secondary 7-10 syllabus (Board of Studies New South Wales 1997) effectively offers scope to promote critical thinking in the art classroom. Students are encouraged to become autonomous thinkers who can interpret and determine the purpose of artworks for themselves. Through interpreting and evaluating qualities in their own and others' artworks there is an expectation that students will seek reasons for, and provide evidence to support, their own responses to art. This can be performed in both formal (written work) and less formal (discussions) contexts. In discussions the defence of an opinion about art is important for developing critical thinking skills (Wilks 2004: 78). Through the application of the conceptual framework and the frames students learn to appreciate the fact that there may be diverging views in relation to art because they learn that there are multiple interpretive practices that can be applied to analysis, interpretation and evaluation of art. As the viewer of art, they are required to consider their own understanding of the properties of an artwork and reflect upon how close this understanding might be to what the artist originally intended to communicate. Furthermore, students learn that because their interpretation can be contested by others they are required to use evidence obtained from artworks to support their assertions about the meaning and value of an artwork. The fact that syllabus guidelines encourage

students to examine people's beliefs, values and lives in the context of art and the world means that the visual arts are given a multi-disciplinary focus. This allows for study and research to reach beyond the boundaries of the subject area. The emphasis on a conceptual model within the curriculum promotes an understanding of the complexity of art as a knowledge domain.

The word 'critical' appears frequently in the two syllabus documents reviewed in the study. By contrast, there are remarkably few references to 'creativity' in the Year 7-10 syllabus document (1997) and fewer still in the K-6 syllabus (2000). Weate (1996: 93-94) draws a comparison between the use of the word creativity in the former (1987) syllabus document and the new syllabus (introduced in 1994 and revised in 1997). She says that creativity and its cognates¹ appear a total of 22 times in the former syllabus, whereas, it appears only nine times in the 1994 syllabus. Two of the nine times it is used in the term 'creative arts'. Weate (1994: 94) attributes this change to a reduction in the importance and authority of the term. This reduction is thought to be deliberate, signalling a movement away from an expressionist model (see further Chapter 3) in arts education and acceptance of the DBAE model (Weate 1994; McKeon 1994). The shift away from the authority of creativity is also considered an aspect of the ascendancy of postmodern practice within art education (Weate 1996; Efland 2004; Freedman and Stuhr 2004). The creative precepts of uniqueness, originality and the individual are no longer highly regarded within the paradigm of the postmodern because they are too closely associated with modernist accounts of art (Weate 1993: 95).

¹ Creativity cognates, according to Weate (1996: 94) include the words 'create', 'creative', 'creatively' and 'created'.

While there may have been an avoidance of references to creativity by syllabus writers, it appears that in its place are frequent references to innovation, imagination, problems and problem solving (Board of Studies New South Wales 1997). The use of these terms implies that creative objectives are still important to learning in the visual arts but that there was a shift in thinking about the concept of creativity. Creative outcomes were now considered more likely to result from providing stimulating learning experiences and through developing knowledge, techniques and skills (Bamford 2002). The message appears to be that all students can be creative because creative thinking skills are teachable (McKeon 1994: 18)

Visual Arts Curriculum in New South Wales Primary Schools

In New South Wales, the draft creative arts syllabus was first tried in primary schools throughout the state in 1998 and the final version of the syllabus was released after a two-year trial and development phase in 2000. This was six years after the *National Curriculum Statements and Profiles for the Arts* (Curriculum Corporation 1994) and eleven years after the prior visual arts syllabus.

The new curriculum framework (Curriculum Corporation 1994) meant all creative arts disciplines were now integrated as one Key Learning Area (KLA). Consequently there was one syllabus document as opposed to the former situation in which there was a separate syllabus for art, craft and music and none for dance or drama. A further major change in the new syllabus was that teachers were expected to incorporate activities designed to teach art appreciation and this had not been a structural part of the 1989

syllabus (Department of Education New South Wales). The visual arts now had two learning strands – making and appreciating (Board of Studies New South Wales 2000). Teachers were also expected to consider social and historical perspectives in their planning and programming of making and appreciating (Board of Studies New South Wales 2000). Through both making and appreciating activities, teachers and students are encouraged to focus on the way thoughts and concepts can be represented in visual form as well as the way they can be interpreted and presented to an audience. Art appreciation is presented as a simpler and more foundational form of art criticism practised at secondary school level. Art appreciation places greater emphasis on student-centred critique and this is believed to be better suited to the developmental stages of younger children (Geahigan 1998: 14).

Student understanding of the influence of social agencies – ‘artists’, ‘artworks’, ‘audiences’ and ‘the art world’, concepts central to the secondary syllabuses (Board of Studies New South Wales 1997, 1999) – are also present in the primary syllabus document. This is made clear in the following statement of syllabus (Board of Studies New South Wales 2000: 10) aims:

In Visual Arts, students develop knowledge and understanding, skills, values and attitudes in *Making* and *Appreciating* by engaging with the concepts of artists, artworks, the audience and the world.

Bamford (2002: 45) comments that the K-6 (2000) syllabus places child art within the parameters of the art world and draws parallels between the two.

Critical and Creative Perspectives in the Primary Curriculum

The introduction of the primary syllabus in 2000 effectively expanded the scope for the development of thinking. Students were expected to observe, plan, create, reflect upon and evaluate artworks. Bamford (2002) states that the new syllabus represented a more cognitive approach to the subject. She says (2002: 45),

A more cognitive approach to art moved away from child models to reliance upon studying acclaimed art works as examples of best practice in the discipline.

In keeping with a more cognitive approach, primary students were encouraged to reflect upon how their own works may be connected to the work of others within the field of art. The new course content and structure allowed students to gradually develop an understanding of the place and value of the visual arts in society and culture at a personal, community, national and global level.

Within the new syllabus structure the process of making art remained an important focus but it was conceptualised as a design or problem solving process rather than a 'creative' process (Bamford 2002: 45). The teachers' role was to scaffold the problem solving process through providing training in art skills and techniques, choosing amongst art media and exposing children to examples of quality art. Bamford (2002: 45) says that the transition to a new cognitive problem solving approach made it difficult for many primary teachers who had been trained and often had school experiences themselves, during the expressionist era when the philosophy was to maintain the purity of child art.

The K–6 syllabus document (Board of Studies New South Wales 2000) contains various statements that indicate an orientation towards improving students' cognitive capacities. For example, the following excerpt (Board of Studies New South Wales 2000: 6) contains clear references to ways of thinking and working:

Students can interpret certain aspects of the world in their works, in novel, innovative and creative ways....Over time students can think about how works might generate different interpretations and how they may mean different things to the makers and the audiences....The approach also takes into account students' cognitive development and the critical role of the teacher in providing learning experiences that are suited to the students' abilities and developmental needs and interests.... By the time students have reached Stage 3, students are generally able to reflect upon their own activity.

The direct reference to cognitive development in the above extract is notable. The attention drawn to the role of teacher as an active agent in framing cognitive growth through the selection of learning experiences is also apparent. There is encouragement for engaging in learning experiences that lead to innovative and creative thinking – whether through art practice or art criticism. There is also reference to forming 'different interpretations' and to the fact that there may be multiple interpretations of artworks. Students may have to suspend judgment and consider a work's social purpose and meaning. This kind of activity suggests an orientation towards the application of critical thinking, as does the final statement in the extract: 'students are generally able to reflect upon their own activity'. The syllabus (Board of Studies New South Wales 2000: 11) states that art appreciation can be used to develop 'critical perspectives'.

Students can develop a critical perspective in their appreciation of the visual arts by discussing the properties of selected works and thinking about which is more effective and why.

Art appreciation at the primary school level involves students in investigations of artists' works through direct personal responses (Board of Studies New South Wales 2000). Personal response whether in written or spoken form, offers young students a degree of authority in their interpretation of meaning (Weate 1993). Geahigan (1998: 14) states that facilitating personal response to works of art within art appreciation is a means of getting students started on critical inquiry by helping them, 'to realize that the works they are studying present problems of meaning and value'. Students think about themselves 'as members of an audience' and also come to realise that there is no singular way meaning can be derived from artworks (Board of Studies New South Wales 2000: 11).

A Cognitive View of Art

Thus far, the discussion in this chapter has focused on curriculum changes that signalled a move towards a more cognitive view of art education. It is contended that in the 1990s national curriculum policy makers and the writers of the New South Wales school syllabus documents were responsible for introducing a discipline-based approach to teaching the subject. Within this discipline-based approach the student was viewed as a 'conscious critical individual' (Lovegren and Sten-Gosta, cited in Bamford 2002: 45). The curriculum changes encouraged the application of critical thinking skills in making and responding to art. The formation of The Frames, Agencies in the Artworld and Practices, in the New South Wales primary and secondary syllabi as concepts for learning, promoted the idea of critical engagement. This idea is also illustrated in the frequent use of the term 'critical' as well as 'analysis', 'evaluation', 'interpretation' and 'judgement' – all processes associated with critical thinking.

It has also been argued that the focus on critical thinking in the syllabus, to some extent resulted in a devaluing of creativity as a primary learning aim. Although the syllabus changes seem to reduce the value of creativity through a change of emphasis, there is no question that the development of creative skills remains an important rationale for the study of art. Creativity in artmaking is considered within the syllabus documents to result from carefully planned and sequenced learning activities that engage students in creative problem solving (Board of Studies New South Wales 1997, 1999, 2000). ‘Creative innovation’ is fostered through finding interesting and imaginative problems to solve and applying innovative practices and techniques in artmaking (Board of Studies New South Wales 1997). Artworks also are viewed as sources of creative inspiration and teachers are expected to carefully select exemplary models to stimulate students’ own creative ideas for artmaking (Board of Studies New South Wales 2000; Bamford 2002).

Undoubtedly, the curriculum concepts and syllabus strands described in this chapter have a significant influence on the practices and activities of art teachers. Teachers who were observed and interviewed for this study were expected to be familiar with the syllabus relevant to their situation and were required to design their teaching in a variety of ways to satisfy curriculum requirements. As this chapter has demonstrated, the syllabus documents clearly emphasise critical and creative thinking as an important element in art teaching. Exactly how teachers engage with critical and creative thinking practices is of course the primary research question of this thesis. In order to answer this

question, a particular methodology was adopted whereby specific teachers and students were interviewed and observed in their classrooms. Before turning to the presentation of this data, however, it is necessary to clarify the methodological approach used for this thesis. The next chapter therefore, outlines the methodological considerations that were significant for the collection and analysis of data and outlines the research design adopted for the study.

Chapter 5

Research Design

Deep understanding of a complex landscape will not be obtained in a single traversal. Similarly for a conceptual landscape. Rather the landscape must be crisscrossed in many directions to master its complexity and to avoid having the fullness of the domain attenuated (Spiro et. al. 1988: 6).

The chapter begins by outlining the reasons for the selection of a qualitative design framework for the study. A classroom based qualitative case study inquiry approach was believed to be an effective means of developing insights into teachers' and students' theoretical perspectives and practices in regard to the development of critical and creative thinking through art. Specifically, ethnographic case study methods were used to gather, analyse and triangulate significant data. Four different cases were included in the study and data was collected through observation records and interviews with teachers and students in these case groups. While this formed the broad parameters of the research approach, the researcher developed a unique set of procedures and tools as a way of addressing the research questions. This chapter presents information about: the researcher's participant role; sampling decisions; the purposes of thick description in establishing the generalisability of findings; data collection; choices in sorting and transcribing data; the process adopted for the reduction of categories; and comparative analysis of data through triangulation.

The Guiding Influences of a Qualitative Choice

The perspective taken in regard to the central research topic – the role of critical and creative thinking in visual arts pedagogies – is that one should not only think of these cognitive activities as qualities of thinking possessed by *individuals* but also as

interactive social projects that are often dependant on the quality of the social environment. In the context of schools, the people who contribute to the social environment are school administrators, principals, teachers and students. Qualitative methods were highly suited to the purposes of the study because they were able to address questions designed to provide a deeper understanding of social phenomena and to provide descriptions of social settings (Thurber 2004). My intention was not to test existing theory but rather to apply an inductive approach suited to theory building. In qualitative studies variables unfold as a result of the research process and so research rarely begins with a hypothesis (Thurber 2004). Such research considers phenomena as though it was happening for the first time and requires the researcher to suspend presuppositions (Hays 2002).

There is a high degree of flexibility in qualitative frameworks and this made it suited to researching social aspects of classroom life. The pluralistic methods used in qualitative inquiry were valuable in capturing the complex elements and processes of art teaching and generating theories about the way a group of experienced art teachers and their students conceptualised critical and creative development. The ability of qualitative methods to more fully describe a complex and dynamic phenomenon was an important consideration. The study of critical and creative thinking in the context of visual arts education is a complex undertaking because these are often hidden mental processes. They can only be identified through analysing the nature and quality of human communication and behaviour – speech, writing, actions and visual communication. It is also claimed in this study that as Amabile (1996) suggests, critical and creative thinking are somewhat dependent upon specific subject matter for their form. While the

underlying values and attitudes that underpin critical and creative thought may remain constant across school subjects, the knowledge and skill base required for critical and creative thinking varies from subject to subject. The strength of a qualitative methodology is that it was able to capture different viewpoints or perspectives in regard to what counts as critical and creative thinking in the visual arts domain. Furthermore, as a domain of knowledge, the visual arts offer aesthetic experiences that are essentially qualitative in nature and art enterprises are often investigative and exploratory (for example, see Eisner 2002). In studying the experience of learning in the visual arts it seemed appropriate to reflect these qualities.

Qualitative research is an umbrella term that spans a variety of research methodologies and practices. Some of the many qualitative research traditions that have been applied to education research include phenomenography, action research, symbolic interactionism and ethnography. An ethnographic case study approach was applied to this study and the next part of this chapter discusses the characteristic qualities of this research approach as well as its suitability for the research topic.

An Ethnographic Case Study Approach

Ethnography essentially is holistic research that is founded on the idea that properties within a social system cannot necessarily or accurately be understood independently of each other (Bresler 1998). In order to understand the unique properties of the system and how these interrelate, the researcher typically participates in that system for a period of time and conducts extensive fieldwork. Bresler (as cited in Thurber 2004: 497) described ethnographic research as an in-depth means of discovering shared

values, knowledge and practices of one culture or a specific group of people. Case studies similarly involve in-depth analyses of individuals, groups or settings and these can take the form of a single case, multiple case, and cross-site analyses (Thurber 2004: 497).

As a research design, the ethnographic case study approach allows for multiple methods of obtaining data in order to gain in-depth understanding of the teaching and learning processes that exist within different classroom populations. Since the focus of the study was to discover how visual arts pedagogies contributed to the development of critical and creative thinking during visual arts lessons, this approach appeared most relevant. Participants in each case organised or contributed to the teaching and learning environment in a way that was particular to that setting. A field based case study strategy was considered appropriate since it placed action and events in context. The researcher interviewed, observed, recorded and described the role of critical and creative thinking in different classroom settings – actions that are characteristically used for ethnographic case study methods (Bresler 1998).

Developing the four cases allowed the researcher to assemble a set of descriptive portraits or images. These images reflected teacher practitioners' theories and the value they ascribed to training critical and creative thinking through art. In addition, they reflected the way these theories and beliefs impacted on education practices in the classroom. While the four case studies could not possibly represent the realities of the broader field of art education they were able to capture some of the diversity that existed in art teaching practices in New South Wales schools. Spanning both primary

and secondary education the study involved specialist and non-specialist art teachers, students of different ages (an age span of approximately eight years from oldest to youngest) and incorporated different art curriculum components. It was anticipated that this would assist not only in understanding more about the pedagogical orientations in each case but also how these might encourage critical and creative work differently.

As is typical for ethnographic case studies, this study can be characterised as 'naturalistic'. In keeping with naturalistic enquiry methods, there was no attempt to influence the research setting since the intention was to focus on people and their regular activities (Patton 1990). However, the presence of an outsider naturally had a bearing on the behaviour of participants. The interaction between the researcher and participants was a two-way process and over the time of research, interpersonal understandings grew through regular encounters.

Researcher as Participant

During fieldwork the researcher tried to aim for a non-participatory stance but it was not always possible to remain a detached observer. The reason why non-participant observation was a preferred option was that it was perceived that the researcher's subject expertise and experience in visual arts could interfere with fieldwork. Apart from this concern there was an awareness of the fact that the visual arts by nature provide a very 'hands on' experience and there is often a strong demand for students to be given individual attention during art classes. This makes it difficult to maintain the clear mental and physical space required to observe both students and teachers. Burns (2000) points out case study researchers are rarely total participants or total observers

and this is true of the experience of fieldwork in this study. There was more than one occasion during class visits where this researcher was called upon to help in such ways as handing out materials to students, supervising the class if the teacher had to leave the room and helping individual students who sought assistance. In general however, the researcher signalled to others that she was purely there to observe. This was done through avoiding direct eye contact with students as much as possible, deflecting pleas for help by directing students toward the teacher, and using body language that suggested a preference for positioning oneself on the margins of classroom activity. There was some fluidity of movement, however, between remaining on the margins of activity and engaging directly with students and teachers. There were moments during lessons when there were opportunities to have quiet conversations with students and their teacher about what they were doing and planning.

Generalisability

The process of creating thick description was applied to field notes undertaken in this study. The concept of thick description is associated with ethnographic research (see further Geertz 1973, cited in Eisner 1994). Eisner (1994: 228) defines the meaning of thick description as follows: ‘thick description as opposed to thin description seeks to explicate the deep structure of social events, and the rules or modes that gives them order’. The logic behind employing thick description is that if more detail is provided by the researcher in descriptions of particular events, settings and various aspects of social existence, someone reading the account will have much more intimate understanding and appreciation of the relationships between social practices and the systems of meaning in a particular cultural milieu (Lindlof and Taylor 2002). Bresler

(1998) comments that providing thick description in qualitative research is essential as a basis for transferability of phenomena from one context to another at least to the extent to which the studied phenomena correspond to the reader's experience. Some transferability of understandings about phenomena may occur because in another similar context or situation it is possible to recognise certain characteristics or qualities that are described in the case study (McTaggart (1991)).

Sampling Decisions

As Lindlof and Taylor (2002: 122) point out, most qualitative studies are guided by purposeful sampling strategies. Schwandt's (quoted in Lindlof & Taylor 2002: 122) comments on the subject present a clear rationale for purposeful sampling.

Sites or cases are chosen because there may be good reason to believe that 'what goes on there' is critical to understanding some process or concept, or to testing or elaborating some established theory.

Similarly, for the purposes of this study it was important to select educational sites that would maximise opportunities to discover more about the role that critical and creative thinking played in visual arts education. For this reason it was the researcher's desire to discover rich centres of visual arts activity in schools. Teachers selected for the study had what could be described either as a 'passion' for, or a 'deep interest' in art and were experienced teachers. It appeared to the researcher that what actually went on in their classes would provide valuable data about variations in the role of critical and creative thinking in the teaching/learning process. As accomplished art teachers it was reasoned they were more likely to have developed effective ways of fostering critical and creative thinking through art.

The four case studies included class groups from different state schools situated in a regional/rural area in northern New South Wales. Two primary school and two secondary art classes were chosen. Such a selection provided a diversity of age and developmental levels – a student age spread of approximately eight years. The inclusion of a diversity of class age groups was thought to assist in exploring a range of circumstances and experiences amongst participants functioning at different levels within the school curriculum. The main rationale for the age spread was that it was considered likely that the role of creative and critical thinking in art classes shifted as students advanced through their schooling. Teachers would in all likelihood have different expectations of students' ability to learn and apply critical and creative thinking skills to art tasks due to their age level.

Whilst the aim was to have variation in student ages represented in the four cases, a decision was made not to include students who were at the extremities of age in the school population such as infants' grades (Kindergarten, Years 1 and 2) and the senior secondary grades (Years 11 and 12). There were a number of reasons for excluding these age groups. There was a concern that critical and creative thinking are complex and abstract concepts that very young students may not be cognisant of and may not have the vocabulary to articulate a viewpoint about in interviews. Involving senior students would have also been problematic for two primary reasons. Firstly, the learning program in New South Wales' schools typically follows a different pattern to the junior secondary years. Art teachers often work with their students on an individual basis while students do extended art projects and so there are fewer activities and dialogue

that involve the whole class group. This would have made it difficult for the researcher to observe patterns of class instruction and interactions within the class group. Secondly, formal assessment procedures, particularly in the Year 12 group, are demanding and there are times during the year when revision and testing occupy a great deal of classroom time.

There were obvious variations amongst each of the case study sites. The main variables were the students' ages and the syllabus documents used by the four teachers. Two teachers followed the New South Wales primary K-6 Creative Arts Syllabus (New South Wales Board of Studies 2000) and the other two teachers, the New South Wales Stage 4 and 5 (Years 7-10) Visual Arts Syllabus (New South Wales Board of Studies 1997).

Selection of Participants

Six main factors influenced the selection of teachers and schools for the study. Firstly, it was essential that teachers in each classroom were consistent. That is, in each case study the same teacher needed to be teaching on a regular weekly basis throughout the total period of observation. Secondly, all teachers selected had to show a willingness to participate in the study. Similarly, each of the school's principals had to give their permission to conduct the study. Thirdly, teachers were selected who would help incorporate samples of a range of class groups. Fourthly, teachers were selected because they had been recommended either by the creative arts education consultant working in the New England Regional Office of the New South Wales Department of Education and Training, or by teacher colleagues and/or school principals. They were

recommended because they had a passion and interest in teaching art. Fifthly, all the schools selected were situated within the New England region of Northern New South Wales as the proximity of site locations made data collection convenient. And finally, the position of teachers involved in the study represented typical arrangements for classroom instruction within either primary or secondary school staffing structures.

Participant Schools and Classes

As is shown in Table 5.1, two secondary schools and two primary schools in the New England district of northern New South Wales were selected to take part in the study. The four cases are numbered in Table 5.1 and are similarly described as Case 1, 2, 3 and 4 in the forthcoming Chapters 6, 7 and 8.

Table 5.1 Identification of Individual Case Samples

CASE STUDY 1 Secondary School	CASE STUDY 2 Secondary School	CASE STUDY 3 Primary School	CASE STUDY 4 Primary School
New England District	New England District	New England District	New England District
Specialist Art teacher Full time staff	Specialist Art teacher Full time staff	Generalist teacher Part time staff	Generalist teacher Full time staff
Year 10 Additional elective studies class.	Year 7 Mandatory class	Years 4, 5 and 6 Composite class	Year 4
Secondary Year 7-10 Syllabus Stage 5 level	Secondary Year 7-10 Syllabus Stage 4 level	Primary Creative Arts Syllabus Stage 2 & 3 levels	Primary Creative Arts Syllabus Stage 2 level

The two primary schools were of different sizes. One had over two hundred students while the other just over fifty students. The smaller of the two schools was situated near farmlands about 45 kilometres from the largest town in the region and the larger of the two primary schools was situated near the town centre.

The small primary school (Case 3) had a staff of two full-time teachers and one part-time teacher as well as a part-time Aboriginal teacher's aide. The classes were composite (multi-age) classes. The school principal of this school was also one of the full-time teachers and taught the Stage 2/3 (Years 4, 5 and 6) composite class. This class had twelve students of which eight were boys and four were girls. The teacher participating in this study came into the school two days a week as a release teacher for the principal and over those days she taught a range of subjects including an art lesson once a week (mid week) for approximately thirty minutes in the last period of the day.

The larger of the two primary schools (Case 4) organised classes according to homogenous age groupings so that each class represented one grade level. The class group chosen for this study was a Year 4 class with a total of 28 children in the class – 19 boys and 8 girls. Art class times usually varied such that there was no regular timetable slot. However, since it was necessary to establish a time each week for research visits, the teacher agreed to a more regular arrangement for art lessons. During the period of observation, art classes usually took between 45 and 90 minutes and were held mid week either immediately before or after lunch.

The two secondary school classes selected for the study were of approximately the same size and were in large state secondary schools. One of the case study classes (Case 2) was a Year 7 group (Stage 4 syllabus) who were enrolled in a mandatory studies art class. The other was a Year 10 class (Case 1) who were enrolled in an additional studies (Stage 5 syllabus) art class. This meant that the Year 10 students had selected to do

visual arts study voluntarily while the Year 7 students were undertaking art study as a required part of the core curriculum. The Year 7 class had twenty students – nine boys and eleven girls. The Year 10 class had 25 students – three boys and 22 girls. Both the Year 7 and 10 art classes were regularly scheduled each week and there were usually three periods of art every ten-day cycle for each class group. Art periods could last between 45 minutes (Year 7) and one hour (Year 10).

Participant Teachers

Of the four teachers selected as participants in the study, two can be described as generalist primary classroom teachers, whilst the other two were specialist visual arts secondary school teachers. This use of a *generalist* to teach the primary school creative arts curriculum versus a *specialist* for teaching individual secondary school arts disciplines reflects normal teaching practices in government primary and secondary schools in New South Wales.

In government secondary schools, art teachers are recognised as subject specialists; that is, they usually teach the one curriculum subject. Typically, they have completed an undergraduate bachelor degree in Fine Arts as well as postgraduate teaching qualifications incorporating secondary methods in visual arts pedagogy. A primary teacher on the other hand, is required to teach all six Key Learning Areas (KLA) in the primary curriculum. Creative Arts is identified as one KLA even though the term ‘Creative Arts’ in fact incorporates music, drama, dance and visual arts. Training in creative arts pedagogy is therefore just one of a number of curriculum studies that pre-service primary teachers are required to undertake in their undergraduate degree.

Commonly pre-service primary teachers are required to complete just one compulsory unit of study in Creative Arts education. As a study of the Creative Arts necessitates a multiple subject focus the amount of time that can be allocated to visual arts is often limited. Some primary teachers opt to do further in-service training in the Creative Arts to improve their knowledge and skills but this is on a voluntary basis and is not required by the New South Wales Department of Education.

The two secondary school teachers who participated in the study were full-time teachers who had taught art for many years. Both had experience teaching a wide range of ages from Year 7 through to Year 12. At the time that fieldwork commenced for this project, one teacher had been at her current school for just over a year and the other over five years.

The two primary school teachers who took part in the study had been teaching for many years. Neither of these teachers had any formal art training apart from their pre-service teacher training. One of the primary teachers had been involved in a few recent in-service art education workshops run by the New South Wales Department of Education. Both teachers were personally interested in art and enthusiastic about the subject and had been teaching in their respective schools for over five years. They were both recognised by their school colleagues and principals as having valuable subject expertise and they assumed responsibilities for art displays and exhibitions within the school.

Data Sources and Triangulation of Data

In the four case studies the main data sources were interviews and observation field notes. Interviews were conducted with teachers in each case study and with a sample of students from each class. In addition, extensive field notes, as well as informal conversations with individuals over a period of six to eight weeks, were undertaken with each class group. Furthermore, information gained from documents such as teachers' lesson plans, student artworks, and art textbooks were recorded in the field note journals.

An important aspect of data collection and analysis was the concept of triangulation. In this study the way triangulation occurred was through comparing transcripts of student interviews, teacher interviews, and field observations. Contrasts and similarities were noted between these to find a common explanation in regard to particular themes or issues relating to the research topic. While the use of triangulation in this study was valuable in finding more reliable explanations about the topic it was not aimed merely at validation. Triangulation of data also was aimed at deepening and widening the researcher's understanding of the topic. Conceptual development specifically in regard to the development of concept categories was facilitated through converging information from different data sources.

Observations and Field Notes

Observation visits were conducted over a one-year period beginning in early October 2002 and finishing in November 2003 for all four case studies. Each case study

involved site visits for the purpose of observation over one school term. This meant there were multiple observations of visual arts lessons in four separate schools for between eight (for secondary schools) and ten (for primary schools) weeks. Primary school class observations involved just one visit per week to attend the specific art lesson held at each school. On the other hand, visits to secondary school classes involved two to three class visits per cycle (ten days in a timetable cycle). Due to this variation in timetabling the total number of observation visits to each of the case study sites were very similar despite the reduction in weeks spent doing secondary school fieldwork. General notes of classroom events, as well as teacher and student behaviour were entered into a field diary during each visit and later transcribed. The researcher's attention in observation sessions was focused on the external behaviours that were indicative of critical and creative thinking amongst students. These journal notes were later prepared in typed manuscript form.

Interviews

As Burns (Burns 2000) suggests, interviews can be classified as either open ended (unstructured), semi-structured, or structured. Semi structured interviews were believed to be an appropriate method to use in the study because it allowed interviewees to voice their own analysis of observed events and activities. In keeping with the semi-structured method, an interview guide was designed prior to teacher and student interviews (see Appendices Documents IV and V). Having questions prepared worked to enable consistency of focus across all the interviews while allowing opportunities for interviewees to venture into areas or topics not previously anticipated. Lindlof and Taylor (2002: 195) state that when using an interview guide, 'the researcher has the

freedom to ask optional questions or go down an unexpected conversational path' and he or she can also 'reshuffle topics and questions in order to find the best fit'. Lindlof and Taylor distinguish between the informality of an interview guide as opposed to the formality of an interview schedule. According to Lindlof and Taylor (2002: 194-195), the interview schedule is designed so that 'all interviewees hear roughly the same questions in the same way' and it 'stresses standardisation of the method'.

The use of an interview guide rather than a questionnaire meant there was no fixed or standardised structure and sequencing of questions and there were opportunities to probe interviewees' initial responses by asking further questions. The flexible nature of the questioning process gave interviewees some sense of empowerment in the interviews. It allowed them to bring forward information they felt was relevant to discussion topics. The interviewees were also able to reflect upon previously observed lessons and consider the kinds of cognitive behaviour and strategies that might have been fostered on different occasions. It also allowed the researcher to probe answers to certain questions to develop a more in-depth understanding of the ideas, issues and concepts raised.

Student and teacher interviews took place in school grounds and were recorded with the permission of the informants. In each case study site interviews were scheduled near the end of the period of classroom visits. This was important, as the quality and depth of the responses were likely to improve when a rapport had been established with the researcher. In interviews it was also possible to draw on recent class events and activities to prompt students and teachers to recall how and why they did certain things

during art classes. Interviews with teachers and students were recorded using an audio recording device and then later prepared as typed transcripts.

Student Interview Procedures

Only a small sample of students from each class was involved in interviews. It was impossible to involve all students in each class in the interviews and not all students consented to being interviewed. The logistics of interviewing large numbers of students would have extended the research period well beyond the time allocated for each case study. A total of eighteen students from all four sites were interviewed. The least number of students interviewed at any one school was four, while the greatest was six. Each student interview session lasted between 30 and 45 minutes. However, no restriction was placed on time allocated for interviews. A trial interview session was conducted with one student in the first case study although the transcript data was not used in case analysis. Subsequently, another interview session was conducted at the same case study site involving two students. The students had volunteered to be together for the interview. The interview was successful and free flowing because having an, 'interview buddy', seemed to give the younger students confidence. There were also opportunities for students to listen and respond to each other and this established a more relaxed mode of discourse. In contrast the negative effects of interviewing students in pairs had to be considered. In some respects the presence of a peer may have influenced the sort of information each student was willing to share with the researcher. Furthermore, student dialogue may have 'followed suit' on some occasions because one student was inclined to follow the lead of a more dominant peer and thereby echo the same response to questions. Nonetheless, after weighing up the

positives and negatives of pairing students, it was decided that all interviews would include two students.

Prior to starting each interview, the students were told a little about the format of the interview. Student participants were also told that they could ask to leave the interview and return to their class at any time if they were not comfortable with the questions. Interviews with students were always conducted within close proximity to either their teacher or another adult school staff member.

Teacher Interview Procedures

One interview was conducted with each participant teacher in the final week of fieldwork visits. This ensured that I had the same degree of experience of teachers' classroom work upon which to orient the interview. Each teacher interview varied from 25 minutes to 60 minutes. The variation in time was a result of factors, such as, available break times in the school schedule and the level of teacher receptiveness to being interviewed. There were also very brief informal non-taped discussions with the teachers before, during and after classes. Notes about these discussions were entered immediately at the end of observation periods in a fieldwork journal. These informal discussions formed an important part of the dialogue between teachers and myself as teachers would sometimes critique or reflect on lessons.

Analysis Process

No single method of analysis should necessarily be applied to a case study. However, content analysis has been commonly associated with this method (Tesch 1990). Content

analysis has had a long tradition in sociology but qualitative forms emerged much later than quantitative content analysis (Tesch 1990: 25). Content analysis is widely used in social research because it can be applied to examine any piece of writing or recorded communication.

In this study, content analysis allowed the researcher to look directly at communication – the central aspect of social interaction – and in so doing helped identify the focus or communication trends of individuals in each case. The use of semantic lexical analysis procedures within content analysis assisted in forming semantic connections between concept categories and critical/creative thinking. Semantic lexical analysis relied on knowing the meaning of individual words and how the meanings of individual words combined to form the meaning of groups of words. Words associated with the core categories were compared against complex word webs established for critical and creative thinking constructs. These word webs were derived from the earlier literature review.

A grounded theory approach to content analysis was used, in keeping with the inductive nature of ethnographic case study methods. Therefore, concepts or categories were not prepared prior to sorting, coding and analysing the data collected. A deeper analysis of all transcripts provided a means to examine each case study to identify key approaches, opinions and activities. This analysis necessitated a thorough preparation of transcripts. Consequently, transcripts of interviews and observation notes were prepared in documents with each line numbered for easy reference. Line numbers provided a simple system for locating specific segments of text within each transcript.

Sorting Data

During reading and a subsequent re-reading of all the interview and observation data, single sentences and larger chunks of data were highlighted and marked with comments in the margins of each page. All data was accounted for during these readings and short descriptive titles were written into the margins of transcript pages. In general, within the interview data these initial categories could be described as being connected to informants' feelings, thoughts and opinions in relation to their general experience of studying or teaching art.

Categories were 'tagged' in four distinct ways. Firstly, those portions that did not appear to have any bearing or relation to the research questions were tagged as 'Null'. Secondly, teachers or students sometimes mentioned key words during interviews and these were taken as the tag for that statement. For example, the key word 'creativity' was mentioned by teachers when they made comments such as, 'I think that *creativity* comes from the motivation for why we even exist' or '*creativity* is in all of us'. By contrast, in the third method for determining a tag, the researcher tried to encapsulate the essence of what was being said using words and terms that were not directly mentioned. For example, the category, 'student artistic autonomy' was clearly implied when participants said such things as, 'more free choices' and 'if we could do what we wanted instead of what we are told' in regard to their artmaking activities. Finally, tags were also chosen as synonyms for other words mentioned by either teachers or students. For example, the category 'art criticism' was only directly mentioned twice in all of the teacher and student transcripts but teachers also used other descriptors when they said,

‘they [students] don’t like to have to make judgements [about artworks]’ or ‘analysing art is a rigorous intellectual exercise’. In these instances the words *judgements* and *analysing* were read and understood as synonyms for art criticism because these words denote different phases in criticism. The *ArtLex Art Dictionary* states, ‘Interpretation or judgement is a stage in the work of art criticism following the describing and analysing of an artwork, in which one identifies the work's expressive qualities, or the meaning, or the mood, or idea communicated to the viewer’ (<http://www.artlex.com/> accessed 12th October 2007). Judgement is also recognised as a key aspect of art criticism in the secondary syllabi as is illustrated in the following quote: ‘Judgement plays a prominent role in art criticism in terms of arguing a case about the qualities of an artwork or an issue or event of some significance...’ (Board of Studies New South Wales 1999: 21).

Observation data was also subject to the same process of sorting and tagging as interview data. Many of the same categories that appeared in the interview data also emerged in observation data. In general, within the observation data the initial categories formed could be described as being connected to informants’ dialogue exchanges, their behaviour and actions as well as class events and innovations. Following the identification of initial tags a review process was undertaken to identify similarities amongst them. This helped gain an overview of the data and resulted in the recombination of themes or concepts into larger conceptual units. The lists of tags for interview and observation data were checked thoroughly. It was discovered that many themes or concepts in both student and teacher list tables, although labelled differently,

were conceptually similar. For example, those related to art appreciation could be collapsed into one. At first art appreciation had been tagged within three separate categories – art appreciation and the connections to art making; art appreciation and the study of other artists; and art appreciation exercises. These three categories could easily be absorbed into the single generic category of ‘art appreciation’. A list of 49 categories resulted from this process and these were placed in alphabetical order according to the first letter in the category tag.

Macro Thematic Groupings of Codes

The list of tags represented a significant number of thematic categories within the interview and observation transcripts. Individual categories were grouped into larger ‘macro concept’ groups. Macro concept groups were then developed through comparing categories to see how they could be applied to the three main lines of enquiry within the research topic – teachers’ perspectives and practices, students’ perspectives and practices and contextual scheduling/resources factors. As shown in Table 5.2, four macro thematic headings were chosen. These were: A) Teachers’ Views and Actions, B) Students’ Views and Actions, C) Cognitive Skills and Behaviour and D) Resources and Environmental Factors. The four macro thematic groups were allocated yellow, orange, green and maroon colour codes as appears in each header in Table 5.2. Colour highlighting matching these colours was then added to all transcripts to identify which lines were associated with particular macro themes.

Table 5.2 Macro Themes Emerging Through Data Analysis

GROUP A. TEACHERS' VIEWS/ACTIONS – INCLUDES ATTITUDES, VALUES AND JUDGMENTS, TEACHING METHODS.	
1) Art Apprec/critic.	Teacher set tasks – art appreciation (primary), art criticism (secondary) tasks
3) Art styles/genre/lang	Teacher set tasks – art styles used, art genre studied, art language employed
7) Art theor/hist	Teacher set tasks – art theory covered/art history knowledge& concepts
8) Art/therapy	Teacher comments that art is used as therapy
9) Assessment/teach	Teacher comments about assessment procedures
10) Assist/stud/teach	Teacher assistance offered to students
16) Expression	Teacher set tasks – art is used to express something – art themes & concepts
17) Fam/comm	Teacher comments on family/school/community attitudes to art
28) Motivation	Teacher comments on level of student motivation to engage in art study/practice
30) Per/art/dev	Teacher comments about student art development & growth
36) Stu/acad/perf	Teacher comments about students academic performance
38) Syllabus	Views about the content or application of the syllabus
39) Teacher/artist	Teacher comments about self as artist
42) Teach/dialogue	Teachers dialogue during class
43) Teach/experience	Teacher comments about teaching experience
44) Teach/inter/art	Teachers comments about their own interest in art
46) Teach/meth/strat	Teacher comments on their use of methods and strategies
47) Tech/skills	Teacher set tasks– art techniques and skills practiced/taught
GROUP B. STUDENTS' VIEWS/ACTIONS – INCLUDES ATTITUDES, VALUES AND JUDGMENTS, LEARNING PROCESSES.	
2) Art/autonomy	Student comments about their artistic autonomy
4) Art success	Student comments about success/failures in art
5) Art/make/work	Student comments about the process of art making & the final product
6) Art/spec/mode	Student comments about art representing a special mode of operation
7) Art theor/history	Student views about art theory and history work
9) Assess/stud	Student views about assessment
10) Assist/stud/req	Student requests for assistance by students
11) Awar/cult/soc/	Student comments indicating awareness of cultural/social differences
12) Conf/Skill	Students comments indicating confidence in own artistic skills/talents
14) Des/teach/qual	Student comments about desired teacher qualities
15) Eval/Refin	Student evaluation or refining of own work
17) Fam/comm./stud	Students comments on family/school/community attitudes towards art subject

18) Fut/art	Student perceptions about their future as artists
19) Idea/opinions	Students' ideas and opinions expressed in class
21) Individuality	Student comments they feel a sense of individuality
24) Lesson/teach	Student comments on lessons or teacher's actions
25) Life experience	Student comments about life experience as it relates to art study
26) Life/benefits	Student perceptions about life benefits as a result of studying art
28) Motivation	Student is/is not motivated to engage in art study/practice
29) Originality	Student originality in art production
30) Per/art/dev	Student comments about their art development & growth
31) Per/val/art	Student value attributed to art by students
33) Purp/art/ed	Student views about purpose of art education
36) Stu/behav/resp	Student behaviour or response in class
GROUP C. COGNITIVE BEHAVIOUR/APPLICATION – STUDENT AND TEACHER COMMENTS ON FORMS OF THINKING	
13) Creativity	Creative ideas/creative products/creative process in art operations
20) Imagination	Imagination in art operations
22) Intell/Log/Critic.	Intellectual, logical and critical thinking in art operations
23) Lateral think	Lateral thinking in art operations
34) Prob/Solv	Problem solving in art operations
49) Vis/lit/think	Visual Literacy/Visual thinking in art operations
GROUP D. ENVIRONMENTAL FACTORS – STUDENT/TEACHER COMMENTS ABOUT CONTEXTUAL FACTORS THAT IMPACT ON ART STUDY	
27) Mat/equipment	Student & teachers comments about materials & equipment
35) Space/time	Student & teacher comments about qualities of physical space& scheduling
48) Texts/resources	Student & teacher comments on opportunities to use texts/visual resources

Reduction of Categories According to Qualitative Measures

The creation of macro theme groupings provided a valuable conceptual organisation of the whole body of the transcribed data. However, it still appeared that a number of the 49 categories were subject areas that seemingly had no clear semantic connection to critical and creative thinking. It was at this stage that it was decided further procedures should be applied to ascertain those categories that would prove most apposite to answering the research questions. This process could more effectively assist in

answering specific research questions if the overall number of concept categories were reduced to those that were, a) considered central to the research topic and b) those that appeared most often across different sets of transcripts. The reduction and identification of important categories was effectively achieved through applying a two-staged approach. Initially, a qualitative approach was used to assess how meaningful the categories were in terms of uncovering something about critical and creative thinking. Subsequently, quantitative measures were used to ascertain the frequency with which participants mentioned these same categories.

Creating Word Webs

The qualitative approach first involved creating word webs informed by literature sources on the topic of critical and creative thinking. Key words found in the literature as represented in the word webs were compared to the lexical table (5.2) and if anything was found to match that meant the category remained and would be considered in further analysis of the data. The two individual categories of critical (Code 22) and creative (Code 13) were clearly central to the research topic. These concepts were therefore used to create expanded word webs in a graphic format. The words and phrases included in these two word webs were based upon concepts mentioned in theories and descriptions of critical and creative thinking in a range of texts reviewed in Chapter 2 and 3. Upon examination of Figures 5.1 and 5.2 included in the following pages, there are reference details indicating the original authors of these words/concepts.

Figure 5.1 Word Web for Critical Thinking

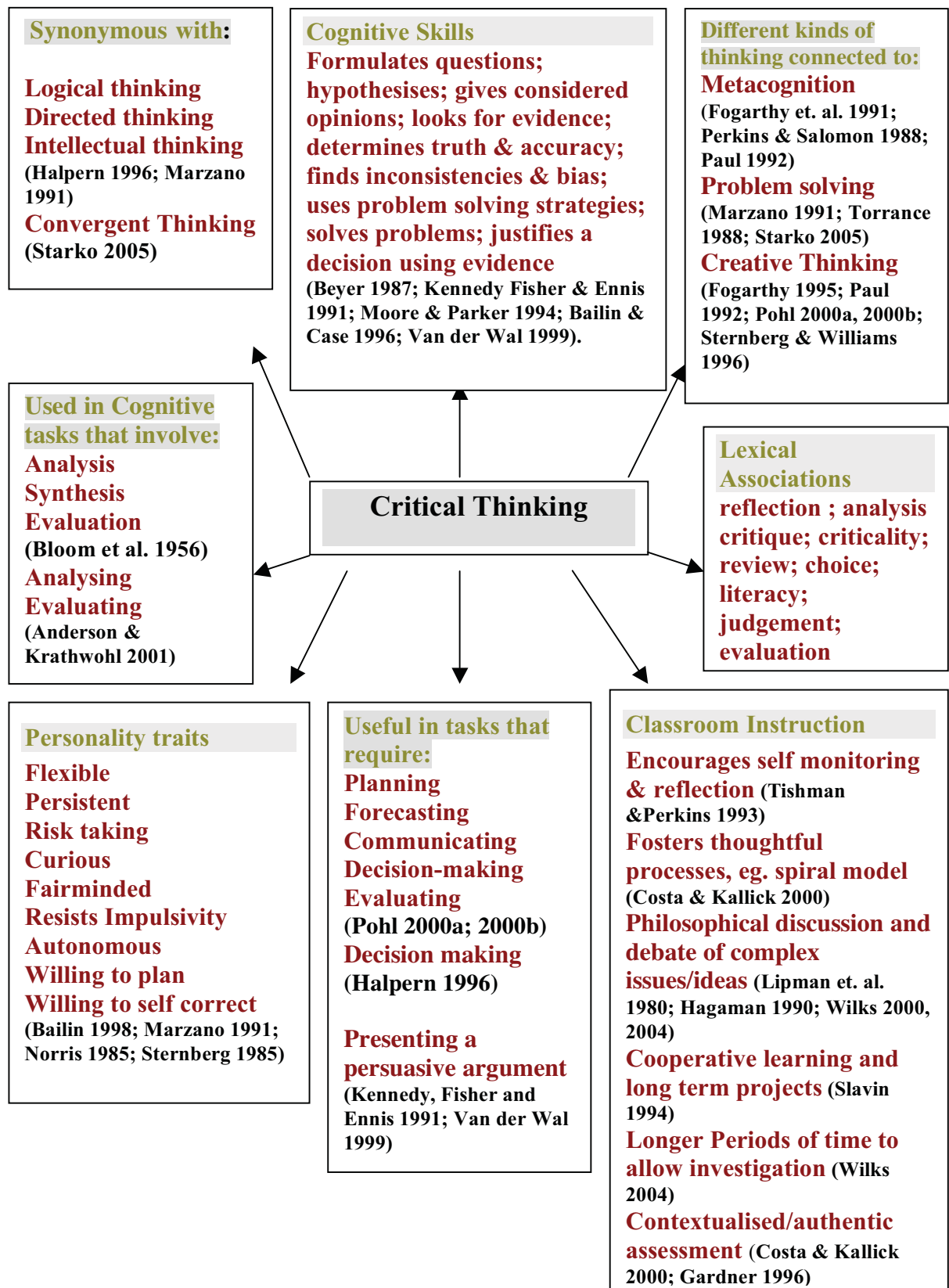
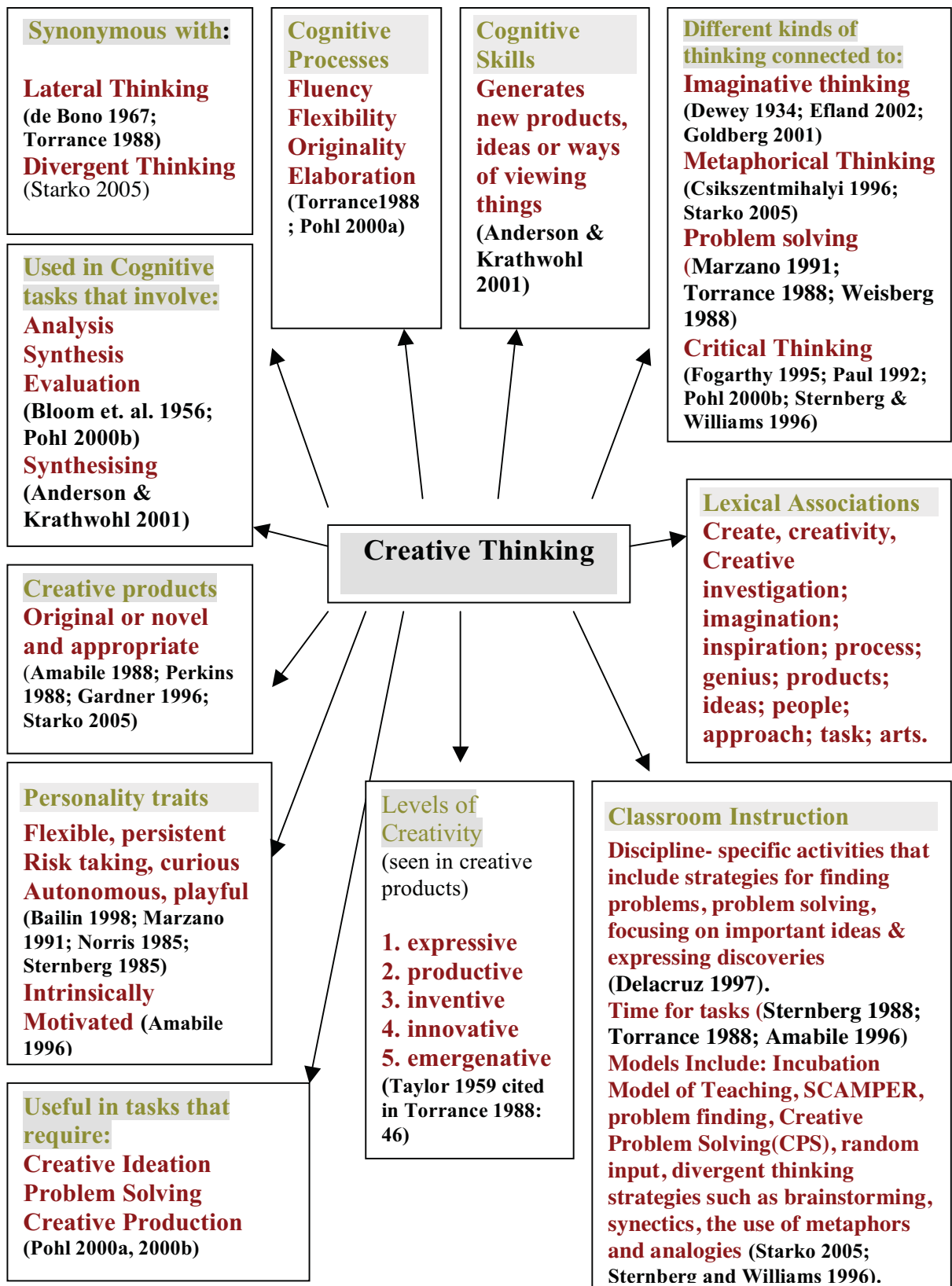


Figure 5.2 Word Web for Creative Thinking



Lexical Analysis of Categories

A process of semantic lexical analysis was applied to each of the category subject headings in order to find any key words that related to aspects of the research topic. The rationale for doing this was that it provided a principled way of deciding which of the original categories were optimal in terms of providing valuable information. The focus was to identify broad themes within the categories of data that related to critical and creative thinking.

Semantic lexical analysis relies on knowing the meaning of words and the relationships between them in order to make inferences about characteristics of a communication. The term semantics refers to the study of meaning and this is undertaken in various fields, such as, linguistics, philosophy, and semiotics. Linguistics semantics involves the study of meanings of words and sentences, their denotations, connotations, implications and ambiguities (McArthur 1998). Lexical semantics is one aspect of linguistic semantics and it is valuable in finding word relations (sense relations) by focusing on the word (lexical item) and lexical structures (McArthur 1998). There were many types of sense relations that are applied to semantic lexical analysis. There are, for example, hyponyms (subordinate or a 'part to whole' relationship of words), hyperonyms (superordinate or 'whole to part' relationship), homonyms or polysemy (words different in meaning but identical in form), antonyms (words that are opposite in meaning), synonyms (words that are similar in meaning), as well as collocations (words that commonly occur together) (McArthur 1998).

The methodology used allowed for the identification of broad concept categories that in turn condensed the number of items to be investigated into manageable and coherent units. Semantic connections were established by searching for five types of word relationships within concept categories. Some examples extracted from the data will illustrate this. In the context of a thought or action, the informants used ‘new’, ‘original’ or ‘creative’ with similar intentions of meaning as synonyms. In the context of the students’ styles of work the informants contrasted ‘autonomy’ and ‘dependence’ (antonyms). Under ‘teaching strategies’ (hyperonym) the informants included a range of activities such as ‘demonstration’, ‘dialogue’, ‘questioning’, and ‘lecture’. Both ‘printmaking’ and ‘painting’ (hyponyms) were types of activities the informants described in the context of discussions about artmaking in general. Words that informants frequently mentioned together were ‘academic’ and ‘performance’ or ‘visual’ and ‘imagination’ (collocations). The classifications of word relationships for all of the original 49 categories were formed into a table. A small sample of the first section of this table is shown in Table 5.3 on the next page. In the first column (that furthest to the left) the ascending numbers (1-49) represented the code number attached to each category as listed in alphabetical order. In the second column the category names were listed and in the third column the dictionary (Oxford Dictionary 1998) meanings of words that appeared in the individual categories were included. Different categories of word relationships appeared in the remaining four columns and these were: synonyms, antonyms, hyponyms and hyperonyms (in the same column) and finally collocations.

Table 5.3 Lexical Semantic Analysis of Categories: A Small Sample from the Full Table (Appendix IX)

NO.	Categories	Dictionary	Synonyms	Antinomy	Hyponyms & Hyperonyms	Collocations
1	Art Appreciation Art criticism	Appreciation: A favourable opinion about something. Criticism: A spoken or written opinion/judgment about what is wrong/bad about someone or something.	Art criticism: Critical appraisal Appreciation Valuing or Approving art	Disapproval Depreciation	Artefacts/ Appreciation Appreciation/ Understanding	Informed Fair Honest Critical Analysis/Analyse Evaluation Judgement
2	Artistic autonomy	Autonomy: Personal independence & the capacity to make decisions for oneself and act upon them.	Artistic freedom	Dependence Artistic restriction Lack of control	Autonomy/ Independence Independence/ own decision-making	Artistic freedom Autonomous judgement
3	Art styles, genres, language	Genre: One of the categories that artistic works can be divided into on the basis of form style, or subject matter. Painting depicting household scenes Style: Distinctive and identifiable appearance, form and content in an artistic medium Art Language: Form of Communication Mode of expression	Styles – Art approaches, features, Genres movements, classifications Categories Language – Art terms, techniques, vocabulary	N/A	Art concepts/style Movements/ Styles/Expressionism Styles/ Abstraction Genre/ Portraiture or Still Life	Artistic styles, stylistic movement, stylistic choice, art genres, art language, art concepts, expressive genre, historical genre,

Once this process of lexical analysis had been completed it was found that 30 of the 49 categories had clear relevance to the topic of critical and creative thinking because they had semantic lexical relationships that contained key words and phrases appropriated from the literature on the topic of critical and creative thinking. The rows for each of the categories identified as ‘relevant’ in Table 5.3 were shaded in grey. Those not shaded were considered peripheral to the research. The thirty categories most relevant to the research topic are included in Table 5.4 titled, ‘Thirty Select-Group Categories’. In Table 5.4 the right-hand column provides examples of key words and phrases that have a semantic lexical relationship to critical and creative thinking concepts and theories. These have been taken from the word webs – Figures 5.1 and 5.2 – and the Lexical Semantic Relationship Tables.

Table 5.4 Thirty Select-Group Categories: Codes Considered Relevant to the Subject of Critical and Creative Thinking

CATEGORY	EXAMPLES OF SEMANTIC LEXICAL RELATIONSHIPS
Art appreciation, art criticism	Critical thinking – analyse, synthesise, evaluate, critique, judge.
Artistic Autonomy	Creative thinking – creative expression, novelty/originality, innovation, risk-taking. Critical thinking – independent decision making
Art Making – Process & Product	Creative thinking – creating, creative process – preparation, incubation and revision, fluency, flexibility, imagination, creative product, Critical thinking – reflection, refining images/ideas, organization, decision making.
Art theory, Art history	Critical thinking – art investigation and analysis, understanding and application of the rules, principles, and social conventions.
Assessment	Critical & Creative thinking – analysis, judgement, evaluation.
Awareness of social and cultural differences in art	Critical & Creative thinking – questioning assumptions, suspending judgement, locating bias in cultural aesthetic, synthesis – comparing and evaluating features, informed perspective, finding relationships.
Confidence in own artistic skills & talents	Creative thinking – risk taking, perseverance, independence
Creative, Creativity	Creative thinking
Evaluating and refining work	Critical thinking – evaluate, appraise, judge. Creative Thinking – evaluate, solve problems, refine ideas.
Art expression	Creative Thinking – creative expression, create, communication. Critical thinking – interpretation, visual representation of thoughts and ideas
Student ideas and opinions	Creative & Critical thinking – mental thoughts, estimation, attitude, judgement, beliefs, perspectives, Critical Thinking - giving considered

	opinions, determining truth & accuracy
Imagination	Creative thinking – new, original, unique, imaginative ideas
Individuality	Creative thinking – values originality, freedom, and independence. Critical Thinking – self directed, autonomous.
Intellectual/Critical/Logical think.	Critical Thinking – logical reasoning, rational, reasonable, critical, abstract thought, disciplined
Lateral thinking	Creative Thinking – imaginative, non-conventional, non-linear
Student motivation (to engage in art)	Creative Thinking – intrinsic motivation, interest, Critical Thinking – engagement, focus
Student artistic development & growth	Creative & Critical Thinking – progress, change, self reflection, skills, knowledge, creative abilities
Personal Value Attributed to Art	Critical & Creative Thinking – curiosity, deliberate, sustained attention or focus. Creative Thinking – positive values, feelings, interests, appreciation.
Views about the purpose of education	Critical and Creative Thinking – attitudes, academic, intellectual status of art, judging effectiveness, cognitive goals
Problem Solving	Critical and Creative Thinking – problem solving, creative problem solving, identifying issues & problems
Space/Time (for art)	Creative Thinking – time for incubation, development and reflection of complex ideas, flexibility for teaming with others or individual to work alone and uninterrupted Critical Thinking – organisation, management, focus.
Student behaviour and response	Critical Thinking – thinking skills, intelligent/critical response. Creative Thinking – Creative response, creative action, demonstration of creative thinking behaviours, problem-finding
Syllabus	Critical and Creative Thinking – perspectives, frameworks, outcomes.
Teacher Critique, Criticism	Critical Thinking – critical questions, critical review, critical assessment.
Teacher Demonstration	Critical Thinking – alternatives, possibilities, information, implementing an idea or course of action, thinking aloud, organization. Creative Thinking – creating, creative action, creative possibilities, creative use of materials
Teacher dialogue	Critical and Creative Thinking – discourse, interpretation, critical questioning, motivation, critical enquiry – ‘What if’ questions, giving considered opinions.
Teaching Methods and Strategies	Critical and Creative Thinking – decision-making, evaluating, considering consequences, comparing alternatives, predicting consequences, justifying actions and reactions, thinking about own thinking.
Visual/written texts and resources	Creative Thinking – creative expression, written/visual communication of ideas, novelty, creative techniques & materials, creative response. Critical Thinking – clarifying information, locating bias, critical reflection and judgement.
Visual Literacy/Visual Thinking	Creative Thinking – sensory skills/response, visual perception, visual imagination. Critical Thinking – interpretation, criticism.

Comparative Analysis Across Different Sets of Data Transcripts

The qualitative assessment of meaningful categories was followed by a quantitative approach whereby the presence of a category and the percentage of dialogue (in terms of the total written interviewee dialogue contained in one interview session) associated with that category were calculated within each individual transcript. Only the thirty categories found to be semantically linked to the research topic were considered in these calculations. Commonly emphasised categories within the data transcripts that were also semantically linked to the research topic were deemed to be of interest in the further analysis of the data. Statistical information for each of the individual transcripts were then compared with other transcripts in different groupings to discover which of the categories were most emphasised by participants in the study. The twelve groupings are shown in Table 5.5.

Table 5.5 Groupings of Sets of Transcripts

All data across all case studies	All teacher interviews	All student interviews	All observation notes
All high school data	All high school teacher interviews	All high school student interviews	All high school observation notes
All primary school data	All primary school teacher interviews	All primary school student interviews	All primary school observation notes

Together the various transcripts provided a means to compare each case study site to determine unique aspects as well as commonality amongst participants and classrooms. The existence of a particular code or macro theme in any of the case study sites does not in itself reveal anything unique. A student's or a teacher's action or comment may well reveal an individual attitude or approach towards critical and creative thinking in the art classroom but determining which of these *across the whole of the study* were

particularly significant required a further level of analysis. As will be shown in Chapters 6 and 7, comparing and contrasting concept categories within and across case study data revealed a number of variations. For example, some were emphasised by students, some by teachers and others by the researcher. There were categories that appeared more frequently in the secondary school transcripts than in the primary school transcripts and vice versa. Furthermore, certain concept categories were agreed by all participants to contribute to the construction of a creative and critical thinking environment in the art classroom while only one individual mentioned others.

Code Tabulation

A simple ‘code tabulation’ was undertaken whereby the number of words associated with any particular code was totalled. When examined as a whole, different emphases on different conceptual codes across all the transcripts could be noted and compared to reveal significant commonalities or dissimilarities. Code tabulation was therefore undertaken for each transcript. All transcripts were examined and the number of words in each transcript associated with each code was tallied. Since each transcript was of a different length, the percentage of words associated with any one code was critical – not the total number. Consequently, for each transcript the number of words per code was compared to the total number of coded words in the transcript to determine a percentage value. Words within transcripts that were tagged as *null* were not included in the total count. There were variations in the percentage value attributed to each of the categories. However, the most emphasised categories were understood to be those that represented over 5% of the coded words within an individual transcript. A comparison of percentage values for each of the thirty remaining categories (after semantic lexical analysis was

applied) across each of the sets of case study transcripts indicated that twenty of these categories were emphasised (over 5% of total words) in at least one transcript. Furthermore, some categories were commonly emphasised within a transcript set (for example all high school teacher interviews) or across a number of transcript sets. However, none of the categories were commonly emphasised across all the case study data combined.

A comparison of statistical results obtained through calculating the frequency with which student and teacher participants mentioned things relating to the thirty concept categories revealed information relating to the research questions. Categories commonly emphasised by individual teachers, for example, could be contrasted and compared to the other teacher and student responses. In this way a comparison of different emphases by different participants and data sources provided a means to highlight what appeared to be unique approaches by teachers and students within the different case studies. Commonly emphasised concept codes for each of the twelve sets of transcripts that had also been identified as having a semantic connection to the research questions were tabulated in a list of tables that followed the format shown in Table 5.3. The complete list is included in the Appendices documents. A summary of all the results across the twelve different selected data sets are detailed in Table 5.6. The middle column in Table 5.6 titled, 'Emphasised Code Numbers' listed all the categories that were frequently mentioned by participants. A category was viewed as 'emphasised' because it appeared frequently throughout at least one written transcript. When the total amount of participants' words made up five percent or more of the total amount of written dialogue (for that transcript), the category was included in the list. The right-hand

column titled, ‘Emphasised Code Numbers Common to Every Transcript within the Data Set’ was a list of categories that also proved to be both over the 5% benchmark of frequency and common to all transcripts within that set.

Table 5.6 Emphasised Code Numbers

TRANSCRIPT SET	EMPHASISED CODE NUMBERS FOUND IN EACH TRANSCRIPT	COMMONLY EMPHASISED CODE NUMBERS COMMON TO EVERY TRANSCRIPT WITHIN THE DATA SET
All data across all case studies	1, 2, 5, 7, 13, 15, 22, 24, 28, 30, 31, 33, 35, 36, 38, 40, 41, 42, 46, 48	-
All secondary school data	1, 5, 7, 13, 22, 24, 28, 30, 33, 35, 36, 38, 40, 41, 42, 46, 48	-
All primary school data	1, 2, 5, 15, 24, 28, 30, 31, 35, 36, 38, 46, 48	1
All teacher interviews	1, 5, 7, 13, 17, 22, 28, 30, 35, 36, 38, 46, 48	30, 38, 46
All secondary school teacher interviews	1, 5, 7, 13, 22, 28, 30, 35, 38, 46	7, 13, 22, 30, 46
All primary teacher interviews	1, 28, 30, 35, 36, 38, 46, 48	1, 28, 30, 31, 35, 38, 46
All student interviews	1, 2, 5, 7, 15, 24, 30, 31, 33, 35, 40	1
All secondary school student interviews	1, 5, 7, 9, 19, 20, 21, 24, 25, 28, 30, 33, 40	1, 28, 30
All primary school student interviews	1, 2, 5, 15, 20, 24, 31, 35	1, 2, 5, 15, 31, 35
All observation notes	1, 5, 7, 35, 36, 40, 41, 42, 46, 48	36, 46
All secondary school observation notes	5, 7, 13, 22, 36, 40, 41, 42, 46	7, 22, 36, 41, 42, 46
All primary observation notes	1, 5, 35, 36, 46	1, 5, 36, 46

In summary, the categories included in Table 5.6 are those that were first tested and found relevant to the subject of research through a rigorous process of semantic analysis, and second, identified through applying quantitative measures as those that were emphasised (over 5% of words) within the transcript sets. The identification of commonly emphasised codes across different transcript sets allowed for a deeper analysis of responses and observations in relation to the research questions. In this context the research questions were re-examined to determine what aspects of

statements within commonly emphasised categories answered aspects of these questions. Research questions that related to teachers were matched with data that contained teacher information and similarly research questions that related to students were matched with data that contained student information. Emphasised categories within transcript sets were used to extract critical statements and information that helped answer questions about teachers and students.

Summary

This chapter has outlined the methodology adopted in this study. It has been explained that the research questions were exploratory in nature and required an inductive approach to research. The questions were premised on the notion that visual arts educators have to find and employ pedagogical resources within their own practice to facilitate the development of students' critical and creative thinking.

The adoption of an ethnographic case study approach and the triangulation of data gathered from different data sources were valuable ways to gain further understanding about the role of critical and creative thinking in the different visual arts classrooms. A multi-site case approach was adopted in order to take account of the issue of uniqueness and to deepen understanding of the phenomena under study (Miles & Huberman 1994). Fieldwork was conducted at four different sites and comprised observation of classroom activities and interviews with teachers and students of varying ages. Including multiple sites enabled issues emerging from one case to be compared and contrasted with issues from other cases. It was hoped that this would enhance not only the validity of findings but also contribute to the robustness of the understandings that were established. The

triangulation of data obtained from three different sources (teacher interviews, student interviews and observation notes) was aimed at deepening and widening the researcher's understanding of the topic. Conceptual development was facilitated through converging information from different data sources. Transcripts of each of the data sources were prepared, and by using a system of codes, words within each transcript were related to specific conceptual areas. Some words were also identified as having no relevance to the research questions. Thereafter, the relative emphasis on different conceptual codes within each data source was determined and compared. Finally, comparable areas of coded emphasis across specific transcript sets were highlighted to provide a means to locate comments and statements that were of specific value in answering the research questions.

Chapter 6

Presentation of Data and Analysis of Secondary School Case Studies

This chapter presents data from both secondary school case studies and analyses this data to explore the nature of critical and creative thinking in each situation. Data and analysis from the primary school studies will be presented separately within Chapter 7. Chapters 6 and 7 begin with a brief description of the teachers and students in each case study site before turning to an analysis of the transcripts. The presentation is organised in a manner that best addresses the research questions shown in Chapter 1. In order to clarify the format of the presentation therefore, it is useful to reiterate these questions here. The first question is: How do teachers influence the role of critical and creative thinking in art classrooms? This question is refined into two further subsidiary questions as follows:

- What are teachers' theoretical perspectives about critical and creative thinking in the context of visual arts study?
- What teaching practices are applied to developing critical and creative thinking in art classes?

The second question is: How do students perceive and participate in critical and creative thinking in art classrooms? This question is also refined into two further subsidiary questions as follows:

- What are students' perceptions of critical and creative thinking in visual arts study?
- To what extent is critical and creative thinking a feature of student practice?

The first section of this chapter is titled, ‘Secondary Teachers’ Theoretical Perspectives and Practices’. The second section is titled, ‘Secondary Students’ Perceptions and Practices’. Within each of these parts theoretical perspectives are explored first and practices are examined second. Furthermore, since approaches to critical thinking may be different to creative thinking, each of these concepts is dealt with separately. The data sources and coded categories (in table form) that were used to address the research questions are shown prior to the presentation of data analysis. Pseudonyms have been used for all teachers and students in the cases.

General Description of Secondary School Case Studies

Case study 1 comprised a secondary school art class at the year 10 level taught by Shana Williams. Shana is an experienced high school art teacher who has been teaching at the same school for the past ten years. At various times she has taught all year levels and was one of three senior art teachers employed at the school. During the period of observation, Shana taught the Year 10 class five times in a ten-day timetable cycle. This resulted in either two or three one-hour lessons per week. The Year 10 students had chosen the visual arts course as an elective subject. There were altogether 27 students in the class: 24 girls and 3 boys. Fieldwork took place during the final (fourth) term of the school year. Throughout this term each art lesson involved student art practice. There were no art history or art theory/criticism tasks set in the eight weeks of observation visits. Two specific examinations that tested students’ knowledge of art theory, history and criticism had been held immediately prior to the commencement of fieldwork.

Case 2 study was at a different high school from the first case study. It comprised a Year 7 class taught by Felicity Brown, an experienced art teacher who had joined the staff at her school a little over one year prior to the commencement of fieldwork. Felicity had considerable previous art teaching experience having been an art teacher since 1985. During the period of fieldwork there were two senior full-time art teachers at the school, one of whom was Felicity. The Year 7 class group met three times per week and each lesson took 45 minutes. There were twenty students enrolled in the class – nine boys and eleven girls. The visual arts course they were enrolled in was a mandatory subject for all students in Year 7. Generally each lesson in the weekly cycle related to different art curriculum strands (art theory, history and practice) although there were sometimes overlaps in content such that the strands were integrated in the same lesson. During the period of observation, activities largely ranged between historical studies, art theory and practice. The critical studies strand of the syllabus, while not covered in separate lessons, appeared to be incorporated in some art history lessons. For instance, students researched and discussed, with the teacher, specific features and symbolic elements of photocopied and textbook images.

Secondary Teachers' Theoretical Perspectives and Practices

Data Sources for Identifying Secondary Teachers' Theoretical Perspectives

The interviews conducted with both teachers were the focus of analysis for determining their theoretical perspectives on critical and creative thinking. Using lexical analysis as described in the previous chapter, particular segments of these transcripts were identified as having specific relevance to critical and creative thinking either through the

direct use of these terms, or through the use of synonyms, antonyms, meronyms and collocations. Table 6.1 is a list of those categories tested through semantic lexical analysis that were also the most emphasised categories (those with over 5% of words) for each of the teachers interviewed in Case studies 1 and 2.

Table 6.1 Emphasised Categories in Teacher Interview Transcripts for Case Studies 1 and 2

Case 1: Teacher Interview Data: Shana Williams –Yr. 10	Case 2: Teacher Interview Data Felicity Brown –Yr. 7
□	1 – art apprec. / art criticism
5 – art making/ artwork	□
7 – art theory/art history	7 – art theory/art history
13 – creativity/ creative thinking	13 – creativity/ creative thinking (& 26 lateral thinking)
22 – logical/critical/ intellectual think	22 – logical/critical/ intellectual think
30 – student artistic develop. & growth	30 – student artistic develop. & growth
35 – space and time for art	□
□	38 – views about syllabus
46 – teaching methods	46 – teaching methods

Seven categories were emphasised by Shana Williams (left hand column) and eight categories (right hand column) by Felicity Brown. Five of these were emphasised by both teachers in the interviews and these rows are highlighted. Analysis of all nine categories provided information on teachers’ theories, therefore, key statements from within these categories are used below for gaining particular insight into teachers’ theoretical perspectives. Of primary interest were statements within, ‘logical/critical/intellectual thinking’ (category 22) and ‘creative thinking’ (category 13) because they were the most direct source for interpreting teachers’ theories of critical and creative thinking. ‘Intellectual/critical/logical thinking’ accounted for more than 10% of the words spoken by the two secondary school teachers: 12.76% for the Felicity

Brown interview and 10.15% for Shana Williams. ‘Creative thinking’ also registered as significant for both teachers: 15% for Shana Williams and 9% for Felicity Brown.

Teachers’ Theoretical Perspectives: Critical Thinking

Shana Williams consistently used the word ‘critical’ as a descriptor and did not use other synonymous terms. By contrast, Felicity used a variety of synonymous terms, all of which were identified through lexical analysis as standing for critical thinking. Not surprisingly, all these terms were used in response to questions about critical thinking. In total, Shana mentioned ‘critical thinking’ seven times. Felicity used ‘intellectual’ ten times, ‘logical’ four times and ‘critical thinking’ only once.

When Shana was asked about what critical thinking might entail in terms of learning, she said, ‘Hopefully, the students develop an ability to interpret and see what has occurred in their learning’. This description placed an emphasis on the role of metacognitive processes; that is, students thinking about their own thinking. Metacognition is sometimes viewed as the pinnacle of critical thought within critical thinking taxonomies because it is the most complex of critical thinking processes (Pohl 2000b). Shana identified this as a key aspect of critical thinking, though she did not elucidate an extended theory for the concept. Her descriptions of particular learning processes within the classroom provided more detail, and helped illustrate her theoretical perspective on critical thinking. When asked whether she could give an example of student engagement in critical thinking, Shana was able to describe a Year 10 unit of work.

The Year 10 unit was based on social issues that involved study and critical analysis of a common social problem in their world. Using newspapers, TV, magazines, etcetera, to explore their issue, students are asked to respond in some way – agreeing, condemning, raising awareness – and have to create a work of art around this, given skills and techniques, photo release, photography etc., to do so. I found this unit very important as I saw their reasoning around the issue and maturity in their work. The students in Year 10 became compelled to explain and defend their issues through the visual language (Case study 1 T.T. ll. 384-95).

It is worthwhile observing particular words Shana used to explain procedures – terms such as ‘explore their issue’, ‘critical analysis’, ‘respond’, ‘agreeing’, ‘condemning’, ‘raising awareness’, ‘reasoning’, ‘explain’(ing), ‘defend’(ing). These were the key thought processes and actions the teacher believed were aspects of critical thinking.

Felicity made a significant link between critical thinking and ‘problem solving’ when she said,

The other thing is that the higher intellectual functions like critical thinking come into play in problem solving tasks and you see kids begin to behave like detectives (Case study 2 T.T. ll. 591-95).

There are a number of other noteworthy aspects to this statement that provide insight into Felicity’s understanding about critical thinking. Firstly, the teacher recognised critical thinking as a ‘higher intellectual function’ suggesting she was aware that it has a degree of difficulty and complexity. Secondly, students were thought to engage in critical thinking when they were involved in problem solving tasks.

Teachers' Theoretical Perspectives: Creative Thinking

A number of key statements provide some insights into Shana Williams's theories of creativity and creative thinking. In response to a question about what she believed creative thinking entailed in terms of her visual arts program, she responded by saying,

I think it is to do with a lot of things ... like thinking outside of the square ... and creating an atmosphere in the classroom that enables students to take risks with their work (Case study 1 T.T. II. 182-85).

It is worthwhile examining her use of the phrase, 'thinking outside of the square', as it represents something of a symbolic reference to the nature of creativity. This somewhat common phrase is a metaphorical figure of speech that implies one can look at something – usually a problem – from a variety of different angles, and identify all the options that are likely to contribute to better outcomes. Creativity, according to Shana, is characterised as something that is not shackled by the typical conventions of logic. Interestingly, Shana also states that she creates a classroom climate that encourages students to take risks with their work. This suggests that, daring to 'think outside the square' involves an element of risk-taking.

In trying to ascertain whether fostering creative thinking was a learning priority in her visual arts program, I asked Shana how important she thought it was for students to be able to be creative thinkers. She replied by giving her own definition for creativity and hinting at where she felt students gained inspiration.

Very important, when students are freely experimenting with art media and ideas to explore and discover things they are being creative. Expressing themselves through the elements and principles

of design using their own world as a stimulus (Case study 1 T.T. II. 185-89).

Her statement also raised the issue of using the students' world as a stimulus for ideas. This was something that Shana believed to be important because it was mentioned again at another point in the interview.

A number of key statements provided some insights into Felicity Brown's notions of creativity and creative thinking. Although at no point did she offer a clear definition or theory for creativity, when asked about how visual arts learning might foster creativity, Felicity indicated she liked the idea that striving for creativity encouraged students to think laterally.

It doesn't fit into ... this filing system of [students] which has been taught to go: yes I know that. Dog ... I know dog. Here it is ... So I like that idea of getting a bit more lateral thinking ... to look anew all the time, not assume that you know something. And I think that's what Escher and those artists wanted people to do too. To look again. Don't assume (Case study 2 T.T. II. 653-65).

The danger of mentally compartmentalising or 'filing' everyday objects according to a set mental schema, in Felicity's view, was that it did not promote individual visual reflection and interpretation. Lateral thinking, therefore, was considered a mode of thinking that heightened one's skills of visual perception and understanding.

Felicity also emphasised visual imagination and visual thinking as key thought processes used by creative individuals in fields outside the arts. She made three references to different people in the fields of science or maths who were recognised by society as having made significant creative discoveries. The general aim of her

comments was to illustrate the important role that visual thinking played in the creative process. According to her, these people experienced moments of great insight in which they saw or imagined things in a visual way. One such example involved a famous mathematician whom she could not name. She said,

You know ... that Indian guy who was illiterate and then started to write out these maths things [formulas]... he said that he walked into the maths dimension. That he had actually found the dimension where maths exists. And all he was doing was writing down what he saw (Case study 2 T.T. ll. 312-22).

And in the case of Einstein she said,

Which is what I love. Which is why I go back to Art. Because Einstein ... was kicked out of school being told he was a moron. And he said that he saw in pictures every theory he ever wrote down and he said the hardest thing for him was to turn the pictures into a mathematical formula (Case study 2 T.T. ll. 332-39).

Clearly, Felicity believed that the visualisation of mathematical concepts was an essential part of the 'creative' process in both of these cases. Rather than directly identifying what creative thinking was in the arts, she remarked on creativity in another field (mathematics) and noted the necessity for visual thinking to be a part of that process. By linking visual thinking to creativity, and observing visual thinking within another field, she seemed to emphasise the role of visualisation in the creative process.

Summary Reflection: Teachers' Theoretical Perspectives

An analysis of the secondary school teacher transcripts revealed significant theoretical perspectives for both critical and creative thinking. Each teacher appeared to have a slightly different view about these concepts. Shana believed her students were thinking

critically when they demonstrated a metacognitive awareness in regard to their own learning. She identified a capacity for informed reasoning, developing a point of view and defending a point of view as critical thinking skills. She associated problem solving skills with creative thinking and identified risk taking and self-expression in art practice tasks as integral to the development of creative thinking through art. On the other hand, Felicity identified problem solving as an important element of critical thinking. Felicity also highlighted lateral thinking and visual imagination as features of creative thinking.

The fact that problem solving is linked by Shana to creative thinking and Felicity to critical thinking is consistent with the ambiguous position it has within the literature on teaching for higher order thinking. Teaching models that have a problem-solving focus are linked to both critical and creative thinking development (Torrance 1988; Paul 1992; Bruer cited in Delacruz 1997: 33; Pohl 2000b: 27). This is because when individuals are attempting to find and solve problems they are believed to move back and forth between creative and critical reflection in order to develop solutions or weigh the consequences of any one solution (Marzano 1991).

Shana perceived that a capacity to use reasoning skills was indicative of critical thinking. She illustrated how students with reasoning skills are able to analyse and evaluate ideas in relation to a social issue as well as justify their own position or stance on that issue. Reasoning or analytic ability is typically considered to be a critical thinking ability (Sternberg and Williams 1996). Some creativity theorists, however, also consider analytic ability important to creative thinking. Sternberg and Williams (1996:

3) for example, say that, ‘The creative individual uses analytic ability to work out the implications of a creative idea and to test it.’

Shana’s perception that when students demonstrated metacognitive awareness about their own learning it was indicative of critical thinking, also has conceptual links to critical and creative thinking theories found in the literature. The ability of students to be metacognitive, such that they can monitor the flow of their own thinking, is identified as one of seven types of intellectual behaviours that should be cultivated by teachers teaching for critical and creative thinking (Tishman, Jay and Perkins 1993). Shana also felt it was important for students to take risks and experiment in their art practice tasks. In the literature on creativity this is thought to be a disposition exhibited by creative people in creative ideation or production (Torrance 1988; Sternberg 1988; Csikszentmihalyi 1996).

Felicity highlighted lateral thinking and visual imagination as features of creative thinking. Lateral thinking, a term coined by Edward de Bono, describes a divergent approach to thinking. It is believed to be synonymous with creative thinking because it assists in the generation of novel solutions to problems (Torrance 1988). The point of lateral thinking is that many problems require a different perspective to solve successfully.

Visual imagination is a composite term Felicity used in reference to the development of creative thinking in art. The term brings together the words ‘visual’ and ‘imagination’ both of which have semantic links to creativity theories. Within the literature on

creativity there is often an assumption that creative thinking employs the use of one's imagination (Greene 1999; Fleener 2000; Efland 2002). Imagination is understood by some cognitive theorists to be visual in orientation because it involves the development of mental images that extend reality or project reality into a new time or space (Efland 2002). Starko (2005:111) says that 'visualization' or 'visual thinking' assists some creative individuals to conceive of things they cannot see. For example, Einstein claimed he derived many of his theories through visualisation of concepts like movement (Gardner 1993; Csikszentmihalyi 1996; Starko 2005).

Data Sources for Identifying Secondary Teachers' Practices

The particular theoretical perspective adopted by each teacher are significant not only because they contribute to the definition of both concepts, but because they influenced the kinds of practices teachers chose to use in their classrooms. The next section of the chapter describes teacher practices that were thought to have some influence on student engagement with critical and creative thinking. In order to relate teachers' theoretical perspectives to what was happening in the context of the classroom, categories that were emphasised in both teacher interviews and observation report transcripts were used in analysis of teaching practices. Table 6.2 shows the comparison of interview and observation data for the two teachers. There were some similarities and differences between observation reports and interviews. The three categories that were commonly emphasised in all secondary school transcripts are shaded in grey.

Table 6.2 Emphasised Categories in Observation and Interview Transcripts for Case Studies 1 and 2

Teacher Observation Data Case 1- Shana Williams -Yr. 10	Teacher Interview Data Case 1- Shana Williams -Yr. 10	Teacher Observation Data Case 2 - Felicity Brown -Yr. 7	Teacher Interview data Case 2- Felicity Brown- Yr. 7
			1- art apprec. / art criticism
5- art making/ artwork	5- art making/ artwork	5- art making/ artwork	
7- art theory/art history	7- art theory/art history	7- art theory/art history	7- art theory/art history
13- creative/ creativity/ creative think.	13- creativity/ creative thinking	<input type="checkbox"/>	13- creativity/ creative thinking (& 26 lateral thinking)
22- intellectual/ critical/ logical think.	22- intellectual/ critical/ logical think.	22- intellectual/ critical/ logical think.	22- intellectual/ critical/ logical think.
<input type="checkbox"/>	30- student artistic develop. & growth	<input type="checkbox"/>	30- student artistic develop. & growth
<input type="checkbox"/>	35- space and time for art	<input type="checkbox"/>	<input type="checkbox"/>
36-student behaviour/ response	<input type="checkbox"/>	36-student behaviour/ response	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	38- views about syllabus
40- teacher critique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41-teacher demonstration	<input type="checkbox"/>	41- teacher demonstration	<input type="checkbox"/>
42- teacher dialogue	<input type="checkbox"/>	42- teacher dialogue	<input type="checkbox"/>
46- teaching methods	46- teaching methods	46- teaching methods	46- teaching methods

The main differences between the interview data and observation data was that: ‘student artistic development’ (30) was only emphasised in teacher interviews as was ‘space and time for art’ (35) and views about the syllabus (38). In contrast, an additional four categories were emphasised only in observation notes: ‘student behaviour or response’ (36), ‘teacher critique’ (40), ‘teacher demonstration’ (41), ‘teacher dialogue’ (42). These further categories remained valuable in discovering more about specific aspects of teaching pedagogy and for this reason it was decided to keep them as independent categories to allow for a greater focus on specific elements of teaching performance described in either interviews or observation reports.

Specific statements coded within all the categories shown in Table 6.2 were used for citation and analysis in the following two sections of the chapter titled, ‘Teachers’ Practices: Critical Thinking’ and ‘Teacher’s Practices: Creative Thinking’

Teaching Practices: Critical Thinking

In response to a question about whether she applied particular instructional strategies or models in her teaching to foster critical thinking Shana said,

I find the question difficult to understand but I often use the idea of conceptual development in my teaching to extend the students’ ideas and thinking – starting with brainstorming a theme, object or issue (Case study 1 T.T. II. 240-43).

It appeared that although she was not familiar with formal approaches to teaching higher order thinking – including critical thinking – she had developed her own general approach to teaching art and was comfortable with the notion these methods also encouraged critical thinking. Brainstorming, in her view was one activity that enhanced conceptual development. This teaching technique is considered to be a strategy that encourages creative thinking because it fosters divergent thinking (Starko 2005; Sternberg and Williams 1996).

Shana also referred to a kind of problem-based learning approach in her descriptions of teaching methods. At different points throughout the interview she talked about issues in regard to problem solving. This is illustrated in the following series of four short segments of the interview:

1) They have got to think of mistakes as problems rather than obstacles; 2) Giving them problems to solve like, how do I use this material? Use a stick instead of a brush. Or, how do you create symbols?; 3) Then I presented them with problems which they had to solve creatively and critically; and 4) Each year I try and invent a new process, find a new material, new problems to deal with (Case study 1 T.T. II. 200-1, 215-18, 299-300, 447-48).

Significantly, Shana's references to problem solving activities are compatible with Felicity's, indicating a potential commonality between both teachers. Furthermore, researchers have frequently linked problem solving to *both* critical *and* creative thinking (for example, see Pohl 2000b: 27 and Bruer cited in Delacruz 1997: 33). In this context it is not surprising to discover that both teachers made reference to problem solving activities.

Statements made by Shana in relation to 'student artistic development' and critical thinking suggested that she believed the two were interrelated, such that maturity as an artist implied a greater capacity to think about things in a critical manner. For example, in the following passage she described a process of 'synthesis' whereby students combined knowledge of drawing methods gained through instruction, as well as their experience of a range of art media, with their knowledge of different artists and the stylistic differences in their work:

In Year 7 I tell students I am not going to show them how to draw a 'horse running along the beach at sunset' but instead how to approach the subject matter by teaching them 100 different ways to draw, by letting them experience different media to see how they work – and to study artists' work so they have a different way of thinking. The synthesis of this will bring the learning together as they develop over the years. (Case study 2 T.T. II. 340-47).

As with problem solving, the word ‘synthesis’ signalled a connection between theories of creative thinking and critical thinking. In Bloom’s cognitive taxonomy, ‘synthesis’ involves the putting together of ideas in a new way or developing new products. The same criteria can be applied to Shana’s description of synthesis. However, in Anderson’s revision of Bloom’s taxonomy, ‘Synthesis’ has been re-ordered to become the most complex form of thinking and re-named as ‘Creating’ (see further Pohl 2000b). Though the taxonomy is only one interpretive framework for understanding cognition, it provides at least some evidence for linking creative thinking to critical thinking. When I asked Shana whether she could see what she had referred to as a ‘synthesis’ of ideas occurring amongst Year 10 students, Shana made reference to their art practice. Her assessment of the Year 10 students’ capacity for synthesis however, was a qualified one. She said,

They are becoming more open to the accidental in their work and their direction is usually gained through making mistakes. They have still got to think of mistakes as problems rather than obstacles but you can see a kind of synthesis occurring when they apply themselves to a new task (Case study 1 T.T. II. 198-203).

Words that stand out in this extract are ‘accidental’, ‘mistakes’, ‘problems’ and ‘obstacles’. These words typically have negative associations because they suggest something frustrating and out of one’s control, but Shana’s statements imply she has a positive view about their role in art practice. Clearly, tasks that promote flexibility as well as discoveries through which students can turn mistakes into positive outcomes are considered to promote the use of critical thinking skills.

Shana also believed that making students aware of the high standard of work expected of them was another way to influence students towards thinking critically. On two different occasions Shana mentioned that an emphasis on quality contributed to critical engagement in artmaking. On the first occasion she mentioned this in response to a direct question about what she believed critical thinking in art entailed and how this could be encouraged.

You can help by giving them skills and techniques to enable them to express themselves ... and to judge the success of their own learning.... There are guidelines for the quality of their work and boundaries they have to work within. I think without high expectations students will not achieve their best (Case study 1 T.T. II. 213-21).

On the second occasion she said,

The skills I teach are so important as is the expectation of quality. I show how to make a beautiful strong pot but as well I make a weak, badly formed pot. The students know I will not accept poor quality work and strive and practise until they achieve this idea of quality. They can see it and want to learn until they get it... Excellent quality in work makes kids proud and feel good, by accepting lower standards it has a negative effect on students (Case study 1 T.T. II. 347-60).

The practice of demanding a high standard of work was most likely thought to encourage students to take responsibility for critically reviewing and evaluating their own work. When Shana said, 'They can see it and want to learn until they get it', it provided some insight into why she made the conceptual link between work standards and critical thinking. The students' desire to achieve quality work meant they were more likely to persist and persevere in their learning until they attained this goal. Persistence and perseverance as well as goal-directedness, are traits often mentioned by critical thinking theorists (Norris 1985; Sternberg 1985).

Throughout her interview Shana clearly identified a number of strategies that foster critical thinking in her classroom. Observation of Shana's class activities revealed few situations in which these strategies were put into practice. Shana regularly engaged in dialogue with individual students and critiqued their work during learning activities. This was understood to contribute to their engagement with critical thinking. The teacher was inculcating students into the practice of critically reviewing and assessing their work and remaining open to the possibility of self-correction. The following excerpt taken from the observation notes illustrates how Shana critiqued students' work while they were in the process of making things:

When Shana gets to Caleb's work area she says immediately to him, 'we don't always have to tell stories through our work you know'. Her criticism is that his work is more of a cartoon and she would rather he think about the actual design elements he is using. One of her questions for him was, 'where are your enclosed shapes?' When she next came to Sophie's work she pauses. Sophie says quickly 'are you going to criticise my work'? She says this humorously but you can see she is slightly defensive. Shana's reply was 'well that's my job isn't it'? Shana's suggestion is that there is too much in Sophie's design and she should simplify it. She says, 'It looks as though you have two separate works in one. Why don't you separate it into two'? There were more comments about doing a long vertical piece of background paper and re-drawing it. Sophie looks uncertain and a bit glum but she tends to agree with some of the teacher's comments. Natalie's design is working well according to the teacher but she also says to her, 'you don't have to work hard, hard, hard all the time' and this relates to her use of solid and outlined figure forms. She suggested that other techniques like sponging, using softer tones and so on might lighten it up (Case study 1 O.T. II. 299-331).

This description of how the teacher conducted criticisms and evaluations of student work in progress also highlighted the fact that she was often provocative and assertive in her communications with students. In this instance, and at other times observed

during field visits, the teacher gave students clear directives for refining their work. The students could, however, exercise their right to ignore the teacher's feedback as was seen in the case involving the three students Caleb, Sophie and Natalie. Only one of the three students acted upon her advice during the course of the lesson. An absence of immediate consensus contributed to critical engagement because the student and teacher did not have to reach agreement in terms of aesthetic criteria. Decision-making was still in the hands of the student artist.

It was noted that the main dialogue between Shana and her students occurred through one-to-one exchanges as she moved around the classroom. However, while students were getting settled at the start of each lesson, the teacher always talked for around five minutes, usually raising her voice to command attention. In most instances this type of teacher dialogue was purely functional and directive. Class dialogue in general, was short and the teacher allowed little wait time for answers. It was also observed that the teacher dominated class dialogue and at no time during fieldwork visits did the students and teacher engage in an extended class discussion about any topics or issues that would allow for debate or further critical inquiry.

When Felicity Brown was asked about whether she knew of any higher order thinking skills programs or models that could be applied to art teaching she said,

I don't really know of anything that applies to the visual arts but of course I follow syllabus guidelines and there are plenty of intellectual exercises that relate to that (Case study 2 T.T. II. 233-37).

Felicity had said she believed art practice, theory, criticism and history – were pertinent to the students’ learning and she followed the practice with Year 7 of apportioning time to each in the timetable. Art analysis was the key aspect of what Felicity called ‘critical studies’. As she described it, ‘Critical studies is – you know – art appreciation or art criticism...like aesthetics as we used to call it’. She was enthusiastic about spending time on critical studies activities and at one point in the interview, she said,

And that’s what I love about art now, the fact that we can have critical discussions in critical studies in class ... that brings out everyone’s point of view (Case study 2 T.T. ll. 666-69).

When asked, Felicity gave a fairly negative assessment of students’ abilities to engage in critical studies in regard to making decisions independently, or in reflecting upon their own actions or reactions to things. She explained that students found evaluation and self-reflection very difficult.

No, that is not a Year 7 trait at all. If you ask them about why they did things [referring to their artworks] they say huh? Why? They say they have forgotten, or else they take the simplistic road. Why did I use blue? Cause its like the sky. They don’t realise I think that it’s part of the process. They are shocked that you are actually interested in what they have done. And often times they’ll think it’s because they have done something wrong. They think that if you ask those questions it’s because they are in trouble (Case study 2 T.T. ll. 545-64).

Felicity’s perception was that Year 7 students found it difficult to critique art generally because they were not inclined to evaluate and make judgements about their own and other’s art, to make decisions independently, to reflect upon why they chose a course of action in regard to their work, as well as to justify this course of action. These are skills commonly associated with critical thinking amongst critical thinking theorists (see further Chapter 2).

While Felicity used a variety of teaching methods in her class, the aspect of her teaching that contributed most to critical enquiry was her practice of instituting class discussions under her own direction. Despite the fact that she dominated verbal exchanges in class discussion, there were opportunities for students to express themselves orally. Many questions were framed in such a way that there need not be one correct response, as students were encouraged to speculate about things and respond to each other's speculations. These sorts of questions were the ones that provided the most opportunity for students to practice critical thinking. For example, students were questioned about how humans perceive size and what makes something big or small. Why did students think artists sometimes make things unnaturally large in a painting? Why did they think they put the pyramids on the west bank of the Nile? These sorts of questions required students to give considered opinions based on prior knowledge and to synthesise information to generate reasonable answers.

Another strategy that potentially contributed to engagement in critical thinking, was a demonstration with commentary that Felicity gave to students in class. During this demonstration the teacher practised the skills and techniques used in the process of creating a mono-print. She also gave verbal explanations while carrying out the demonstration. What was unusual in this demonstration was that Felicity also verbally expressed her thoughts while creating her print. For example, some of her comments related to her reasoning about what she would put in her picture.

'So I need some hieroglyphic in the middle here'; 'Oh the tree on this side has leaves that are like circles; 'I think I have enough marks but if

I had more time I would want to add a lot more in this area' (Case study 2 O.T. ll. 603-09).

The printing demonstration took just ten minutes in total but the effect was to model the kinds of decision-making and critical judgements the artist is required to make during the creative process. The strategy of thinking out loud provided a range of cues that may be used to engender metacognitive thinking in students. Tishman, Jay and Perkins (1993) similarly describe the practice of talking aloud while reflecting on thinking, as a way that teachers can expose students to exemplars of metacognition.

Teaching Practices: Creative Thinking

Shana's comments on creativity and creative thinking demonstrated that she linked creativity more closely to art production than to theory or history activities. In relation to artmaking, it was noteworthy that she chose to describe specific actions within the creative process using verbs such as 'experiment', 'explore' and 'discover'. The emphasis was on students discovering things for themselves through a process of trial and error rather than directing them toward a single approach. This suggested that she valued a learning environment in which students maintained their individuality and autonomy. One particular comment Shana made in regard to ways she was able to foster creativity seemed to confirm her preference for this kind of learning situation.

... one of my strong ideas on art teaching is to do with the student finding their own strengths and successes in art practice and by presenting them with a wide range of experiences – using critical, creative thinking and conceptual thinking – helps them find their way through (Case study 1 T.T. ll. 280-84).

The words ‘finding’ and ‘find their way’ signalled she valued the concept of self-discovery in learning. The teacher’s role in this process was to provide diverse learning experiences that stimulated art practice. Furthermore, Shana had effectively distinguished three kinds of thinking and indicated that they were all employed in student art practice.

Shana identified ‘conceptual thinking’ as a mode of thinking distinct from critical and creative thinking. This may have been because the learning framework devised in the syllabus (Board of Studies New South Wales 1999) is the conceptual framework. This structure is intended to focus students’ own artmaking as well as investigations of artworks around the role and function of artists, audiences, artworks and the world. Through the conceptual framework and the use of interpretive frames, students are encouraged to ask who, what, how and why questions about the role of the artist and their intentions (New South Wales Board of Studies 1999). The following passages outline what Shana refers to as the ‘idea of conceptual development’:

... I often use the idea of conceptual development in my teaching to extend the student’s ideas and thinking, starting with brainstorming a theme, object or issue, like a teabag, button or string, or a social issue. Conceptual thinking extends the student’s understanding of the world (Case study 1 T.T. II. 241-49).

Shana herself did not say that conceptual development was more likely to engage students in processes related to either critical or creative thinking. When asked about how effective she felt conceptual development exercises were in promoting thinking, Shana was positive about the success she had with Year 10 students. She said,

They are often so amazed after brainstorming. They cannot believe they can get such deep meaning out of a simple concept and how meaning can be associated with their own life (Case study 1 T.T. II. 255-58).

Shana twice referred to ‘starting with’ brainstorming as a way into conceptual development. It seemed she used this technique at the beginning of a new task to orient students towards new possibilities in art production or towards alternative interpretations of artists’ works. Shana’s intention was to encourage students to discover conceptual relationships between objects and more abstract concepts. This exercise was clearly intended to improve their capacity for divergent thinking, including fluency with the number of ideas they could generate and flexibility with their ability to shift approaches or directions easily.

A piece of string, could mean tension, binding, a clothes line. Or Jackson Pollock’s *Blue Poles* can be linked with a magpie’s nest, a knot of wool, or a photogram of tinsel, a tassel of hair (Case study 1 T.T. II. 264-66).

In this sense Shana’s concept of conceptual development resulted in creating visual metaphors and analogies in order to establish complex connections amongst objects and ideas. This resonates with statements made about higher order thinking by Efland (2002: 116).

During more advanced phases of domain-specific learning, students may encounter higher-order thinking strategies such as the ability to categorize and form analogies and metaphors.

In regard to works of art, Efland also points out that they may provide individuals with the conceptual tools to understand and communicate about matters of life because they use symbols and visual metaphors in ways we can understand.

Shana's references to students' development and growth in terms of their capacity for critical thinking always occurred in the context of art practice; that is, artmaking activities. In general, throughout these accounts, she drew critical and creative thinking together in descriptions of students' artistic development. An example of this was when she said,

Year 10 are at an age where life is about to change from the carefreeness of junior school to a very demanding challenge of HSC. Although these students still shun art theory, they learn effectively through practice and making, weaving critical and creative processes together. From Year 9 appropriation painting to Year 10 work in symbolism is a huge leap as the Year 9 painting is really just reinterpreting artists' images to create their own. Year 10 students are amazed they can create a very successful work, skilful and meaningful, they have confidence in the creative process (Case study 1 T.T. II. 402-13).

A further comment that Shana made about one of the students, again illustrated how she recognised a student was engaging in critical thinking during creative production. She said,

I watched an Aboriginal girl very unsure of herself and not 'good at art' [signals an inverted comma sign in the air with her fingers] create a painting that was wonderful. I saw her being critical and changing the colour three or four times as other parts changed. (Case study 1 T.T. II. 432-35).

These segments of the interview emphasised the point that Shana usually perceived that the development of critical thinking occurred through art practice. Consequently, the role of theory studies in this development was minimal. Most likely, her preference for art practice over theoretical studies existed because she believed that art theory was not

popular with students. She had stated that, ‘students still shun art theory’, suggesting she was very aware of a lack of student interest.

Observation transcripts for Shana’s class provided an interesting point of comparison with the interview transcripts. Observation notes pointed to the use of six methodologies that facilitated creative thinking in some way. These were, extended individual projects, time for exploration, conceptual development through the creation of a body of work, teacher demonstrations, a problem solving approach to activities and teacher critiques of student work. Two of these were also practices she had mentioned during her interview. These were a problem solving focus and her ideas of conceptual development. Altogether Shana had discussed three main teaching strategies in her interview, the third being brainstorming. However, no brainstorming exercise was observed during the period of fieldwork, although it may well have occurred in other lessons.

Shana appeared to follow a project approach to art practice and this meant students worked independently on an art piece for an extended period of time. The most complex of all the art projects, the ceramic sculpture, took four to five weeks to complete. During this project the teacher advised students individually at different points in their project work. Although these projects were designed, framed and supervised by the teacher, students were able to make their own artistic decisions about the form, style and content of their work. The independent nature of the study allowed for originality and diversity of creative expression since a degree of independence provided more opportunities for students to make their own artistic judgements.

During these projects students were given time and opportunity to work through creative ideas, elaborate and refine their ideas and find solutions to design problems they encountered in the process of making the artworks. In this way a project approach created a learning environment that fostered creative thinking because it allowed thinking time for ideas to develop and incubate, encouraged a wide range of possible solutions and was flexible in allowing students to work alone.

In her interview, Shana had described conceptual development as being an important aspect of her teaching and she perceived this as contributing to both critical and creative thinking outcomes. Her preference for tasks that encouraged conceptual development was also noted during fieldwork visits.

One particular project, called the 100-figure project, required students to build a three-dimensional image using 100 human figures in some combined way. Figurative forms placed together in some way became the basis for creating visual analogies and metaphors. When completed they all, to some extent, made a social comment about modern day life and the human condition. Apart from the conceptual nature of this task, conceptual development was also promoted through the sequencing of art activities through an extended body of work. Engagement in creating an extended body of work required students to isolate certain themes, concepts or issues and express these by using a variety of media. When looking at the projects undertaken in this case study, one could see there had been a number of conceptual shifts throughout the whole of the sequence of lessons.

In the interview with Shana, when discussing how her teaching fostered both critical and creative thinking, she had referred to the importance of problem solving activities. Similarly, my observation notes also detailed numerous times when individual students faced situations in which they had to find solutions to unforeseen design problems. The following observation transcript segment illustrates the kinds of problem solving tasks in which students engaged:

After chatting myself with a few students it becomes clear they have had to adapt and change the form of their projects as they continue working on them. There has had to be a lot of problem solving. For example, Rosemary has had many problems with constructing a mobile with her tiny figures, as some of them are not well shaped for easy attachment to wire. She has set up an elaborate system of aluminium wire, which holds the figures in place and has anchored the mobile to avoid past problems with it spinning and springing about that has caused some figures to smash. She says she has lost about 50% of her original clay figures (Case study 1 O.T. II. 131-43).

Shana also modelled creative thinking processes for the students through art demonstrations. There were often occasions when Shana demonstrated processes to students and every lesson included at least one or two interactions between students and teacher in which she picked up a pencil or brush to demonstrate either a technique or a visual form that she had been verbally explaining to the student. During three lessons she also stopped at some mid-point in the lesson to give students a longer open class demonstration that would last anywhere between five and fifteen minutes. During these demonstrations, while she was working, she would explain aloud why she was applying something, talk about the quality of the materials, say what effects she was after and

comment on the results. This effectively showed students in a direct manner how they could design, construct and produce their artworks.

Shana stated her intention to move students away from using cliché or stereotypical imagery in their art practice. By limiting the use of derivative images, students were required to look for more original and imaginative ways of visually expressing subject matter. Observation of class activities confirmed this teacher stance. In one particular instance, a student loudly challenged the teacher and objected to never being allowed to incorporate fairies or butterflies in her work. The teacher responded by reasserting her rule and saying loudly to the entire class that all students will receive minus twenty marks for fairies in their work. Whether or not this was an appropriate or effective way to control student behaviour and their choice of subject matter, students were made aware that the teacher did not accept visual clichés or popular stereotypes. In this case fairies and butterflies symbolised cliché imagery.

Summary Reflection: Teaching Practices

There were teaching practices that were applied by Shana and Felicity that could be seen to enhance critical thinking but these were different in each case. Shana conceived of critical and creative thinking development largely in relation to approaches to artmaking. Felicity, on the other hand, emphasised the role of critical thinking in art history, theory and criticism.

Shana's interview statements highlighted five particular strategies that she liked to adopt. Firstly, she advocated the idea of conceptual development and this included

brainstorming activities. This teaching technique is considered one of the strategies that encourages creative thinking because it fosters divergent thinking (Starko 2005; Sternberg and Williams 1996). Secondly, she favoured a problem solving approach whereby she created problems that the students could solve in different ways. Thirdly, she showed students how to use a variety of different media, artistic concepts and methods so that they were able to effectively synthesise knowledge and skills when applying themselves to new projects. Fourthly, she encouraged risk taking and experimentation, requiring students to be open to learning from accidental discoveries. Finally, she believed that setting high standards encouraged students to critically review and evaluate their work, and this motivated them to persevere in reaching set goals. Art practice activities observed in her class clearly illustrated tasks that required problem solving, risk taking and experimentation, and illustrated how she encouraged students to synthesise knowledge, skills and ideas through a conceptually organised body of work. In addition, she demonstrated art activities in association with ‘talking out loud’ as a means to encourage metacognitive skills amongst her students.

Felicity Brown also used a ‘talking out loud’ strategy during her demonstration sessions. Apart from this point of commonality, however, Felicity’s approach was quite different to that of Shana’s. A major difference related to the dialogue exchanges in both classes. Shana largely conducted short one-on-one discussions with students while Felicity preferred to engage in whole class discussions for extended periods of time. Felicity’s approach resulted in effective questioning and a greater sharing of ideas that facilitated student critical enquiry.

Shana stated that she regularly chose art tasks that required her students to engage in problem solving activities. Related to this, she referred to her emphasis on conceptual development as a key element in her students' learning. In practice, three further aspects of Shana's teaching are worth noting for the way in which they enhanced creative thinking in her classroom. Firstly, she made her students create an extended body of work using a variety of media over a lengthy period of time. This sequencing of art activities required students to solve both conceptual and practical problems in the process of creating artworks. Secondly, she demonstrated art practice techniques to her students while verbalising her thoughts in order to model metacognitive thinking for her students. Thirdly, she forced her students to seek novel ideas and forms by restricting their use of derivative images. Observation of her classes revealed that various activities undertaken by the students demonstrated these approaches. Furthermore, although brainstorming was not observed in her classes, it was a teaching strategy Shana believed improved her students' abilities to think creatively.

Felicity provided little information on what specific teaching approaches or strategies and learning tasks could encourage creative thinking. A great deal of emphasis throughout the interview, however, was placed on individual student artistic development and growth through art. In analysing the content of the designated categories within the observation reports for Felicity's class there was little that could be counted as evidence of instructional strategies or learning activities that encouraged creative thinking. This appeared to be largely a result of the particular focus for

activities planned during the fieldwork period as well as the teaching methods adopted by the teacher.

Teachers' theoretical perspectives and practices are of course only one aspect to the case studies that help answer the research questions of this thesis. Students' thoughts and actions in each case study were also significant in how critical and creative thinking was enhanced, emphasised or de-emphasised in the classroom. Consequently, the next segment of this thesis explores the role of students in influencing higher order thinking in Case studies 1 and 2.

Secondary Students' Perceptions and Practices

The students in both of these case studies engaged with critical and creative thinking in various ways and to different extents. A number of factors including the orientation and educational priorities of each teaching program, the methods and strategies adopted by the teacher, and the structural support offered within the learning environment influenced their behaviour and thinking. Although the major responsibility for the formation of learning environments resides with the teacher, it is important to remember that students themselves actively mediate and hence modify the learning environment.

Data Sources for Identifying Secondary Students' Perceptions of Critical and Creative Thinking

Interviews conducted with four students chosen from each of the two case study groups were the focus of analysis for determining students' theories on creative and critical thinking. Throughout these interviews students discussed their views, attitudes and

opinions about their experience of studying art in high school. Specific questions were asked to encourage them to reflect upon the process of their own learning in art, particularly in relation to ways of thinking. Shana's students were in Year 10 and Felicity's students in Year 7, and this age difference created considerable variation in the depth of their responses.

Table 6.3 is a list of the emphasised categories (over 5% of words) for each of the student group interviews. As for other transcripts, the list was compiled after lexical analysis had identified which categories were most relevant to critical and creative thinking.

Table 6.3 Emphasised Categories in Student Interview Transcripts for Case Studies 1 and 2

Case 1: Student Interview Data Yr. 10 students	Case 2: Student Interview Data Yr. 7 Students
1 – art apprec. / art criticism	1 – art apprec. / art criticism
5 – art making/ artwork	<input type="checkbox"/>
7 – art theory/art history	<input type="checkbox"/>
9 – assessment	<input type="checkbox"/>
13 – creativity/ creative thinking	<input type="checkbox"/>
<input type="checkbox"/>	19 – ideas and opinions
<input type="checkbox"/>	20 – imagination
21 – individuality	<input type="checkbox"/>
<input type="checkbox"/>	25 – life experience
28 – student motivation	28 – student motivation
30 – student artistic development	30 – student artistic development
33 – views about purpose	<input type="checkbox"/>
40 – teacher critique	<input type="checkbox"/>

There were altogether three categories commonly emphasised across both groups. These were 'art appreciation/art criticism' (1), 'student motivation' (28) and 'student artistic development' (30). All three categories have been shaded in grey in both columns to distinguish them from other categories. These were significant categories across all transcripts, and therefore much of the following analysis is drawn from this

data. However, specific statements coded within the other categories that appear in Table 6.3 were also used for citation and analysis in the following two sections of the chapter titled, ‘Students’ Perceptions: Critical Thinking’ and ‘Students’ Perceptions: Creative Thinking’.

Students’ Perceptions: Critical Thinking

None of the students interviewed in Shana’s and Felicity’s class ever directly discussed the topic of critical thinking but on a few occasions they described views and experiences that touched on aspects of critical thinking. An analysis of statements reflecting students’ ideas and opinions (category 19) showed that three students interviewed described forms of critical thinking behaviour. These students believed they were developing flexibility in thinking and a willingness to self-correct as a result of their art learning and these traits are identified by Bailin (1998) as important critical thinking dispositions. In fact, two of the students interviewed, stated that a main feature of art as a discipline was that you were expected to express different ideas and opinions. They thought the discipline allowed room for individual interpretation because there was often more than one ‘right’ solution to the same problem. For example, Pauline explained how she felt that art was significantly different to other subjects in which students learned facts and information.

It’s not a majorly right or wrong subject it’s more important to express an opinion about something.’ (Case study 1 S.T. *a*, ll. 51-53).

Rosemary and Anne, mentioned they were developing social ‘perspectives’ through art and this was thought to be indicative of critical thinking because forming perspectives

requires a level of critical reflection and interpretation of cultural and social meaning as they are symbolised in artefacts. Both Rosemary and Anne, for example, when asked whether art involved different ways of thinking said they believed it involved forming different perspectives on life. It became clear throughout their interviews that both Rosemary and Anne were appreciative of opportunities to form wider social perspectives and comparative understandings of cultures.

Students' Perceptions: Creative Thinking

The four students interviewed in Shana's class indicated they were more conscious of the role of creativity in art as opposed to critical thinking. Comparing each of the interviews in this case group revealed that the number of words for the category 'creativity/creative thinking' was considerably higher than for critical thinking. The development of creativity was an important goal orientation from the students' perspective although some placed greater emphasis on this aspect of their learning than others. Two students – Pauline and Suzanne – contested the notion that art was mainly useful for those who wanted to become artists in the future. Instead they proposed that the development of creativity was one of the main reasons why it was useful for *everyone* to study art. In terms of vocational opportunities Suzanne said if you previously studied art at school,

It might give you the edge on other applicants [for jobs that demand more levels of creativity] if you have better ideas (Case study 1 S.T. a, ll. 257-58).

Prior to making this comment Suzanne had also described how art might help to improve one's ability to come up with imaginative ideas. She said,

I think it helps you with your imagination – like it gets your imagination psyched up so if you have to come up with an idea for say... advertising ... it would be quite quick (Case study 1 S.T. *a*, ll. 224-28).

Similarly Pauline said,

It helps you express what you are thinking so if you have an artistic career it can help you (Case study 2 S.T. *a*, ll. 217-19).

Pauline and Suzanne's comments indicated that they felt the ability to be creative was generally a valuable social skill and specifically it improved one's employment prospects if choosing a career in creative industries. Furthermore, Pauline believed creative thinking was needed not only for creating useful objects but that it was invaluable in the media industry wherein the quality of one's ideas were important.

In comparing art to other subjects in the school curriculum, practical sessions in art were favoured for a number of reasons. Each of the students mentioned that they preferred art study because it was more hands on, it was fun and it was relaxing and therapeutic. Anne likened art to drama because,

They're both ...they're both really practical, creative things (Case study 1 S.T. *b*, ll. 183-84).

The word association between 'practical' and 'creative' in this statement was quite revealing as it showed a conceptual polarity between theory and practical work. As the association suggests, the four students interviewed typically associated engagement in creative thinking only with art production. The students described how theory – that

was interpreted to mean everything that was not art practice – was not creative.

Rosemary, for example, explained why she did not enjoy art theory,

... because it's not actually creative. It's just like any other subject where we have to learn stuff and we have to analyse stuff (Case study 1 S.T. *b*, ll. 114-16).

Art theory lessons were something that all four students described tolerating rather than enjoying. Suzanne, for example, commented that art theory lessons were 'not that bad' and her reason for lacking enthusiasm was,

It's just that theory is not exactly what we chose art for. We chose to get away from all the theory subjects (Case study 1 S.T. *a*, ll. 101-3).

A common theme that emerged in all the student interviews was the view that involvement in art was personally satisfying because it was about the individual (category 21). This was best illustrated by Pauline's comment that,

It's [art] more an expression of you...its like drama...it's an expression of what you...your own individuality (Case study 1 S.T. *a*, ll. 38-41).

Students invariably associated individuality and personal expression with creativity. Anne for example, stated that, '...creativity releases your inner self' (Case study 1, S.T. *c*, l. 500). Interestingly, she associated creativity with her art practice rather than her art products. Evidence of this was the fact that Anne had described how doing art gave her the chance to be creative but when asked about whether she ever had the sense that any of her own artworks were particularly creative in themselves, she responded in the negative. Her reasoning for this was,

I think its because we are working on the same thing, the same task. So, that they [the artworks] all have a similarity (Case study 1 S.T. *b*, ll. 519-21).

And at a later point she also said,

I don't think there is as much individuality as there could be because you are doing something that is like an exercise (Case study 1, S.T. *b*, ll. 549-51).

Her evaluation of school art was that it was difficult to be creative because school art programs were not designed to be individualistic and hence her artworks were not truly creative because they lacked originality. She was clearly conscious of the fact that originality or novelty is a commonly applied criterion for judging the creativeness of a product. When probed further, however, Anne denied that the teacher was restricting her ability to make autonomous choices. Instead, she attributed the lack of individuality in art production more to the apprenticeship model adopted in art practice rather than to a prescriptive approach on the part of the teacher.

In contrast to the students in Shana's class, the four students interviewed in Felicity's class said little about creativity or creative thinking. The number of words attributed to the concept was 1% in two of the interviews and 0% in the remaining two interviews. This result would appear to support the view that there was little creative thinking orientation in their art program because students were less conscious of this aspect of their artistic development. There were, however, words and statements that could be conceptually linked to creative thinking.

An important point that Emily raised was that she liked the fact that through art she was able to see things in different ways from others and she tried to give me an example of how this applied to art. She said, ‘You might look at a tree and only see a tree but I would look at it and see something else’ (Case study 2 S.T. *a*, ll. 29-30). It appeared Emily enjoyed the thought that she was able to interpret meaning in artworks for herself and to find her own visual narrative rather than having it explained for her. The following passage shows that she was conscious of a social tendency to adhere to singular interpretations of meaning as she said,

I was wondering if whether we need to understand all the time because you could take a look at something [artwork] and you might see a story and then that is how you remember it. And you do keep remembering that stuff but then someone tells you somewhere, somehow else that’s different...you need to understand some art but abstract art is a bit harder (Case study 2 S.T. *a*, ll. 87-94).

It was clearly difficult for Emily to articulate why she was resistant to learning from other people’s analysis of art but her attraction to abstract art (this was mentioned again later in the interview) was largely that it provided freedom to create her own ‘story’ because one could be less literal in translating meaning.

Two of the students, both of them boys, said the main reason they enjoyed art was because they were able to use their imagination. However, there was a fairly narrow view amongst the boys about the function of art lessons and the personal benefits that might ensue in terms of the development of mental skills or strategies. Jed acknowledged he must be thinking when he was involved in art production ‘because I’m always fixing stuff’ but he said he wasn’t really conscious of his thinking ‘because

its like from the top of your head' (Case study 2 S.T. *b*, ll. 303-4). Jed's description suggests that when directly engaging in art practice he was experiencing a kind of uninterrupted mental flow but that he was not conscious of what he was thinking because he had not really processed his thoughts.

Summary Reflection: Students' Perceptions

Students in both case studies found it challenging to discuss their cognitive perspectives towards art class activities. Though creative thinking was conceptually more easily understood than critical thinking, neither was easy to talk about. The older students in case 1 of course found this somewhat easier than the younger students in case 2. Students in case 1 therefore, mentioned how art contributed to their ability to be quick and flexible in generating ideas and opinions. They also pointed out that the subject itself was less rule-orientated such that it invited more individual interpretation of information as well as encouragement for finding individual solutions to visual problems/tasks. These students were also conscious that art developed new perspectives giving them more insight into social and cultural differences. In case 2, two of the students showed an interest in art analysis while the other two were fairly resistant. One student was particularly conscious of relating the subject of artworks to experiences in her own life in order to find meaning. Furthermore, she stated a preference for analysing abstract style artworks despite the fact that her peers found them challenging and difficult, largely because the artist's message remained ambiguous and open to contestation.

Student responses to questions about creative thinking were more forthcoming than to critical thinking. Certainly in case 1, students perceived creativity to be an important aspect of art practice. In contrast, more theoretical art tasks were not thought to encourage creativity because they were more prescribed, involved memorisation of facts and information, and followed similar work patterns to other subjects – like writing essays. In terms of what it meant to be creative, students described how becoming creative involved being able to produce many good ideas and this was considered a valuable life skill that would have career benefits into the future. Creativity was intrinsically linked to art practice because art promoted self-expression and the use of one’s imagination. Thus, students felt they were able to explore their own psyche and reveal their inner-selves in art practice.

By contrast, the students in case 2 did not expand on their views about creative thinking or creativity as it applied to their art studies. They did, however, voice opinions about their motivation to study the discipline and all students appeared to enjoy art study. Most students particularly liked the fact that there were opportunities to exercise one’s imagination in art practice tasks. Art analysis and interpretation, although not as favoured as art practice tasks, were considered to offer valuable and effective ways to understand and learn about life. Artworks with clear visual narratives as well as more abstract forms of art were believed to be reflective of one’s own and other’s life experiences and for this reason two of the students commented that analysing artworks encouraged the development of empathy. Some students professed to not be conscious of their own thought patterns when engaged in creating artworks. This lack of

metacognitive awareness made it difficult to talk with students about mental processing, particularly in regard to creative thinking and associated behaviours.

Data Sources for Identifying Secondary Students' Critical and Creative Thinking Practices

Student interview and observation transcripts were valuable in discovering aspects of student learning practices. Table 6.4 shows the emphasised categories across the two observation and interview transcripts in Case studies 1 and 2.

Table 6.4 Emphasised Categories in Student Observation and Interview Transcripts for Case Studies 1 and 2

Case 1: Student Observation Data Yr. 10	Case 1: Student Interview Data Yr.10	Case 2: Student Observation Data Yr. 7	Case 2: Student Interview Data Yr.7
<input type="checkbox"/>	1 – art apprec. / art criticism	<input type="checkbox"/>	1 – art apprec. / art criticism
5 – art making/ artwork	5 – art making/ artwork	5 – art making/ artwork	<input type="checkbox"/>
7 – art theory/art history	7 – art theory/art history	7 – art theory/art history	<input type="checkbox"/>
<input type="checkbox"/>	9 – assessment	<input type="checkbox"/>	<input type="checkbox"/>
13 –creativity/ creative thinking	13 – creativity/ creative thinking	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19 – ideas and opinions
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20 – imagination
<input type="checkbox"/>	21– individuality	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	22 – intellectual/ critical/ logical thinking	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	25 – life experience
<input type="checkbox"/>	28 – student motivation	<input type="checkbox"/>	28 – student motivation
<input type="checkbox"/>	30 – student artistic development	<input type="checkbox"/>	30 – student artistic development
<input type="checkbox"/>	33 –views about purpose of doing art ed	<input type="checkbox"/>	<input type="checkbox"/>
36 –student behaviour/ response	<input type="checkbox"/>	36 –student behaviour/ response	<input type="checkbox"/>
40 – teacher critique	40 – teacher critique	<input type="checkbox"/>	<input type="checkbox"/>
41 – teacher demonstration	<input type="checkbox"/>	41 – teacher demonstration	<input type="checkbox"/>
42 – teacher dialogue	<input type="checkbox"/>	42 – teacher dialogue	<input type="checkbox"/>
46 – teaching methods	<input type="checkbox"/>	46 – teaching methods	<input type="checkbox"/>

Altogether there were eighteen categories emphasised in the student interview and observation data when they were combined. However, there were no categories that were commonly emphasised across all the secondary transcripts. Data analysis pointed to variations in the number of words attributed to the category ‘critical thinking’ in observation transcripts. It was an emphasised category (5.65% of words) in observations of students in Felicity’s class while it fell below this level in Shana’s class (3% of words). Therefore the category does not appear in the case 1 observation data (see table 6.4) because wasn’t an emphasised category (over 5% words). Specific statements coded within the categories that appear in Table 6.4 were used for citation and analysis in the following two sections of the chapter titled, ‘Students’ Practices: Critical Thinking’ and ‘Students’ Practices: Creative Thinking’.

Students’ Practices: Critical Thinking

Part of the reason for the variation in the number of words attributed to the category ‘critical thinking’ may have been due to the fact it was difficult to interpret critical thinking behaviour through observation in Shana’s class. This was because students were always engaged in individual art practice tasks and the teacher engaged in private one-on-one conversations with students. In contrast, there was more open class communication in Felicity’s class.

Notably art theory/art history (7) is emphasised in Year 10 student interviews but not in observations transcripts. This illustrates the fact that students spoke about their art theory and history fairly extensively in interviews but observations of lessons recorded the absence of any criticism/theory/or history activities during lessons. This also made a

large impact upon how students could be seen to apply and develop critical thinking skills. For example, students could not be observed comparing and contrasting written or visual information to form a hypothesis about some aspect of art, they could not be observed making aesthetic judgements about other artists' work or discussing social issues as they related to art concepts and ideas and presenting arguments to support their opinions. Despite this gap, there were occasions when students appeared to be applying critical thinking strategies in the development of their artworks.

Art making/artworks (5) was an emphasised category in both Year 10 observation and interview transcripts and this reflected the primary role it had in teaching and learning practice. In general, art practice tasks were on-going longer term projects. The major project for the term required students to design and make their own interpretation of the 100-figure sculpture mentioned previously. This project occupied nearly half the school term (4-5 weeks) and was observed to engage students in critical thinking. A number of the completed sculptures effectively engaged the observer because they had started with what Walling (2000: 25) describes as 'an argument between the audience and observer'. The arguments represented in these works were visual statements about aspects of the human condition. For example, human tendencies towards selfishness and ambition were clearly represented in Natalie's work. In her piece she had formed a tower of people struggling and reaching over each other and climbing for the top, the peak being the ultimate goal – success. There were one or two student pieces in which the work referenced other works of art and texts, such as, Anne's piece titled, *The Handmaiden's Tale*. The novel of the same name by Canadian author Margaret Atwood, was first published in 1985. Anne's work built on the novel's themes of women in subjugation

against a backdrop of the establishment of a totalitarian theocratic state. The human figures in Anne's sculpture were female and male dancers waltzing, both locked together and placed in spiral formation with other dancing couples ranging in size. There was a look of regimentation and order to the assembled couples and the majority of these had a white glaze colouring although some were red, perhaps symbolising that these few were the fertile female handmaidens who were effectively the sexual slaves of men in the Republic of Gilead (the fantasy American futuristic new order in the novel). Sexuality was suggested in the way that the male and female figures were almost fused together at the hips in Anne's piece. The final artwork could not be interpreted, as simply about 'creative self expression', rather it required analysis and synthesis of the central ideas and themes in the original text, and the translation of these ideas into a visual genre.

As Pohl (2000b: 28) states, 'Critical thinking is particularly important in tasks that require some degree of planning, forecasting, communicating, decision making, and/or evaluating'. The art practice tasks students were required to complete appeared to place high demands on students to independently plan, make decisions and to some extent evaluate the effectiveness of their efforts, particularly during the '100 figure' project work. They organised their own materials and workspace and could be observed collecting unfinished work from shelves, referencing their individual visual arts process diaries, collecting tools and equipment and sometimes requesting materials that were not readily available before proceeding to work. Students were often at different stages in forming their sculpture and progress slowed when there were unexpected setbacks in the process, such as, breakages in kiln firing. However, not all students in class

demonstrated an aptitude for planning and decision making during the project. For example, there were students who repeatedly failed to bring in a visual arts diary that contained much of their planning and preparation, did not prepare or plan their designs well enough before proceeding, shifted between different courses of action and found it difficult to decide upon one and frequently waited for confirmation from the teacher about how they should proceed. Students who behaved in this way were in the minority but supporting them in their work took the majority of the teacher's time in lessons.

Felicity's lessons were quite different from Shana's in that only about 60% of lesson time involved art practice. Table 6.4 shows that artmaking (5) was an emphasised category in observation data but not in the student interviews. Part of the reason for the students making few references to their own art practice may have been because it was used largely as a tool for teaching art theory and history content rather than being related to students' own experiences. Art history alternated with art theory lessons in a cyclical pattern throughout the school term. During art theory (design elements like size and proportion) or art history (Ancient Egyptian art) lessons students completed structured art practice exercises.

A great deal of the work that students did in art history lessons was derived from materials in a textbook called, *An Introduction to Western Art: From Caves to Canvas* (Williams & Wilson 1998). Writing, transcribing and colouring kept students' attention although these activities required no application of critical thinking. Any critical thinking noted in art history lessons was demonstrated during discussion sessions. Teacher-led class discussions occurred in most lessons and ranged from two minutes to

twenty minutes in length depending largely on the level of student interest. Discussions also moved freely from one topic to another, for example, dialogue about social hierarchy, class and representations of people in Egyptian frescos moved on to other cultures and times, with ideas about change in body image and visual representation of beauty in popular culture emerging within the discussion.

Generally, students showed a commitment to these discussions and on occasion asked critical questions, for example, one student asked why children were depicted like very small adults in Egyptian paintings. A few students in class appeared to most enjoy times when the teacher presented the class with a puzzle that required deduction. One example of this was when the teacher asked, ‘why do you think they put the pyramids on the west bank of the Nile?’ There were various propositions put forward, such as, ‘it was away from civilization’, or ‘there might have been flooding problems on the east side’, or ‘the stone was more available on that side of the river’. Unfortunately, students did not often extend their problem solving because opportunities to elaborate on student hypotheses were cut short when ‘correct’ answers were presented too quickly by the teacher.

Class discussions were also a feature of theory lessons and student occasionally were asked to decipher stylistic differences in artworks. For example, when students were shown an abstract expressionist painting by Wassily Kandinsky, students compared this to an Egyptian fresco. In reviewing the two artworks they deliberated on the individual characteristics of the works. One student, for example, noted that Kandinsky used a blend of colours that were mixed and overlaid while the Egyptian fresco painter used

pure blocks of single colour. Discussion then involved students responding to teacher questions about how different characteristics in the paintings reflected the time and artistic traditions to which each artist belonged. This was clearly much more difficult for students to answer and there were no students who attempted to offer a hypothesis about how each of the works reflected the social context/time in which it was made.

On another occasion, however, a few students did put forward hypotheses about art when they were directed to look at a portrait painted by William Dobell of his friend Joshua Smith (a controversial winner of the Archibald prize). Since the discussion followed a session on the use of size and proportion in compositions (the thread of a few theory lessons), students came to different conclusions about who the figure was, what he did (work), what the artist wanted the viewer to notice about the character of the person and why he exaggerated the size of parts of the subject's body with the head much smaller in proportion to his hands. In respect to the last point, one student stated that she believed it was because the hands were an important aspect of the man in the portrait and that he must have had some kind of work that involved using his hands.

Through the comparison of Kandinsky's painting with an Egyptian fresco and the analysis of Dobell's portrait, the students exercised knowledge they had gained through other class activities and transferred this to new learning situations. Provided with different cases they had to make connections between art theory, history and practice, effectively synthesising their learning.

Students' Practices: Creative Thinking

The fact that the category creative/creativity/creative thinking was an emphasised category in observation report transcripts in Shana's class and not in Felicity's class suggested that there may have been differences in the level of creative behaviour exhibited in both classrooms. In part, the higher level of performance-based practice in Shana's class could explain this difference because there was greater scope for individuals to engage in creative processes associated with creating artefacts. Though the teacher set the parameters and boundaries of each of the projects, students determined how the work was formed and presented. Despite planning and designing prior to producing their sculpture, the reality was that much of the work never went according to plan. On the whole students demonstrated they were capable of being flexible in their thinking because they improvised. There were instances where students were noted to be reflecting upon their work to decide upon further directions to take, particularly when things were not proceeding according to expectations. This process of reflection required them to make on-going aesthetic decisions based on analysis and evaluation, both of which are more analytical aspects of creative thinking (Sternberg and Williams 1996). Sometimes the unanticipated effects they had created during the production process became interesting to the students and caused them to change their conceptions of the piece. At other times the results were not satisfying and required intervention to rectify design problems. Sarah for example, experienced problems designing an image (abstracted figures in space) to be used in her collographic print. She had created golden ball shapes with ink and brush as part of a fantasy scene of figures in outer space but was unhappy with the interim results. Her plan had been to

repeat rounded spheres in her composition but when she began to create these they did not achieve the effect she wanted. After thinking about what she had done, she found she was using the wrong technique to paint the spheres. She had been painting across the whole form and this flattened her forms. By changing her brush technique, working in a circular motion and using tonal qualities, she managed to create the illusion of a three-dimensional shape in the spheres. Sarah had effectively tested her hypothesis about technique, made a choice about the solution to her visual problem and applied this to her design. This was a small example of solution finding behaviour, a key aspect of creative problem solving (Starko 2005).

Exploration of ideas and the search for alternative conceptions largely seemed to occur within informal conversations between peers. For example, Anne discussed some of the alternative ideas for her piece, 'The Handmaiden's Tale', with her friend Natalie. During this conversation, they discussed Anne's selection of colour and the symbolism that might relate to certain choices, the placement of figures and the effect this might have in interpreting the narrative of the original story, and whether more was needed to complete the piece. Conversations like this appeared to be normal practice rather than in any way unique. Creativity and the capacity to act in creative ways is expanded through developing networks of connections within one's own mind as well as with other minds in a learning community (Fisher 2002). Dialogue played an important part in forming networks so that when students were offering ideas and suggestions to other students, it stimulated creative development and broadened the scope of their work. Peer group work, evaluations and discussion groups may have afforded even more opportunities for student engagement in creative thinking.

Students interviewed in Felicity's class had frequently mentioned that they enjoyed art because art practice allowed them to use their imagination. However, in the course of observing lessons, students had few opportunities to use their imagination in art production tasks. There was little role for imagination because the form and structure of tasks were largely pre-determined and focused on more literal representations of information, such as the enlargement of a cartoon image. Disciplinary knowledge within art practice was simplified to basic concepts and principles. This meant students were not self-directing or self-determining the work they produced and it gave them few opportunities to sort through real problems or to deal with more complex connections between ideas.

Students were observed consistently working individually rather than in groups or pairs. Each showed wide variation in their level of confidence and skills when approaching and completing practice tasks. This was also reflected in the time it took for the completion of tasks with some needing up to three times as long as others to complete one task. The final products, although very similar in their treatment of subject matter, were distinguishable largely by the technical mastery of each student. The only art practice exercises that students were observed applying creative thinking strategies to were in lessons devoted to clay modelling of the pharaoh's tomb and a lesson on monoprinting that involved free choice of any imagined Ancient Egyptian scene. Students indicated that these were their favourite activities as they involved media that they were unfamiliar with and they could individualise their work. Emma and Paula had explained that they were aware their teacher had not been happy with the clay task

because ‘it was too messy’ and this meant she was often quick to lose her temper if they didn’t follow her instructions very carefully. Nonetheless, students demonstrated that they responded very well to the unique sensual and expressive qualities of different media. They were given time for some experimentation and research prior to working in an extended way upon the final piece and adapted well to the demands of that media, learning about the plasticity of the material and the problems with weight bearing for hollowed forms. In clay modelling they were synthesising their prior learning about Ancient Egypt with art practice to form an authentic looking pharaoh’s tomb and their understanding of the ritualistic practices of burial were clearly represented in the degree of detail, the symbolism and the ceremonial objects they managed to incorporate in their three-dimensional sculpture. Knowledge was effectively re-constructed by the students because they had to grasp the underlying essence and meaning of the topic at hand.

Conversations in class throughout art practice tasks were normally not focused on the work in process and students did not collaborate with each other to share ideas or offer suggestions for alternative treatment. The teacher similarly, did not tend to probe them in one-to-one exchanges and never asked them to articulate their ideas or plans for work. She acted more in a support role, trouble-shooting when students ran into technical difficulties. There were also no times during lessons when students would collectively reflect on the work produced and provide feedback to each other about their personal response and interpretation of what had been created. Work was largely completed in workbooks and put away at the conclusion of the lesson. This removed opportunities for students to inter-connect and share ideas or their experience of learning within each of the practice tasks.

Summary Reflection: Secondary Students' Practices

In Shana's classes it was only possible to observe the application of critical thinking in students' art practice and art products. The absence of class discussion and debate about any of the controversies that surrounded their chosen topic, the fact that no other professional artist's work relevant to the project themes was introduced to the students, and the lack of organised critique of ideas and artworks, meant that art production largely occurred without reference to knowledge and understanding developed through art aesthetics, art history or art criticism. Consequently, there were few opportunities for students to demonstrate critical thinking in verbal or written form. It also meant students were not considering how their own artworks fit within the wider context of the field of art practice.

By contrast, there were opportunities in Felicity's lessons to apply critical thinking skills in class dialogue. Largely this was a result of critical questions the teacher used in art theory and history lessons to probe students to communicate their ideas, feelings and opinions. The majority of students actively participated in these sessions and this enabled them to practise synthesising and analysing information in both written and visual texts. However, throughout class dialogue it was observed that there were definite limitations to students' critical thinking skills. When discussing art concepts students most often experienced problems in clarifying and articulating their own opinions about information or ideas. Students were never noted to lead class discussion or extend points of conversation by responding to each other's comments. A pattern was generally established whereby interaction was between individual students and the

teacher. Apart from these forays into critical dialogue students followed predictable step-by-step procedures and students' work often involved transference and memorisation of facts and information.

Students in Shana's class spent much of their time preparing for work physically, mentally and conceptually. Predominantly this was a factor of the nature of the work they were required to complete. Creative decisions and choices were integral to the extended project work these students were engaged in.

While there were some opportunities for critical thinking in Felicity's class – albeit limited – the opportunities for students to demonstrate practices that involved creative thinking were even less. As explained previously, the particular pedagogical focus chosen by the teacher was designed for teaching rudiments and integrating curriculum strands. The lack of activities that involved free exploration, chance encounters, conceptualisations and use of metaphoric language or analogies, meant students were working more within common-place and predictable structures. Students were not observed inventing things or exploring new ideas. The lack of any problem solving focus to tasks meant that students were not challenged to apply creative thinking skills. They did not have to make creative decisions about the selection of materials, concepts or themes or their intended outcomes.

The perspectives and practices of teachers and students towards critical and creative thinking as illustrated in the two secondary school case studies discussed in this chapter revealed a number of divergent practices in art teaching. Nonetheless, aspects of both

case studies clearly demonstrated a complex set of strategies and behaviours that illustrated how secondary school teachers and students sometimes engaged with higher order thinking skills in the art classroom. The next chapter moves to an examination of the two primary school case studies and presents data and analysis in a format similar to that just explored. Like Shana, Felicity and their students, the teachers and students described in the forthcoming chapter all demonstrate a variety of perspectives and practices towards critical and creative thinking.

Chapter 7

Presentation of Data and Analysis of Primary School Case Studies

This chapter presents data from both primary school case studies and analyses this data to explore the nature of critical and creative thinking in each situation. As was the pattern established in Chapter 6, this chapter begins with a brief general description of each case study site before turning to an analysis of the data. The presentation of data is organised in a manner that addresses the research questions. Consequently, the first part of this chapter examines the primary teachers' theoretical perspectives and practices while the second part examines the primary students' perceptions and practices. The data sources and categories (in table form) used in the analyses are shown prior to discussion of data. There is also further explanation of the way in which the discussion draws on each of the categories that appear in the four tables. Pseudonyms have been used for all teachers and students in the cases.

General Description of Primary School Case Studies

The case study 3 group was a composite class made up of Years 4, 5 and 6 students taught by Maureen Olley. The school itself was situated in northern NSW and was geographically distant from major town centres. During the time of fieldwork the school had an enrolment of around 35-40 students. There were two full time teachers, one of whom was the school Principal, as well as a part time teacher and an Aboriginal support aide. Due to the small numbers of students enrolled at the school, there were just two class groups, one primary and one infants class. Both were organised as composite (or multi-age) classes. Within the small student body there were a number of family groups

and siblings that spanned the school's age range. In fact, siblings often belonged to the same class group.

The composite primary class had an enrolment of twelve students and there were two sibling pairs amongst the group. While the majority of students were in Year 4, there were also three Year 5 students and one Year 6 student. Although students were at varying developmental levels the same art lesson tasks were arranged for the whole class group. The students themselves did not appear to be overly conscious of their different level of achievement although they commonly identified two of the older boys as being the best artists in the class.

Maureen Olley was an experienced generalist primary school teacher and although she had always taught art and craft, she said her interest in teaching the subject had developed greatly in more recent years. Maureen had been teaching the primary composite class on a regular part time basis for some years. The regular teacher for this class group was the school Principal and he required two days of release time to attend to administrative duties.

Visual arts learning for this class group had to some extent been informally incorporated into the weekly curricula and artmaking was sometimes incorporated in other subject study. Maureen conducted what she called 'formal visual arts lessons' each week. Her reasoning for describing them as 'formal' was twofold. Firstly, they occurred at a regular scheduled time and secondly, they had a particular subject focus

on the visual arts. Maureen's art lessons were regularly held on Wednesdays (one of her two teaching days at the school) and were always scheduled after lunch for thirty minutes.

Within the school Maureen was recognised as the arts coordinator and her leadership in planning school-wide arts events was evident when visiting the school. One of the events she coordinated was a regular weekly display of photographic works and other art reproductions placed on the walls of an entryway area in the main school building. Maureen explained that the exhibit was arranged according to themes and that she was responsible for creating this changing visual display. One of the display themes, for example, was 'houses' and the images depicted things such as castles, interiors, urban dwellings and country cottages. During the entire period of visits over the school term it was noted that all school students spent around five to ten minutes with Maureen sitting in front of the school display boards before they left the school grounds to go home. She talked with them about what they could see displayed and students were invited to comment or ask questions if they raised their hand.

The overall theme or subject matter for art lessons in Maureen's class during the school term was 'how artists use colour'. She had planned a sequence of ten lessons at the start of the term that centred on this one theme. In reviewing her written teaching program for the term, it appeared that the main concept she wanted students to reflect upon was that artists use colours in certain ways for different reasons and to create different visual effects. Most of the lessons involved painting and drawing activities but there were

other art forms introduced, such as, wool spinners, cellophane two-dimensional constructions and computer graphics. The artists featured in the ten-week program included: Paul Cezanne; Mark Rothko; Claude Monet; Casper David Friedrich; Joan Miro; Edvard Munch and Piet Mondrian.

The case study 4 was a Year 4 class taught by Jane Armstrong. The school was situated in the heart of a reasonably large country town in northern New South Wales. At the time of research there was a student enrolment of just over four hundred students at the school. Jane Armstrong taught a Year 4 class on a full time basis while also acting as one of three assistant principals at the school. Jane was a senior primary school teacher who had been on the teaching staff of the school for a number of years. The coordination of the Creative Arts Key Learning Area (KLA) at the school was shared among a few people, including Jane. Creative arts coordination within the school was divided in terms of three different types of responsibilities, such as, management, preparation of art events and support liaisons between staff. Jane did a little of all three types of duties.

There were twenty-eight students enrolled in Jane's Year 4 class, nineteen boys and eight girls and these students were of mixed ethnic background. Research visits began the week after the fourth term started. Throughout the rest of the school term art classes occurred once a week and their duration was anywhere between 45 minutes and 70 minutes. During fieldwork the teacher had agreed to hold weekly classes despite the fact that art lessons were not normally regularly scheduled. These were held at a time most

convenient for both teacher and researcher and this happened to be every Wednesday either just before or just after lunch.

There appeared to be no formal written teaching plan drawn up at the start of the term for forthcoming art lessons. After observing lessons over the entire school term it was concluded that the most prevalent theme connecting activities seemed to be Australian landscape, particularly focusing on trees and fauna. However, four lessons had no particular conceptual link to this topic, as they were either free choice artmaking activities or depicted other defined subject matter. Over the school term the suite of lessons included both art appreciation and artmaking tasks. The majority of lessons involved painting and drawing activities although there was one paper collage task. The artists studied in the ten-week program included two artists: one a female contemporary Native American artist (original prints) and the other, the French impressionist artist Georges Seurat (reproduction print).

Primary Teachers' Theoretical Perspectives and Practices

Data Sources for Identifying Primary Teachers' Theoretical Perspectives

The interviews conducted with both teachers were the focus of analysis for determining their theoretical perspectives in regard to critical and creative thinking. Table 7.1 presents a list of those categories which had a semantic connection to critical and creative thinking and were also emphasised categories (those with over 5% of words) for each of the teachers interviewed in case studies 3 and 4.

Table 7.1 Emphasised Categories in Teacher Interview Transcripts for Case Studies 3 and 4

Case 3: Maureen Olley	Case 4: Jane Armstrong
1 – art apprec/art criticism	1 – art apprec/art criticism
28 – student motivation	28 – student motivation
30 – student artistic development	30 – student artistic development
31 – personal value, feelings about art	31 – personal value, feelings about art
35 – space and time for art	35 – space and time for art
36 – student behaviour or response	□
38 – views about content of syllabus	38 – views about content of syllabus
46 – teaching methods	46 – teaching methods

As seen in Table 7.1 there were eight categories emphasised by Maureen Olley and seven categories by Jane Armstrong. Seven of these were commonly emphasised by both teachers in their interviews and these rows are shaded in grey. The main difference between Maureen’s and Jane’s interview was the different emphasis upon ‘student behaviour and response’ (36) during art lessons. The reason the categories ‘intellectual/ logical/critical thinking’ and ‘creativity/creative thinking’ do not appear in Table 7.1, is that the primary school teachers themselves either did not independently use these terms, or used them infrequently.

Maureen talked a great deal about her views of the syllabus (38) – 20.9% of total words – and art appreciation (1) – 13% of total words. Jane talked mostly about topics related to students’ artistic development (30) – 25.5% of words – and her personal values and feelings about art (31) – 14.7% of words.

Specific statements coded within categories ‘art appreciation’ (1), ‘students’ artistic development’ (30), ‘personal values and feelings about art’ (31), ‘students’ behaviour and response’ (36), and ‘views of the syllabus’ (38), were used for citation and analysis below because they revealed something of teachers’ theoretical perspectives.

Teachers’ Theoretical Perspectives: Critical Thinking

The primary teachers did not articulate what could be described as a ‘theory’ of critical thinking in their interviews. In part this was because both Maureen and Jane tended to talk about ‘thinking’ in more general terms without making distinctions between different modes of thinking. Furthermore, their views about cognitive aspects of art learning were not clearly defined, rather they were often situated within discussions about individual student performance and behaviour.

Maureen did not independently use the words ‘critical thinking’, however, her understanding of what was involved in critical thinking was reflected in her response to a particular question. When asked about whether she thought students were able to demonstrate critical thinking in art class Maureen had said,

Yes, well...I’m not sure...I think they are becoming better at understanding and expressing their own thoughts and feelings in art. They come up with some interesting questions when I am showing them new artworks and I notice they quietly think about things that we have talked about in class before. I know this because they will remember something I said and bring it up in other conversations down the track...when they see something similar (Case study 3 T.T. II. 434- 40).

It was apparent that Maureen was not confident about the topic. Nonetheless, her ideas about critical thinking were implicit within her response. One can see five key parts within the dialogue that provide some insight into Maureen's interpretation of what student actions demonstrated their ability to think critically. She implied that critical thinkers might be those who, understand their own thoughts and feelings, express their own thoughts and feelings, ask interesting questions (when shown something new), think quietly about things and remember information to be able to apply it again at a later time. There are a few qualifications in Maureen's assessment of the learning situation, such as: 'well I'm not sure' and 'I think they are becoming better'. Maureen's comments indicate that she had not developed a conceptualisation of critical thinking.

The words 'thinking' or 'thoughts' appeared at regular intervals when describing 'students' learning behaviour and responses' (36) or 'students' artistic development' (30) within both teacher interviews. Examples of phrases that included the word 'thinking' are: 'thinking deeply', 'good thinking', 'a change in thinking', 'correct thinking', 'quietly thinking about things', 'influencing their thinking', 'thinking about what you are doing'. None of these words particularly signalled an awareness of critical thinking processes, although there were qualitative differences in the value attributed to thinking. 'Good' is a curious descriptor for thinking in that all thinking must inherently be good but when Maureen used the term, the conception appeared to be that it was better or an above average level of thinking. For example, Maureen said,

When you look at how they managed to show the subtle colour changes when they observed the same objects in different light

sources you realise there was a lot of *good thinking* happening (Case study 3 T.T. II. 191- 94).

On this occasion although Maureen herself did not connect these actions to constructs of critical thinking there did seem to be a conceptual link, albeit a weak one, to critical thinking instruction. Maureen placed an emphasis on discovery through observation and the testing of a hypothesis (the effect of light conditions on objects) in a visual form. In this sense students might have developed critical insights based on close observation, and then independently applied these concepts in their work (Paul 1992: 400).

It was even more difficult to ascertain whether Jane had developed any theoretical perspective of critical thinking in art because she did not propose any examples or definitions. The amount of talk in Jane's interview that related to the function of art in helping to improve particular students' self-esteem, or as an alternative way for students with learning difficulties to express themselves, suggested she viewed engagement with art as a way of modifying social behaviour and building self-esteem. While both teachers referred to positive changes in levels of student confidence as a result of successful art experiences, the fact that Jane did this more frequently suggested she placed a higher value on this aspect of art learning. In evaluating the primary teachers' theoretical perspectives it appeared that both were fairly oblivious to constructs of critical thinking, specifically those that might relate to art education.

Teachers' Theoretical Perspectives: Creative Thinking

Maureen and Jane referred to 'creativity' and occasionally 'imagination' in art rather than focusing specifically on 'creative thinking'. Although the concept of creativity was not discussed at any length by either of the primary teachers (it was not an emphasised category) it was raised in the context of discussing student art practice. Maureen, for example, described creativity in relation to making art when she said,

All the students are learning to be more *creative* when they are making art because there are so many ways they can express and communicate their ideas. To express things in a visual way means they have to decide things like, how will it look? Is it showing what I want it to show? (Case study 3 T.T. II. 237-41).

Maureen's statement implies that creativity is an aspect of visual communication requiring the student artist to translate their ideas into visual form and communicate them to a responder. It was also noteworthy that Maureen alluded to questions students might ask themselves in the process of making art and these questions were conceived of as inner mental thoughts.

Jane appeared to believe that creating art naturally involved creativity. This conclusion was formed largely through studying her response to a query about the role of creative thinking in her art program. She said,

I guess my main philosophy is that everyone can be considered an artist; everyone can do something that is creative and unique to them because there are no failures in art. I tell this to the kids all the time and I think it has a really positive effect on what they think about themselves (Case study 4 T.T. II. 194-98).

The fact that artworks were individual to the student artist appeared to be justification for not placing value judgements on what was created. Part of the reason for her stance about 'there being no failures in art' could be traced to an earlier comment Jane made about herself in the interview. She said,

I myself had a poor view of my own artistic ability because at school there was never any favourable view of my work and I was sure I was hopeless at it. I started to get more interested in art much later in my adult years when I realised there were lots of ways I was good at art...and crafts (Case study 4 T.T ll. 183-90).

Jane had viewed her own latent self-discovery of her artistic ability as empowering. However, the fact she had been made to feel inferior was, in her mind, a poor reflection on her own art training. This appeared to influence her attitude that creativity can be encouraged if there is no preconceived idea about what constitutes success or failure. It seemed that promoting creative self-expression was Jane's primary goal and she viewed artmaking as an outlet for releasing the creative impulse. Everything each child made was seen as 'unique to them' and for that reason Jane believed they should be free of the inhibitions and restrictions imposed through scrutiny and judgement. This could be interpreted as a common view of creativity, however, it was also noted that she singled out three students in the class and described them as either 'artistically talented', or talked about them 'producing really creative work' or 'quite exceptional' work. Such comments suggest she did make personal judgements about the level of creativity demonstrated in student art practice but this wasn't made explicit to students. Jane's concept of creativity was, as this point illustrates, often confused and contradictory.

Summary Reflection: Primary Teachers' Theoretical Perspectives

Neither Jane nor Maureen emphasised the role of critical thinking in art. Maureen described some student behaviours that she felt might be indicative of critical thinking in art. However, Maureen had not really formed a theoretical conception of critical thinking. Both teachers talked about how art influenced student 'thinking' or 'thoughts' but they were not inclined to distinguish lower order thinking from critical thinking.

There were points of similarity between the two teachers in regard to theoretical perspectives of creativity. Both believed art had a role to play in developing creativity. They also both believed that the generation of art required the translation of ideas into a visual form and this meant students were engaging in creative thought. Jane seemed to believe that making value judgements about what was more creative amongst students work would act as a disincentive for less talented students. In her personal assessments of artworks however, she seemed very aware that some students were more likely to produce creative work than others. In evaluating teachers' theoretical perspectives, it appeared that both primary teachers did not elucidate an extended theory of creativity or creative thinking in art.

Data Sources for Identifying Primary Teachers' Practices

Primary school observation and teacher interview transcripts provided information about teaching practices. Table 7.2 lists emphasised categories within both data sources.

Table 7.2 Emphasised Categories in Observation and Teacher Interview Transcripts for Case Studies 3 and 4

Case 3: Maureen Olley – Observation data	Case 3: Maureen Olley – Interview Data	Case 4: Jane Armstrong – Observation data	Case 4: Jane Armstrong – Interview data
1 – art appreciation	1 – art apprec/art crit.	1 – art appreciation	1 – art apprec/art crit.
5 – artmaking/ artwork	□	5 – artmaking/ artwork	□
□	28 – student motivation	□	28 – student motivation
□	30 – student artistic development	□	30 – student artistic development
□	31 – personal value, feelings about art	□	31 – personal value, feelings about art
35 – space and time for art	35 – space and time for art	□	35 – space and time for art
36 – student behaviour or response	36 – student behaviour or response	36 – student behaviour or response	□
□	38 – views about content of syllabus	□	38 – views about content of syllabus
46 – teaching methods	46 – teaching methods	46 – teaching methods	46 – teaching methods

Only two categories were commonly emphasised in all data sources and these rows have been shaded in grey. ‘Art appreciation’ (1) was a concept that related to 34% of words in observation transcripts and 13% of words in teacher interview transcripts for case 3. In case 4 the emphasis was 17% of words in the observation transcript and 9% of words in the teacher interview. This difference indicates that while art appreciation was a significant concept in both cases, it was more discussed and practised in Maureen’s class. Maureen talked only slightly more in interviews about ‘teaching methods’ (46). Observation transcripts also provided detailed information on teaching methods – 10% of words for case 3 and 20% of words for case 4. The only transcript in which ‘student behaviour and response’ (36) was not an emphasised category was the

interview with Jane, the case 3 teacher. Jane did not tend to single out particular students for comment or reflect upon their behaviour as often as Maureen.

‘Artmaking/artworks’ (5) was an emphasised category in case 3 (37%) and in the case 4 (31%) class. This is indicative of the fairly high levels of activity involving artmaking during lessons in both case groups. The category, ‘space and time for art’ (35) was a significant category in observations transcripts for case 3 (9%) largely because these factors appeared to impact more significantly upon critical and creative engagement in this case study site.

Specific statements coded within categories ‘Art appreciation’ (1), ‘Artmaking/artworks’ (5), ‘space and time for art’ (35), ‘student behaviour and response’ (36), and ‘teacher views about the syllabus’ (38), were used for citation and analysis below because they revealed something of teacher practices for critical and creative thinking.

Teaching Practices: Critical Thinking

Maureen talked about developing thinking skills more through art appreciation tasks than through art practice. For instance, Maureen observed that students’ ‘depth of thinking’ was fostered through art appreciation and, after they had been on a visit to the local art museum, she related how ‘art provoked students to think’. In response to a question about whether she thought undertaking art study generally helped to develop thinking strategies and skills, Maureen said, ‘Definitely, I think art has a valuable role in this’ (Case study 3 T.T. ll. 362-3). Furthermore, she went on to explain how the work

they had been doing in art appreciation had not only given them a chance ‘to discuss their thinking’ but that it had ‘opened up another world’ for many of them (Case study 3 T.T. ll. 387-88). Her comment was that,

The students in my class are usually kids who live on farms and don’t often get the chance to travel...so they have limited experience of other ways of life (Case study 3 T.T. ll. 392-94).

She explained that when she selected artworks for them to study in class she was conscious that,

They are able to see how the artist sees things, through their eyes, and they have an opportunity to compare their own experiences with what they see. They are often puzzled by artworks, but I think that is good because they have lots of questions and they really want to find out the meanings behind things. Their language has improved as well so that by now they have enough language to be able to express their ideas...you know it surprises me how fast they pick up the language...like Sam talking about the way that Cezanne used perspective the other day (Case study 3 T.T. ll. 401-11).

The fact that Maureen believed the students often searched for meaning for what they observed in artworks suggests she believed art appreciation tasks encouraged mental curiosity and questioning amongst students. Stimulating curiosity and questioning is however, not necessarily indicative of teaching for critical thinking. The relationship between students’ own life experience and the life-world presented in artworks were sometimes tenuous, according to Maureen, but it was apparent she thought their vicarious experience was broadened through studying artworks. There appeared to be little evidence however, that Maureen conceived of a critical dimension to this kind of activity.

Despite Maureen's inability to propose a theory of critical thinking in relation to art activity, observations of her lessons suggested there were aspects to her lessons that encouraged critical thinking. Observation transcripts describing one lesson, illustrated how students may have engaged in critical thinking. At the start of her lesson presentation, Maureen described the focus of the lesson as being on 'colours that shout'. Artworks by Joan Miro and Edvard Munch were used to illustrate this focus. 'The Scream' by Edvard Munch was cleverly chosen because the colours are vivid and the figure is open-mouthed and appears to be shouting. Once the teacher had described a little about the works, she encouraged analysis of the work by asking questions. She said, 'What do you see in the painting?' 'What are the people in the painting doing?' 'What do you notice about the lines in this work compared to the lines in the other?' 'Why do you think the artist used distorted wavy lines in this one?' 'What colours are used in this work?' 'Why do you think the artist has chosen these colours?' 'What feeling do we get from the colours and the lines?' 'Is this a real portrait of a person, could you recognise him after you looked at the picture?' 'Why not?' Following this focus on Munch's painting, Maureen turned attention to the painting by Joan Miro. She said, 'This artist has used very different techniques from the other, what do you see that is different about the lines and shapes?' 'Can you see any of the same colours in this picture as the other one?' 'Are they warm or cool colours?' 'Why did I call these colours 'colours that shout''(Case study 3 O.T. II. 200-28)?

These were probing questions that encouraged students to examine the images critically and to note details. Students' noted significant similarities and dissimilarities between

artworks through comparing them, analysing the content and methods employed by artists, and made inferences about the artist's intended message based on information contained within the image. These processes demand the use of critical thinking skills (Paul 1992: 394). However, during these dialogue exchanges the students were frequently unable to give direct responses to the teacher's questions and in these circumstances Maureen answered the questions herself. Wait time was also short between questions as Maureen was rushing to finish and move on to the artmaking activity that followed (Case study 3 O.T II. 230-5). These limitations to critical thinking can be attributed to the fact that Maureen did not have any conscious theoretical framework informing her practice.

Jane related how art appreciation activities helped promote student thinking but she confined the purpose of art investigations to forming 'ideas' for their own creative work. There were a few occasions when Jane described how she framed art appreciation but, in the main, her interest appeared to be in developing art practice skills. At one point in the interview when Jane was describing her approach to art appreciation she said,

I believe art appreciation has to be pitched to the level of the kids and that it is important to use their own work and the work of others in the class as the main focus of art appreciation activities. I wouldn't try and teach them lots of facts or spend time analysing artists' work but I get them to think about what they are trying to do in their own art and think about what works and doesn't work so well in the approaches they take. So I guess we do art appreciation but not in a formal way (Case study 4 T.T. II. 63- 75).

It is clear from this statement Jane was not interested so much in what she described as more ‘formal’ art appreciation exercises. These were understood to involve ‘analysing artist’s work’ and teaching them ‘lots of facts’. Her reasoning for framing it in her own fashion was that that they were likely to learn more at this stage in their artistic development through reflecting on their own and their peers’ work. This approach was also noted in observations of her lessons.

Most of the discussion time devoted to thinking and talking about artworks was spent on students’ own works. A number of the questions Jane asked students during these discussion times appeared to be designed to foster reflection and revision of ideas and techniques. She asked questions, such as, ‘What works in this artwork?’, or ‘What influenced your decision?’ and ‘Did you notice anything interesting about the process?’ These questions encouraged the application of metacognitive strategies. This was illustrated at the end of an artmaking activity that involved students painting an abstract artwork. Jane asked students, ‘What did you all feel about that lesson?’ ‘Were there any problems?’ ‘What did you think about your own painting?’ ‘If you had a chance to do this again what would you do differently?’ ‘There will be a chance to do this again next week so think about what you discovered, what might you do differently?’(Case Study 4 O.T. II. 180-88) This kind of questioning had the potential to facilitate critical thinking because students were expected to analyse and evaluate their own practice and consider ways to further refine their method of working. The practice of doing a follow up lesson on the same topic also supported the transfer of new knowledge gained from the first experience of doing the task.

Teaching Practices: Creative Thinking

Maureen related a few aspects of her teaching that had some bearing on how she encouraged creativity in art. Maureen saw elements of the recently introduced New South Wales primary creative arts syllabus as positively influencing her students' art practice so that they were, in her opinion, 'producing more interesting and creative work' (Case study 3 T.T. 1. 25). When asked further about what her view of the new syllabus was she said,

I think its great. The children are able to do more interesting and creative work whereas before there was always lots of copies of the same thing. The new syllabus means we can do art appreciation and that's much better than before. In the past it was the children's own perspective...that was a bit narrow but now it's broader because they can see how artists work and get different ideas. I know there can be a lot of copying of artists' work...well I know other teachers complain about this...but they can still be very individual and express themselves. Their work is better and they are starting to do very different things from each other. They are gaining more confidence I think and you can see that by looking at the works hung around the room, there aren't any works that look the same (Case study 3 T.T. 11. 25-50).

Clearly, Maureen credits the introduction of more art appreciation in her art program as creating a greater diversity of creative outcomes in regard to student art practice.

The demands of teaching art in the context of a multi-grade class became apparent when Maureen talked about the students in her class. At one point in the interview Maureen commented on the intellectual resourcefulness of two of the oldest, and in her opinion artistically talented students, in working on their own artworks. She said,

They hardly need much direction or help nowadays because they have developed a lot of skills and have a good idea about what effects they can get in their work. I try and give them a focus...a start on how it can be done...you know using different styles or approaches and they really appreciate that but they can still decide for themselves how they are going to do things. They already have developed a bit of their own style...you know you can recognise their work because it has a special look to it. Their work is really very creative. (Case study 3 T.T. II. 448- 56).

Her comments suggested that for older students Maureen envisaged herself acting somewhat as a facilitator of their learning. Although Maureen did not use the word 'facilitator' herself, this seemed a good way of conceptualising her descriptions of her role. She described her responsibilities as largely involving the creation of a framework, or at least a starting point, for jumping into art practice. Her main concern appeared to be that she ensured the older students had enough of a repertoire of skills and techniques that they could self-manage and make their own artistic decisions. However, in singling out the older students and referring to their work as 'creative', there was an implication that this was not the case for younger students in the class. It was however, difficult to determine whether Maureen believed that greater technical expertise equated to higher levels of creativity in regard to student art practice.

Maureen's responses in interviews suggested that she linked students' artistic growth to her own level of art skills and knowledge. Her efforts to improve this personal skill base had resulted in her voluntarily participating in an in-service teaching project, called *Beyond the Frame* and other subsequent professional training workshops. In her opinion, these had been 'positive experiences' that benefited her students 'in terms of expanding the creative scope of their work' (Case Study 3 T.T. II. 70-1).

In observations of Maureen's lessons the aspects of her teaching that appeared to contribute most to creative development were those in which clear conceptual connections between art production and art appreciation were established. Exposure to a broad range of artists' treatments of subject matter allowed students to gain a broader understanding of how artists develop creative and innovative ideas for their works. Practical experience in turn, helped them to explore and adapt some of these creative and innovative ideas/techniques to their own work. This combined approach assisted in the transfer of information learned in one context to another. The synthesis between artist and student intentions and purposes in the production of art were also considered to be key elements in establishing a connection between critical and creative thinking. On the other hand, it was observed that there were a number of aspects to Maureen's teaching practice that appeared to constrain creativity. Students had little time to form, develop and refine their creative ideas. With little time (ten to fifteen minutes) for exploring alternative approaches in artmaking, students did not experiment with media. The work completed was usually the first attempt and because the variety of art materials was very restricted to a small selection of media and colour there was an overall sameness to all student artistic products. Furthermore, the stimulus for art production was predominantly drawn from a select group of real life objects (still life arrangements). This meant students were not developing their own messages to communicate visually, nor were they able to present things from an unusual or imaginative viewpoint.

In regard to Jane's teaching practices there were very definite 'rules' that she said she applied to her art program. Although Jane herself did not explicitly tie these to more student engagement in creative thinking, they were viewed as contributing to students' creative output in general. Jane talked about enforcing a no talking rule during art lessons as a way of 'improving the quality of creative expression' in art practice (Case study 3 T.T. ll. 200-1). Furthermore she said,

I don't believe in talking while doing art. I make it a rule that they can't just use art time as a chance to chit-chat because I believe artists need to concentrate and focus on what they are doing to be successful. You can't apply new techniques or skills if you aren't thinking about what you are doing (Case study 3 T.T. ll. 201-08).

This pattern of classroom management was observed throughout fieldwork at this site, although there was a certain amount of tolerance for quiet whispering between students. If the noise level rose and became more audible the teacher would give a verbal warning about punishment. While quiet uninterrupted time is seen as important to incubation and elaboration of creative ideas (Sternberg 1988) many creativity theorists believe it can be balanced with social activity involving verbal exchanges (Csikszentmihalyi 1996). Corcoran (2006: 9) cites Slavin's theory that creative skills can be fostered through cooperative engagement and oral interaction with student peers. The literature therefore, suggests conversations amongst students may aid individuals in reflecting upon outcomes and thinking more creatively about new solutions.

Jane also described a practice that involved 'learning from each other'. Sessions directed towards appreciation allowed for peer appraisal of artworks during the process

of making. This practice of peer appraisal, Jane believed, encouraged the development of creative ideas as well as helping students refine and improve their work. Jane said,

Another part of my lesson time is to put down tools for a while and get children to stand up and walk around the room looking at other's work. It allows them to get ideas if they are stuck and to reflect on how they can fix their work or add to it. They don't get help from outside others so they have to learn from each other as much as possible. I think this works well and I guess I picked it up somewhere along the way (Case study 4 T.T. ll. 216- 25).

When asked if she thought that this might encourage copying Jane responded,

Sure, there is sometimes copying but it is usually not as direct as this, they often use an element like an interesting technique they have seen in somebody else's work. There are some that need this more than others because they get a bit stuck and have to look for new directions (Case study 4 T.T. ll. 245-48).

Jane also believed her practice of working alongside students as an artist set a good example. She said, 'It shows them I value art myself and that I try to do what I am asking them to do' (Case study 4 T.T. ll. 237-39). A part of her reasoning was that it was beneficial to less confident students because her work could provide them with 'creative stimulus'.

This way they can watch me and get some creative stimulus for their own work and they may or may not follow what I do...I often purposefully sit near someone who I know may struggle with their work or is insecure about what they are able to do. That way they can get ideas from me, or even copy if they want and they don't have to feel embarrassed about it. I don't even think they know that they are doing something like me it kind of just has influenced their choices (Case study 4 T.T. ll. 239-48).

The issue of encouraging copying did not appear to worry Jane. Her rationale was that, for students with less confidence, it effectively modelled practice. It was noted in observation reports that many of her practices actively encouraged copying of imagery and techniques amongst her students. For instance, after students had the opportunity to look at one another's work during one lesson, Jane had said, 'Do you find anything that appeals to you?' 'Would you like to incorporate anything new after you have seen what everyone else is doing' (Case Study 4 O.T. ll. 170-72)? In comparing student artworks when they were completed it was possible to see that a fair degree of direct copying had occurred amongst students in three of the artmaking activities. Students positioned near the teacher would also tend to watch and copy aspects of the teacher's artworks as she was working. On one occasion Jane drew something on the blackboard before the students started work on an art task and then said it might help if, 'anyone gets bogged' (Case study 4 O.T. ll. 313-14). It was noted then that nearly half the class developed an image based on the teacher's drawn example. These actions seemed to undermine student creativity because it was difficult for them to create anything original or unique.

Summary Reflection: Primary Teaching Practices

Aspects of Jane and Maureen's teaching practice, specifically their inclusion of art appreciation in the art program afforded students some opportunities for critical thinking. Observation reports indicated that during discussions about artworks, students were often able to collectively develop lines of conjecture and interpretation about what they could see.

In Maureen's class, students were shown diverse examples of artworks of notable artists in different stylistic genres – expressionism, abstract expressionism including colour-field paintings, impressionism and post-impressionism. This afforded more opportunity for students to analyse similarities and dissimilarities between artworks. Ideas and opinions formed about qualities of different artworks when students analysed and compared art images. However, the development of critical thinking through class dialogue was also limited by rigid time constraints. Students were not able to contribute and expand on ideas or debate issues and there was little scope for depth of analysis in art appreciation sessions.

Maureen perceived that her influence on student creativity largely arose through her crafting of activities that were modelled on professional art practices and exemplars. She encouraged students to incorporate new stylistic and technical qualities into their own works. Attention in art appreciation and subsequent artmaking was, however, more often paid to formal design qualities and this limited the scope of inquiry.

In Jane's class critical dialogue was encouraged in art appreciation sessions. Jane allowed students to spend quite a high percentage of class time talking and reflecting upon artworks. On the few occasions that professional art exemplars were used, Jane appeared to use no prepared script. There were deviations into topics that students raised throughout the discussion. By wondering aloud about students' statements and having others respond to these statements, Jane was helping to model analytical thinking strategies. Jane did not appear conscious that this practice contributed to

critical thinking development because she did not draw attention to it in the interview. Jane incorporated peer appraisal of student art regularly in lessons and this was done at various stages in art production. A negative factor associated with this practice in regard to creativity was that it resulted in a fair degree of copying of ideas and techniques amongst students.

Jane pointed to her role as co-artist in the classroom as having a major influence on levels of student motivation and to some extent student creativity. Her rationale was that by modelling artist practice she expressed a real value for art to her students. Furthermore, Jane believed it was essential to have quiet concentration in creating an environment for creativity as she had observed this was important in terms of her own art practice. The lack of communication between students while working on art activities may have hindered the development of dialogue that facilitated critical and creative thinking but it did seem that this was somewhat offset by Jane's practice of having a number of breaks in the lesson for feedback and focused group discussion.

Primary Students' Perceptions and Practices

Data Sources for Identifying Primary Students' Perceptions of Critical and Creative Thinking

Interviews conducted with four students chosen from each of the two case study groups were the focus of analysis for determining students' perceptions of the role of critical and creative thinking in art. The categories that were emphasised by the eight primary students are detailed in Table 7.3.

Table 7.3 Emphasised Categories in Student Interview Transcripts for Case Studies 3 and 4

Case 3: Years 4, 5 and 6	Case 4: Year 4
1 – art apprec/ art criticism	1 – art apprec/ art criticism
2 – artistic autonomy	2 – artistic autonomy
5 – artmaking/artworks	5 – artmaking/artworks
15 – evaluating and refining work	15 – evaluating and refining work
20 – imagination	□
□	24 – student comments on lessons
31 – personal value/feelings about art	31 – personal value/feelings about art
35 – space and time for art	35 – space and time for art

The fact that the categories ‘creative thinking/creativity’ (13) and ‘critical thinking’ (22) do not appear in Table 7.3 is revealing of the fact that students in both primary case groups were frequently unable to articulate a clear understanding of these concepts and how they might relate to art study. The concept that proved most difficult for students was the notion of critical thinking. This category was attributed to 0% of words for interviews with case 3 and 4 students. Despite the fact that the category ‘creativity/creative thinking’ was not an emphasised category in both cases – less than 1% – this category has been used for citation and analysis in the following discussion because it is central to the topic of creative thinking. Primary students appeared to equate creativity with imagination. The category ‘imagination’ (20) appeared in relation to 5% of words for case 3 students and just 3.5% for case 4 students.

The most emphasised category for case 3 students was space and time for art (35) – 15% of words – and this was significantly more than for case 4 students – 7% of words.

Another category that was significant for both case groups was artmaking/artworks (5) – 14% of words for case 3 students and 18% for case 4 students. ‘Artistic autonomy’ (2) was an emphasised category for both students in both cases – 10% of words for case 3 and 6% for case 4. The difference appeared to largely stem from the fact that case 3 students frequently described limited opportunities to be autonomous in making artistic choices and for using their imagination in developing imagery.

Specific statements coded within categories ‘artistic autonomy’ (2), ‘artmaking/artworks’ (5), ‘imagination’ (20), ‘creativity/creative thinking’ (13), and ‘space and time for art’ (35), were used for citation and analysis below because they revealed something of students’ perceptions of critical and creative thinking.

Students’ Perceptions: Critical Thinking

Responses in both case studies indicated that students did not articulate their perceptions of critical thinking. There was some evidence that the word ‘critical’ was perceived in a negative light. Aiden for instance said, ‘I don’t think it is right to be critical because it is usually the best that somebody could do’ when he was asked about whether he made judgements about other people’s art (Case 4, ST. II. 354-56).

Students’ Perceptions: Creative Thinking

Students interviewed in both case studies frequently used the word imagination to describe notions of creative thinking. ‘Imagination’ was defined by some students as ‘using artistic licence’ (case 4), and others as ‘things that are unreal’ (cases 3 and 4), or

‘things that you wish could happen’ (case 3), or ‘fantasy’ (cases 3 and 4). The way in which art encouraged the use of imagination was often described as the most valuable aspect of the discipline. Typically, the only other curriculum subject in which students felt they were using their imaginations was English, particularly when they were engaged in creative story writing. Imagination was a concept emphasised in the interviews with Maureen’s students but this was because they felt they were unable to work in imaginative ways. This was a reaction to the frequent practice of modelling on other artists’ works and doing studies of real life objects.

Students in Jane’s class believed they were given opportunities to use their imagination. The students’ perception that they were able to explore their imagination in their art practice was significant because it suggested they felt they had avenues to explore alternative possibilities in their work. It could be argued that imagining is the core of creating in art because it involves creating new ideas or images through the combination and reorganisation of previous experiences (Greene 1999). Henrietta said she was pleased ‘the teacher was allowing them to do more things straight from their imagination lately’ rather than having very set projects (Case study 4 ST. II. 298-300). Kara agreed and said, ‘And she lets our imagination run wild and everything’ (Case study 4 S.T. II. 300-302). Although most students expressed the view that imagination was more about creating things that did not exist in reality, Tom’s perspective of how imagination was reflected in his artworks was a little different.

...sometimes I like doing something I see and sort of like but still even if I see it down beside a creek or something I still add a bit of

artistic license. The river is not perfectly straight as it should be or sort of like really transparent (Case study 4 S.T.1 ll.132-36).

The fact that Tom believed his picture would be aesthetically more pleasing if he modified reality meant he was making conscious decisions about presenting his own conception of reality. Being disposed towards adapting and substituting elements indicated he was applying creative thinking strategies in generating imagery.

When asked, students in both case groups identified at least one of their artworks produced in the last six to eight weeks as creative, apart from one girl who thought all her works were creative. In Sam's case it was his still life painting of apples and oranges, although he was happiest with his earlier drawn study and disappointed he was made to paint over his forms later. In Aiden's case it was a rainforest picture of tall trees that was created using paper collage. And for each of the other students they similarly selected artworks produced at different times and with different intentions. The level of creative engagement with the task seemed to be due to a number of different factors. Students described having had a strong initial concept that came to them in a flash, or being challenged by a slightly new media or approach, also developing a strong concentration, and often it was because they believed they had manipulated the materials very well. Commonly though, it was the case that the product was creative because it was an effective realisation of their original concept or idea. It had been noted in observation transcripts that students often expressed frustration about their technical expertise not being equal to their ideas. It appeared that the creativeness of an artwork was not determined on the basis of external judgements although it was

difficult to ascertain how much influence positive feedback from the teacher or peers had in their choosing of work.

Summary Reflection: Primary Students' Perceptions

The primary students interviewed were consistently unable to propose a view of critical thinking and did not describe aspects of thinking or doing in art classes that involved critical thinking behaviour. The fact that students were of a young age might be considered a factor in terms of their ability to perceive a role for critical thinking but teachers own lack of theoretical conceptualisation of critical thinking also seemed to limit this being adopted by the students. Conversely, students did have a conception of the role of creative thinking in art although this was mostly limited to the use of one's imagination. Students also singled out particular artworks as creative from amongst the work they had done in the recent past. It appeared to be the case that most students believed the work was creative because it was an effective realisation of their original concept or ideas.

Data Sources for Identifying Primary Students' Practices

Both student interviews and observation reports were valuable in discovering aspects of student learning practices. Table 7.4 provides a comparison of the most commonly emphasised categories across the observation and interview transcripts for students in case studies 3 and 4. Two categories were commonly emphasised in all the data sources and these rows have been shaded in grey.

Table 7.4 Emphasised Categories in Student Observation and Interview Transcripts for Case Studies 3 and 4

Case 3: Years 4, 5 and 6 – Observation Reports	Case 3-Years 4, 5 and 6 – Interview Transcripts	Case 4: Year 4 – Observation Reports	Case 4: Year 4 – Interview Transcripts
1 – art appreciation	1 – art apprec/ art criticism	1 – art appreciation	1 – art apprec/ art criticism
□	2 – artistic autonomy	□	2 – artistic autonomy
5 – artmaking/artwork	5 – artmaking/artwork	5 – artmaking/artwork	5 – artmaking/artwork
□	15 – evaluating and refining work	□	15 – evaluating and refining work
□	20 – imagination	□	□
□	□	□	24 – student comments on lessons
□	31 – personal value/feelings about art	□	31 – personal value/feelings about art
35 – space/time for art	35 – space/time for art	□	35 – space/time for art
36 – student behaviour/ response	□	36 – student behaviour/ response	□
46 – teaching methods	□	46 – teaching methods	□

The concepts that were emphasised by students interviewed from case 3 were largely the same as for case 4 students. The two main differences were that ‘imagination’ (20) was an emphasised category only for case 3 students – 10% of words – and ‘students comments on lessons’ (24) was an emphasised category for students in case 4 – 16.5% of words. Across both observation and student interview transcripts in Table 7.4, the most emphasised categories were art ‘appreciation’ (1) and ‘artmaking’ (5). The data presented in the next part of the chapter draws largely on data found in these categories. The category ‘art appreciation’ (1) – was 17% of words amongst case 4 student interviews as compared to 7% of words for case 3 student interviews. It was observed

that this was a reversal of the pattern seen in both case 3 and 4 observation transcripts. ‘Art appreciation’ was 34% of words for case 3 compared to 17% for case 4 observation transcripts.

The concept of ‘artistic autonomy’ (2) in regard to their own art practice was also emphasised more amongst case 3 students – 10% of words. This was 4% higher than for case 4 students. Another difference found in interview transcripts was that case 3 students talked twice as much as case 4 students about the issue of ‘space and time’ (35). Nonetheless, this was a significant category in all student interview data – 15% of total words. Even though the category collocated ‘space’ and ‘time’, it is necessary to note that students did not comment on space issues but rather focused on the issue of ‘time’. They frequently suggested that art lessons were too short to complete work successfully. The fact that this was also an emphasised category in observations – 9% of words – for this case group also indicates it was a problematic area in terms of critical and creative thinking development.

There were two emphasised categories in observation transcripts that were not emphasised in student transcripts: ‘student behaviour and response’ (36) and ‘teaching methods’ (46). The following discussion, however, draws data from these categories as well as the emphasised categories to illustrate the interaction that occurred between teaching methods and student behaviour. Specific statements coded within the categories shown in Table 7.4 were used for citation and analysis.

Students' Practices: Critical Thinking

Maureen's students revealed little about their application of critical thinking to art exercises. There were however, brief moments of reflection amongst Maureen's students about the application of thinking to art appreciation tasks. For example, in comparing the different styles of art shown to them, student comments suggested that some were clearly more difficult to analyse, interpret and evaluate than others. For example Craig had said,

It was good that Mrs [Olley] showed us different art...I mean you could sort of see how things were done. Although the abstract stuff that she showed us last time (Rothko's Colour Field paintings)...I didn't get.

Sam also mentioned this in his interview. It seemed that because abstract art was ill defined in nature, due to the fact that it contained no obvious symbols or recognisable objects, it was problematic.

In observing students in Maureen's class, there was however, some critical thinking behaviours noted when students were engaged in looking at and responding to artworks. The observed critical thinking skills displayed by case 3 students were compatible with five from a list of twenty-two 'critical thinking micro skills', identified by Haynes and Haynes (2000: 18-19). These were a) giving reasons for their ideas and opinions, b) making distinctions and connections amongst artworks, c) asking questions, d) listening actively to others and constructing inferences and e) formulating and evaluating hypotheses. Students displayed skills a) and e) when they were able to confidently

identify characteristics and features in art works and independently find logical explanations for their existence based on an overall evaluation of the piece. Sam, for example demonstrated he was using these skills when he was studying the work *Still Life with Onions* by Cezanne. He described to the teacher how he could see that the artist had created the illusion of three-dimensional space by creating a rounded shape to the onions through the use of tone and shading. In the same session another student had talked about the way in which the artist must have tried to represent different points of view in the same still life scene. He observed that when he looked at the work from different angles and altered the position of his eyes that the image seemed to show a different perspective. It was also noted that these kinds of comments flowed more freely when the teacher did less lecturing and used encouragers such as, ‘This is really good you people, you are really starting to look at it’ (Case study 3 O.T. ll. 217-18), or when she asked more open questions about what they believed was the artist’s intention and what elements in the picture gave clues about this.

Students also used questioning skills to help form an understanding about what they were looking at and talking about. This involved one of the skills identified by Haynes and Haynes (2000: 18-19) and listed above: c) asking questions and testing their assumptions about things. Sometimes this established a chain of responses that deepened the level of analysis and interpretation as revealed in the followed excerpt from the observation transcripts:

When Maureen was showing students examples of how artists used light to highlight certain objects in the frame Rebecca had noted (when looking at some portrait paintings by Rembrandt) that it looked

as though there was a spotlight on the human figures. This made them in her opinion look more like angels. Another student agreed and said that pictures of Jesus in churches also had the same kind of light shining on his body. Maureen listened to these comments for a while and then said that she thought that religious paintings often used this same effect and this was maybe a way of showing that the people in the picture were special because god's light was shining down on them. She also added that many artists used this projection of light onto figures or objects to make you notice them more because they were the important part of the image, therefore, it wasn't just about showing religious themes. Students made further comments about what kind of people in the pictures might have been and then they looked very closely for things in the images that were more in shadow as though they were more secret things in an artist's puzzle (Case study 3 O.T. ll. 285- 99).

This interaction involved d) listening actively to others and constructing, another of the critical skills identified by Haynes and Haynes (2000).

In art practice sessions there were fewer critical thinking behaviours recorded throughout the period of fieldwork. However, it appeared students were able to compare and contrast aspects of their own practice with the art exemplars they had been shown. This sometimes involved the critical thinking skills identified by Haynes and Haynes (2000: 18-19) as: b) making distinctions and connections amongst artworks and e) formulating and evaluating hypotheses. This is because students were observed to analyse specific features or qualities in different artworks and hypothesise about how these could be adapted to their own work. Sam, for example, experimented for a long time with ways of creating shadows in his still life composition by blending and smudging the colours together and when asked he said he was trying to get a similar effect to an artwork by Cezanne shown to him. Rebecca placed vibrant colours in the background and contrasting black figurative forms in the foreground of her picture. She

blended and overlaid warm paint colours through scraping and spreading the paint with torn cardboard strips she had collected. When asked why she had adopted this method, she said she had noticed the abstract (Rothko) work didn't have any brushstrokes and she had tried to recreate the same effect of wide marks and stripes.

The four students, Aiden, Tom, Henrietta and Kara interviewed from case 4 (Jane's class) were inclined towards considering and valuing the thoughts and opinions of others in their class. Apart from listening to other's thoughts and opinions there was also an indication that they positively valued observing and evaluating other students' artworks. Although this was often limited to borrowing and adapting other's methods of application, students appeared to be selecting, choosing and deciding amongst the different directions they might take. Tom had said,

Like one of my friends did something I was interested in. Often I get them to tell me how they did it...It just helps to say, 'well how do you do this thing', or...tell me how you did that...you know...and it helps me a lot (Case study 4 S.T. II. 411-14).

In this case Tom could see the value of incorporating new approaches into his own artmaking.

Observation transcripts of Jane's classes also recorded frequent times when there was a sharing of ideas and opinions amongst students. This was encouraged through the regular practice of verbal reflection upon artworks at different stages in their overall development. In addition, during class dialogue that occurred when students were gathered together to discuss artists' work, students would sometimes respond to other

students' observations and evaluations. The teacher however, was not observed to promote debate about points of agreement and disagreement and this did seem to limit the scope for students to use the critical skills involved in defence of an argument or point of view. Further demands for evidence-based arguments on the part of the teacher may have stimulated students to discuss points of agreement and disagreement.

Tom's comments in his interview suggested he was aware that the students' role in questioning things was important in developing interesting lines of inquiry in class dialogue. In response to a question about whether he believed he learned about art concepts through discussing artworks he said,

Well it really depends, like umm...often someone brings up one question to get started on and there is a whole lot of complex questions she [the teacher] answers and stuff but sometimes everything seems so straightforward and no one asks the questions so she really doesn't have a reason to go into that stuff. And she asks again and again and then she just doesn't do anything about it... because she doesn't think anyone will be interested (Case study 4 S.T. II. 257-63).

Tom believed a dynamic exchange of questions and answers could contribute to his learning but that this was very dependent on student motivation. When his fellow students were curious and raised 'complex questions' then the teacher would be able to build on this interest and go further into analysis and interpretation of the image.

Observation transcripts revealed a pattern of critical thinking behaviour in relation to peer critique of artworks in Jane's class. As previously described these sessions were a regular feature of lessons and were modelled on the teacher's own way of providing

critique. Students seemed comfortable articulating their opinions about what they valued but it was noted in observations that the pattern established was to only say something that could be construed as ‘positive criticism’. When one of the students said he was not able to interpret the expression on a face painted by another he was asked by the teacher ‘to rephrase the comment please to make it more constructive’ (Case study 4, O.T. ll. 329- 30). When asked in interviews about this practice Aiden commented that he usually selected works ‘that were very good so I can say something nice about it’ (Case study 4 S.T. ll. 215-17). This concern for saying something nice clearly limited the students’ ability to critically read and evaluate the value of different artworks. The natural selection of the most successful works also meant there was a biased focus.

Students’ Practices: Creative Thinking

Sam, Craig, Shelley and Jennifer, the students interviewed from Maureen’s class, were concerned about the lack of a role for ‘imagining things’ in art. These students were observed largely working from real life observations of objects during the term of fieldwork. Sam, Craig and Shelley believed they were not given enough choice in terms of determining subject matter for art practice tasks. When Shelley was asked about whether there was anything she would like to change about lessons, she said,

Yeah, I’d like that just one time you could just like draw what you wish would happen and stuff [talking about her love of fantasy themes]. So instead of being told what you are going to do, you would just do what you want to do (Case study 3 S.T. 2 ll. 69-73).

When asked a similar question in a separate interview Craig said,

Yeah, I wish that you could do what you want [referring to art practice]. I have all kinds of ideas but if I want to do anything like that I have to do it at home (Case study 3 S.T.1 ll. 36-8).

And again Sam said,

Well just to like...if there was one class where you could decide the way you wanted to do things instead of being told. Where you could do something from your imagination (Case study 3 S.T.1 ll. 280-82).

The impression they gave was that art practice followed a very uniform pattern whereby they were told to do things by the teacher at different steps along the way. Observations of lesson activities did show that the case 3 students' artworks contained very similar designs and elements and there was little compositional, stylistic and technical variation in their work. Two students consistently were noted to adopt a slightly different approach to others and were less concerned to stay within the parameters of the guidelines set by the teacher. Their artworks were also those that were frequently singled out by the teacher and other students as being highly 'creative'. The fact that student artworks were usually depictions of the same observed objects did appear to make them focus on the technical problems involved in creating a realistic portrayal. There was no clear evidence of behaviour that suggested they were imagining, experimenting, deliberating, risk taking or inventing throughout the process of artmaking. These skills are typically associated with creative thinking as it applies to artmaking (Wilks 2004: 73).

Evaluating and refining work (15) seemed closely linked to the category space and time (35). Lack of time in lessons, was something students' felt compromised their ability, as

Craig put it, 'to think carefully and do things well in art' (Case study 3 S.T.1 l. 81). When asked if they spent time evaluating and refining their work at different stages of production, three of the four students complained that there was not enough time for doing this in art lessons. They often described how they found themselves rushing through tasks. Sam said,

I hate being rushed. It's hard to remember what you were doing before when you start it again [referring to finishing off incomplete work in free time]. I'd like to take lots of time and get all the details in...and we don't get started until you know...after set up...and then you have to finish it just when you are starting to get something done (Case study 3 S.T.1 ll. 90-9).

Craig said,

I always wish I could have another go at things...just little things you want to improve...I'd like to do a practice run and then do a good thing (Case study 3 S.T.1 ll.130-33).

Craig and Sam raised the point that more time would help them refine their ideas and improve the quality of their work. Sam agreed with Craig and illustrated his point by saying,

Because we were using charcoal and I hadn't used it before and then I smudged it all over the page... hmm...it didn't look right and it's hard to take it back (Case study 3 S.T.1 ll.141- 44).

These comments are significant because they reveal an aspect of their learning environment they perceived as consistently limiting the scope of art production. In their interviews students did not make a direct connection between more time and higher levels of creativity in their own work. Observation notes however, frequently recorded

instances wherein students' work remained incomplete and unfinished. The lack of time was also noted to impact upon the level of experimentation and innovation in the use of media. Starko (2005: 261) and Csikszentmihalyi (1988: 332) identify the element of time as significant to the constitution of creativity. Creativity theorists who have studied teaching strategies for improving creativity in the classroom, highlight the importance of giving students time to wonder, experiment and find a particular direction that interests them (Starko 2005: 261).

A further point that was raised by Sam and Craig in regards to artmaking in interviews, was that they felt they could improve their own creativity if the teacher had more practical art experience. Both felt they needed more practical help and demonstrations of 'how to do things' by the teacher. While both boys believed they had real creative talents as artists, they seemed particularly conscious of their inexperience in manipulating materials and mastering technical aspects of production. Craig wanted to be able to make things 'seem more real' and Sam wanted 'to make things look more 3D and detailed'. This was where they felt their teacher should be able to help them improve their production skills. Craig had said, 'I wish she was a real artist' and Sam agreed with him and added that, 'I ask her questions [he is referring here to production skills] and she says stuff like, 'I don't know how Sam, I'm sure you'll figure it out' (Case study 3 S.T.1 ll. 280-2). This was not so much an attack on their teacher or her willingness to attend to their needs but rather reflected their perception that an artist would understand the problems associated with applying art procedures and skills and mentor them in these areas.

Students interviewed from Jane's class had a high degree of confidence in their ability to either generate or adapt ideas for artmaking. In trying to ascertain whether they had a concept for evaluating artistic success amongst their peers, the issue of peer or teacher critique of student work was raised. However, when the phrase 'art criticism' was used, Aiden naturally assumed criticism meant negative feedback, as did two other students in this case group. He said,

Well, I...I don't think it would feel good to have it criticised because it's the best ability that you could possibly do it (Case study 4 S.T.1 ll. 356-8).

Tom similarly said,

Well I really hate it [art criticism] especially if they haven't done it because you start thinking well they haven't tried it themselves. Could they do better than that? Like they don't have the right to criticise unless they have done better than you and also you think, well does my work set out what I wanted to do? And if it does what you wanted to do I guess you should be happy with that (Case study 4 S.T.1 ll. 366-72).

Tom's comment was particularly revealing of his beliefs about creative performance. He attributed success to internal and controllable factors rather than external causes. He didn't believe he needed great talent, rather that with sufficient ability and reasonable effort he could realise his artistic intentions. Self-recognition of a fulfilment of his intentions meant he was entitled to be happy with the results of his work. In his view an external assessor or critic would be unable to make that kind of judgement, particularly if they have not also succeeded at the same task.

Aiden believed art criticism should not involve making public judgements about artworks that you did not like because often it was a matter of personal taste.

Yeah well I keep most of my comments to myself like I see something that I don't really like myself...well I think other people may like it so I just keep right away. And I quite like most art that other people do because they have got good imaginations and it just makes me wonder how they thought of it and its just really amazing (Case Study 4 S.T.1 ll. 380-5).

Aiden was also clearly drawn to looking at art because he felt the imagination of the creator was often captured in the object. Finding alternative ways of looking at or thinking about things was something he found surprising and inspiring.

There was a mixed response to interview questions designed to encourage students to reflect upon what they were thinking and how they felt when they were engaged in the process of creating artworks. Most found it difficult to evaluate their own practice. Kara tried to describe what she was thinking and feeling when she was involved in art production and it seemed this was often dependent on the mood she was in at the time. She believed that she had to discipline herself to think carefully but said she found it difficult to channel thoughts when in a negative mood. Aiden similarly, described being heavily influenced by his emotions, for the most part he believed if he was feeling things like anger this was likely to present problems. In contrast Kara believed she was disconnecting from everything when she was in a good creative mental space.

I pretty much do it without thought...I think its something about that you are using a different part of your brain... I forget which one but

you are switching to one side and you are fairly quiet and you're just concentrating on what you are doing...you block other thoughts out and just are doing (Case study 4 S.T.2 ll. 316-22).

Kara, like a number of other students interviewed, was alluding to left-right brain theories (Jensen 2001). Artistic pursuits are, according to these now rather outdated theories, largely employing neural pathways situated in the right hemisphere of the brain. Jensen (2001: 38) reports that,

The old paradigm was that left-brain thinking was the home of the necessary "higher order" thinking skills, and right-brain activities were frills. That paradigm is dead wrong.

It was, therefore, difficult to know how much Kara's views about her own thinking in art were a result of other people's explanations about what occurs in the mind when doing art.

Summary Reflection: Primary Students' Practices

The students were engaged in both artmaking and art appreciation activities in every lesson throughout the school term. This was significant because the research suggests there is an enduring preoccupation with artmaking within Australian art programs in the primary school years (Bamford 2002; Wilks 2004; O'Hara 2005). None of the students interviewed articulated a clear perception of the role of critical thinking in their learning but there were a number of critical skills associated with learning tasks. Five critical thinking skills were identified through an analysis of observation transcripts.

There were few student behaviours recorded in observations of art lessons in either case group that could be attributed to creative thinking. The main aspect of artmaking that seemed to encourage creative thinking was in the area of problem solving. Students were often observed to use a trial and error approach to selecting ideas and techniques in artmaking and were seemingly quite fluent and flexible in deciding amongst different options. The lack of variety and choice of media was perceived by the researcher to impact upon how innovative and original they could be in their applications.

In interviews students appeared more cognisant of a role for creativity in art. Students' reflections upon their learning practice, however, did not reveal much in regard to what might be construed as creative thinking. The concept of imagination, rather than creative thinking, appeared to be intrinsically linked by students to art production. Students placed a high value on the role of art activities in developing their imagination.

Maureen's students frequently evaluated learning activities in regard to their scope for artistic development. Their criticisms of learning activities included what they perceived to be a lack of opportunity for imagining, choice in regard to selection of art themes or subject matter and limited time for developing and refining their work. Although the students themselves did not make a direct link between these factors and their engagement in creative thinking, they were perceived by the researcher to be relevant to the development of creative thinking and were noted in observation transcripts.

The next chapter, Chapter 8, concludes the research study by drawing comparisons across case study sites and making further more detailed references to the literature. In so doing, it highlights the key findings that emerged through the analysis of data presented in Chapters 6 and 7 and identifies relationships between this data and the literature reviewed in Chapters 2, 3 and 4. Within this framework the chapter summarises the data and presents the implications of the research findings. In particular, the research questions are reviewed with reference to overall conclusions that may be drawn from the project as a whole.

Chapter 8

Summary and Recommendations

The art room is... the teacher's canvas on which ideas are showcased, the curious are challenged, and responses are invited (Szekely, cited in Hurwitz and Day 2001: 379).

The objective of this study was to examine critical and creative thinking – two ‘higher order thinking’ processes – within the context of visual arts education at primary and secondary school levels. The research was not intended as a means to prescribe a particular model for teaching higher order thinking through art such as the Community of Inquiry model, or a problem-based learning model. Similarly, there was no expectation that teachers would have expert knowledge of models for higher order thinking instruction. The intention, instead, was to discover and document the different ways art teacher practitioners and their students might already be approaching critical and creative thinking. Much was learned through interviews, observation, documentation and analysis of teachers’ and students’ ideas and interactions within the environment of their classrooms.

It was believed important to have a field-based focus to this research study, as many other studies of higher order thinking in education have tended not to incorporate participant observation. Studies of critical and/or creative thinking in education (for example, see Burton, Horwitz and Abeles 1999; Smith cited in Tsui 2002: 741; Hamman, Borassa and Aderman cited in Moga, Burger and Hetland 2000:97; Baker, Rudd and Pomeroy 2001), rely heavily on data obtained through the application of standardised tests, such as the Watson-Glaser Critical Thinking Appraisal, the Cornell Test of Critical Thinking, and the Torrance Tests of Creative Thinking, for gauging

students' critical or creative thinking ability. Studies that rely on these tests risk viewing criticality and creativity as abstract constructs divorced from their practical applications in real life classroom settings. By contrast, this study adopted a classroom focus and sought to triangulate data derived from participant observation, teacher interviews and student interviews. As a result, the series of case studies that was developed here explored the range of views and experiences the participants had in relation to the topic under investigation. This approach was valuable because it helped to define the role cognitive processes played within different art classrooms. The knowledge, interests, attitudes and values of individuals in each of these educational communities largely determined the role for critical and creative thinking within the subject area.

Contribution to Knowledge

This study was conceived in the context of an appraisal of the educational research literature on cognition in visual arts education. What was discernible in this appraisal was that there has been considerable neglect of the views and practices of art teachers (Delacruz 1997; Zimmerman cited in Bamford 2002; Eisner 2002). For instance, Bamford (2002: 6) notes that 'primary art education is a relatively neglected area for scholarly investigation'. More specifically, Efland (2002) notes a general absence of research into the cognitive orientation of art pedagogies. The literature within the professional field of arts education relating to cognitive development has instead tended to focus on the nature of the arts themselves for training cognitive competencies (Hamblen 1997). Within the body of literature there are philosophical discussions, theoretical proposals and some conjecture about how the sub disciplines of art practice, criticism, aesthetics and history facilitate the application of either critical or creative

thinking. However, little of this research evaluates teaching and learning conditions that contribute to the development of criticality and creativity within the art classroom. Furthermore, amongst art educators, such as, Eisner (2002) and Burton (2004) there are claims that teaching and learning styles that have ‘naturally’ developed around the arts are conducive to supporting critical and creative behaviours and learning outcomes, but few studies test this hypothesis. As Weilgosz and Imms (2007: 59) note, past research into creativity within art education often ‘carries with it a sense of self service’ and lacks a critical perspective.

The small number of field-based studies that have actually focused on constructs of critical and/or creative thinking in the context of primary or secondary school art education are those by Tickle (1984), McSorley (1996), Wilks (2000) and Corcoran (2006). These were examined in Chapter 3. A further study that focused on broad based elementary school arts programs (art, music, dance and drama) was that by Burton, Horowitz and Abeles (1999). Only two of all of these studies – those by Wilks and Corcoran – were conducted within Australia. Wilks (2000) explored the development of students’ critical thinking through the aesthetics and arts criticism learning strand of the visual arts curriculum in Victorian secondary schools (Years 8-12). Corcoran (2006) explored the development of creativity amongst senior secondary students (Years 11 and 12) as a result of her art teaching in two Queensland secondary schools. In contrast to Wilks and Corcoran, this study incorporated both primary and secondary school art classrooms and had a dual focus on critical and creative thinking. In contrast to the

study by Burton, Horowitz and Abeles (1999) that had a broad-based arts focus, this study specifically examined only the visual arts in education.

Through the review, analysis and synthesis of ideas in relevant literature and curriculum documents included in Chapters 2, 3 and 4 of this thesis, as well as the presentation and analysis of research data in Chapters 6 and 7, this study has contributed to an understanding of how constructs of critical and creative thinking might apply to primary and secondary art education. The findings of the study were focused on the four central research questions introduced in Chapter 1. The presentation of data in Chapters 6 and 7 was therefore structured around these four lines of investigation and contributed knowledge about:

- primary and secondary teachers' theoretical perspectives about critical and creative thinking in the context of visual arts study,
- the teaching practices applied to developing critical and creative thinking in primary and secondary art classes,
- primary and secondary students' perceptions of the role of critical and creative thinking in visual arts study and
- the extent that critical and creative thinking was a feature of student practice in primary and secondary art lessons.

The following part of the chapter provides a summary of findings in each of these four areas. These are presented in a synthesised manner on a case-by-case basis. While there were many differences among the case studies – indeed the four case study sites were chosen to represent a variety of situations – some commonalities did emerge.

Secondary Case Findings

Case 1: Year 10

Shana identified four specific skills as illustrating critical thinking amongst her students. These were the ability to develop a point of view, the ability to defend a point of view, metacognitive awareness and informed reasoning. She illustrated how students with reasoning skills were able to analyse and evaluate ideas in relation to a social issue and justify their own stance on that issue.

Students' views of critical thinking were only partially developed. In general, the four students interviewed in case 1 indicated they were more conscious of the role of creativity in art as opposed to critical thinking. On the few occasions that students described how art activities might engage them in critical thinking they commented that they were developing flexibility in thinking and were able to self-correct when their ideas and plans proved incorrect or ineffective. Bailin (1998) also identifies these traits as important critical thinking dispositions. Two of the students, stated that a main feature of art as a discipline was that you were expected to express different ideas and opinions. They also thought the discipline allowed room for individual interpretation because there was often more than one 'right' solution to the same problem. Pauline, for example, explained how she felt that art was significantly different to other subjects in which students learned many facts and much information.

Shana associated problem solving skills with creative thinking and identified risk taking and self-expression in art practice tasks as integral to the development of creative

thinking through art. She felt it was important for students to take risks and experiment in their art practice. Significantly, she did not think that critical and creative thinking required different training practices. She often referred to them as working in partnership, particularly in relation to artmaking tasks. Her comments may have also been a way to justify the absence of any art criticism/aesthetics and history activities during the fieldwork period. The lack of class discussion and debate about any of the controversies that surrounded their chosen topic, the fact that no other professional artist's work relevant to the project themes was introduced to the students and the lack of organised critique of ideas and artworks meant that art production largely occurred without reference to knowledge and understanding developed through art aesthetics, art history or art criticism. Consequently, there were few opportunities for students to demonstrate critical thinking in verbal or written form. This evaluation is consistent with case 1 students' perceptions that there was more of a role for creative thinking in art lessons than critical thinking.

However, art practice tasks did appear to facilitate certain types of critical thinking skills. Students were required to independently plan, make decisions and occasionally evaluate the effectiveness of their efforts, particularly during the '100 figure' project work. Anne's final sculpture, for example, involved analysis and synthesis of the central ideas and themes in the novel, *The Handmaid's Tale*, and the adaptation of these ideas into a visually symbolic form. However, not all students in class demonstrated an aptitude for planning, decision-making or communicating messages throughout the project.

Students identified the development of creativity as an important goal for visual art education although some placed greater emphasis on this aspect of their learning than others. Two of the students proposed that the development of creativity was one of the main reasons why it was useful for everyone to study art. Students invariably associated individuality and personal expression with creativity. Anne for example, stated that, ‘...creativity releases your inner self’ (Case study 1, S.T. *c*, l. 500). However, she associated creativity with the process of art practice rather than her art products. Her reasoning was that students were working on the same defined art exercise and therefore there was a close similarity amongst student work.

Shana’s interview statements highlighted five particular strategies that she believed contributed to both critical and creative thinking. Firstly, she advocated the idea of conceptual development and this included brainstorming activities, even though no such activities were observed to take place in her classroom during the period of fieldwork. Secondly, she favoured a problem solving approach whereby she created problems that the students could solve in different ways. The major sculpture project devised in her classroom was an example of this. Thirdly, she showed students how to use a variety of media and application methods so that they were able to independently choose amongst these when applying themselves to new projects. Observation of class activities confirmed how students exhibited their independent choices, and this seemed to support Shana’s claims. Fourthly, she encouraged risk taking and experimentation, requiring students to be open to learning from accidental discoveries. A high degree of experimentation occurred throughout the planning, modelling and completion of the student sculptures. Students also had to revise their projects in light of structural and

kiln firing mishaps. Finally, Shana believed that setting high standards encouraged students to critically review and evaluate their work, and this motivated them to persevere in reaching set goals. Her regular critique of student works was sometimes severe and occasionally confrontational. However, this approach seemed to be a part of her strategy to provoke critical review and evaluation.

Case 2: Year 7

Felicity was not able to offer a clearly developed theoretical perspective of critical thinking in art. She was, however, able to describe some practices that contributed to critical thinking. She was also able to identify some aspects of the curriculum that she believed encouraged critical perspectives. Felicity explained that she enjoyed promoting critical perspectives through in-depth discussions about art and artists. There was a dissonance however, between what Felicity said she did in terms of developing critical perspectives through art criticism and the actual practices observed in her classroom. Only one of the ten lessons observed in her classroom involved an art criticism task. Despite a lack of focus on art criticism, the aspect of her teaching that contributed most to critical inquiry was her practice of instituting extended class discussions. These sessions were times when Felicity used humour as well as some role-playing tactics to stimulate student interest and engagement. Felicity's approach resulted in effective questioning and a greater sharing of ideas. However, the dominance of teacher talk in these sessions also appeared to constrain student participation as well as the depth of inquiry.

Students' comments about art analysis and interpretation indicated that they were not as favoured as art practice tasks. Nonetheless, students believed investigations into artworks offered an effective means to understand and learn about aspects of life. Artworks were perceived by two of the students to be reflective of other's life experiences and for this reason these students felt that analysing artworks encouraged the development of empathy. In general, however, analysis was not greatly valued by the students. Felicity herself, gave a fairly negative assessment of the Year 7 students' abilities to engage in the critical skills required in art analysis and interpretation. She said they found it difficult to make decisions independently, reflect upon their own actions or reactions to things and found self-reflection and evaluation very difficult.

Another aspect of art analysis that Felicity identified as contributing to critical thinking was the practice of making predictions about the symbolic meaning of artworks based on physical evidence and clues contained within them. Students themselves made no reference to this aspect of art analysis although this kind of student engagement was observed on a few occasions during the fieldwork period. For instance, some tasks encouraged students to seek and evaluate reasons why artists had made particular artistic choices. Students engaged in dialogue that explored how artists represented people of different social classes in Ancient Egyptian art. During the exchange they incorporated concepts and ideas developed through their art history and theory study to theorise about different methods applied by artists in both ancient and modern times.

Felicity also identified problem solving in art practice as contributing to engagement in critical thinking. Surprisingly, Felicity's teaching practice during fieldwork was

observed to be inconsistent with her descriptions of a problem-based approach. There were no problem solving behaviours or activities observed throughout the series of lessons. The absence of this kind of focus may have impacted upon students' abilities to apply creative thinking skills. Students were not observed making creative decisions about the selection of materials, the application of concepts or themes or the identification of intended outcomes. Largely, Year 7 students focused on art history studies of Ancient Egypt and there was a fair degree of direct teaching of content knowledge and facts. Felicity explained that the reason she followed a more conventional and highly structured approach when teaching the subject was that she believed Year 7 students would feel more secure and develop much needed foundational art skills and knowledge. This approach clearly lessened the role of critical and creative thinking in her class. In part, this would explain why the students interviewed had a very limited awareness of the role of critical or creative thinking in art.

In contrast to her limited views on critical thinking, Felicity was far more explicit about her theoretical perspectives on creative thinking. In describing her approach to the topic, she highlighted lateral thinking and visual imagination as two forms of thinking that particularly revealed a creative approach. Her views were compatible with the literature on the topic. For instance, the term visual imagination brings together the words 'visual' and 'imagination' both of which have semantic links to creativity theories. Imagination is understood by some cognitive theorists to be visual in orientation because it involves the development of mental images that extend or project reality into a new time or space

(Efland 2002). As Starko (2005) states, ‘visualisation’ or ‘visual thinking’ assists some creative individuals to conceive of things they cannot see.

In spite of the fact that Felicity was able to enunciate aspects of her theoretical perspective on creative thinking, she provided little information on what specific teaching approaches or strategies and learning tasks she might use. Not surprisingly, observation of classes revealed few instructional strategies or learning activities that encouraged creative thinking. Nonetheless, most students particularly liked the fact that art allowed many opportunities to exercise one’s imagination. This was in spite of the fact that students were unable to single out any of their artworks as particularly imaginative or creative. The reason why students may not have been able to do this was that art activities did not encourage free exploration, chance encounters, conceptualisations or the use of metaphoric language. Students were instead working within commonplace and predictable structures. Students were not observed inventing things or exploring new ideas.

Primary Case Findings

Case 3: Years 4, 5 and 6 Composite Class

Like Felicity, Maureen was not explicit about a theory of critical thinking but did have a clearer view of creative thinking. In general, she talked about how art influenced student ‘thinking’ or ‘thoughts’ but she was not inclined to distinguish lower order thinking from critical thinking. The students were also unable to propose a view of

critical thinking and did not describe aspects of thinking, or doing, in art classes that involved critical thinking behaviour.

Despite the fact that Maureen had a limited theoretical perspective for critical thinking, and similarly, that her students did not perceive a role for critical thinking in art, it was noted in observation transcripts that certain aspects of Maureen's teaching program encouraged the use of particular critical thinking skills. Students were shown diverse examples of artworks of notable artists in different stylistic genres – expressionism, abstract expressionism including colour-field paintings, impressionism and post-impressionism. This provided more opportunities for students to analyse similarities and dissimilarities between artworks. The teacher used probing questions that encouraged students to examine the images critically and to note details. Throughout these 'art appreciation' sessions students demonstrated a variety of critical skills. They gave verbal reasons for their ideas and opinions. They made distinctions and connections amongst artworks. They asked questions about subject content, technique and stylistic differences in artworks. They listened actively to other's ideas and made constructive inferences. They formulated and evaluated hypotheses. However, demonstration of these skills was somewhat limited because wait time between questions was short and students did not have much opportunity to extend their inquiry into artworks. In the absence of an immediate response the teacher would often answer her own questions.

In contrast to her views on critical thinking, Maureen perceived that her influence on student creativity largely arose through her crafting of activities that were modelled on professional art practices and exemplars. She said she encouraged students to

incorporate new stylistic and technical qualities into their own works. However, the impression that the students gave in interviews was that art practice followed a very uniform pattern whereby they were told to do things by the teacher at progressive stages in the process. Observation reports confirmed the fact that artmaking was highly structured and attention in art appreciation and subsequent artmaking was more often paid to formal design qualities than to exploration and problem solving. The subject matter was usually still-life objects that students either drew or painted. Students' comments indicated that they valued the role of art in developing their imaginative faculties but were concerned about the lack of a role for 'imagining things' in their art lessons.

When asked during interviews, students identified at least one of their artworks produced in the previous six to eight weeks as creative. The level of creative engagement with the task seemed to depend on a number of factors. Students described having had a strong initial concept that came to them in a flash, or being challenged by a slightly new media or approach. They acknowledged that creativity was developed through strong concentration, and that it often resulted from appropriate and skilled manipulation of materials. Commonly though, the product was assumed to be creative because it was an effective realisation of their original concept or idea.

The four students interviewed also raised the issue of having limited time for developing and refining their work. This issue was also noted during observations of lessons. It was frequently the case that students only had one opportunity to develop an artwork and would often not complete this first attempt within the time frame allowed.

Furthermore, the lack of variety and choice of media also impacted on how innovative and original students could be in their applications.

Case 4: Year 4

Like Felicity and Maureen, Jane did not describe a theoretical perspective of critical thinking. She did not propose any examples or definitions throughout her interview. She did, however, place a high value on modifying social behaviour and building self-esteem through art education. None of the students interviewed articulated a clear perception of the role of critical thinking in their learning. These findings suggest the teacher's lack of a theoretical perspective for critical thinking restricted a clear understanding amongst students.

In contrast to the absence of clear statements regarding a theoretical understanding for critical thinking in the art classroom, observation of Jane's lessons did reveal activities and planning that facilitated the use of critical thinking skills. Jane allowed students to spend a high percentage of class time talking and reflecting upon artworks, and this facilitated a modest level of critical dialogue. During this dialogue, Jane helped to model analytical thinking strategies by wondering aloud about students' statements and having others respond to these statements. Jane did not appear conscious that this practice contributed to critical thinking development because she did not draw attention to it in her interview. On the few occasions that professional art exemplars were used, there were deviations into topics and questions that students raised throughout the discussion. The teacher, however, did not promote debate about points of agreement or

disagreement and this did seem to limit the scope for students to use the critical skills involved in defence of an argument or point of view.

Jane incorporated peer appraisal of student art regularly in lessons and this was done at various stages in art production. Students seemed comfortable articulating their ideas and opinions about their peers' artworks and in reflecting upon the outcomes of their own work. Students also appeared to be selecting, choosing and deciding amongst the different directions they might take in the process of their artmaking during these sharing sessions. Peer appraisal, however, did have the limiting effect of encouraging a fair degree of copying of ideas and techniques amongst students. In addition, students were encouraged to say only nice things about each other's work. For example, Aiden commented in his interview that he usually selected works 'that were very good so I can say something nice about it' (Case study 4 S.T. II. 215-17). This concern for saying something nice clearly limited the students' ability to critically read and evaluate the effectiveness of different types of visual communication.

Jane expressed the view that art had a major role to play in developing creativity. This was in contrast to the absence of any theoretical perspective on critical thinking. She believed that the generation of art required the translation of ideas into a visual form and this meant students were engaging in creative thought. Jane seemed to believe that making value judgements about what was more creative amongst students' work would act as a disincentive for less talented students. In her personal assessments of artworks, however, she seemed very aware that some students were more likely to produce creative work than others. Students seemed cognisant of the teacher's stance in regard

to not distinguishing creative or aesthetic value amongst artworks as they consistently commented in interviews ‘that there was no such thing as good or bad art’. Their reasoning invariably was that it was individual to the maker. This concept appeared to undermine the purpose of art education for teaching ways to improve art skills and knowledge. Students were also not encouraged to make causal attributions; that is, students were discouraged from judging what might cause success or failure within artmaking.

Jane pointed to her role as co-artist in the classroom as having a major influence on levels of student motivation and to some extent student creativity. Her rationale was that by modelling artistic practice she expressed a real value for art to her students. Furthermore, Jane believed it was essential to have quiet concentration in creating an environment for creativity as she had observed this was important for her own art practice. The lack of communication between students while working on art activities may have hindered the exchange of ideas but it did seem that this was somewhat offset by Jane’s practice of having a number of breaks in lessons for feedback and focused group discussion.

The Relationship of the Research Findings to the Literature

None of the teachers in the study were trying to be innovative in regard to applying new measures to raise student levels of critical and creative thought. Teachers mostly followed what appeared to be fairly established ways of teaching subject content. New syllabus structures and guidelines had, however, caused the primary teachers to adopt new approaches to incorporating art appreciation. All teachers focused on the nature of

the learning tasks they had set for students, rather than on the dynamics of the teacher-student or student-student interactions that occurred in class. Similarly, Wilks (2000: 228) in her case study research found that, '[the secondary art] teachers appeared to be unaware of strategies they might use to raise levels of inquiry'.

The study by Burton, Horowitz and Abeles (1999) found that students' applications of higher order thinking were enhanced through so-called 'innovative arts teaching'. The exact nature of 'innovative practice', however, was not made clear in their study. Their study appeared to suggest that primary teachers who had a good knowledge of the arts and incorporated arts study frequently within the school curriculum were innovative teachers. In contrast, the results of this thesis would suggest otherwise; namely, that it couldn't be assumed that competent art teachers are also innovative teachers.

Apart from art practice, class discussions were the most significant teaching strategy that occupied the most lesson time in three of the four classrooms visited in this study. Critical thinking was more directly enhanced when dialogue involved student participation or when teachers asked exploratory questions that fostered independent inquiry. Unfortunately, instances of this kind of critical engagement were infrequent. As Tishman, Jay and Perkins (1993), Stout (1995) and Wilks (2000) all suggest, there is an important role for this kind of dialogue when promoting critical thinking. Notwithstanding the limited level of student participation in dialogue, the primary teachers' practice of incorporating discussions related to art appreciation in every lesson appeared to at least contribute to critical and creative engagement amongst students. As Stout (cited in Delacruz 1997: 35) claims 'students become adept in conceptualising,

analysing, synthesising and evaluating ideas, and make meaningful applications of knowledge' when art teachers engage in art appreciation or criticism tasks. Efland (2002), Perkins (1994) and Wilks (2000, 2004) state further that critical evaluations of artworks, whether of the student's own or that of a professional artist, requires the use of various strategic and complex mental processes. In this context, the greater role for art appreciation in the primary settings as observed within case studies 3 and 4 was significant. It was significant because research elsewhere suggests that, within Australian art programs in the primary school years, there is an enduring preoccupation with artmaking (Bamford 2002; Wilks 2004; O'Hara 2005).

In contrast to the primary case studies there was an obvious lack of art criticism activity in the Year 7 and Year 10 case groups. In the Year 10 class, the teacher did not engage students in any theoretical or analytical discussions about artworks or art history topics. While this may have been a result of the particular timing of fieldwork investigation, it was significant. Students' critical inquiry was limited because they were unable to enter into thoughtful discussion and debate about topics, concepts and ideas. On this point there are also connections to the study by Wilks (2000). Wilks (2000: 228) noted, 'Over the initial period of a month, art history and criticism were rarely attempted' in the secondary school art classrooms involved in her study. This pattern of teaching, in Wilks's view, impacted on the level of critical inquiry generated in classes. In the study documented here it was also perceived that the avoidance of art criticism activities by both high school teachers was influenced by the students' dislike of this type of activity. Students interviewed in the secondary cases, particularly the Year 10 students, professed their disinterest in what they described as 'theory lessons'. Teachers also

mentioned students' reluctance to be involved in critical analysis and interpretation of artworks. The findings from the study indicated that further development of more creative and critical pedagogies in regard to teaching this curriculum strand are needed to counter these negative associations.

The value of creative thinking was clearly appreciated by teachers and students in each of the case study groups. In this respect the findings from the study concur with other research that has focused on creativity in education. Creative thinking was enhanced through the encouragement of different forms of expression in artmaking. In addition to this teachers showed interest in, and respected, students' views in discussions about art and artworks. The teachers demonstrated that they were enthusiastic and passionate about the subject area and students perceived that their artistic achievements were highly valued by their teachers. These are aspects of positive reinforcement for creative thinking that have been observed by many researchers including Perrone (1994), Sternberg and Williams (1996), Amabile (1996) and Starko (2005).

While the value of creative thinking was clearly acknowledged by the participants in this study, there were aspects of the practices observed in the four teaching and learning programs that limited creativity. Similar practices have been highlighted in the field-based research of Kamii (cited in Starko 2005), Perrone (1994), Corcoran (2006: 103-109) and Parnes (cited in Corcoran 2006: 109). Like Kamii's observations, students in this study were seldom expected or encouraged to invent their own procedures or to develop several different ways of solving the same problem. Perrone (1994: 11-12) describes at least eight common elements of learning activities that engage students in

creative thinking. Amongst these elements are three that impact upon students' perceptions and practices. Firstly, it is important for students to sense that the results of their work are not predetermined or fully predictable. Secondly students need to help define the content of activities. Thirdly, students need time to wonder and find a particular direction that interests them. The student interview and observation data in this thesis suggested that students were aware that they had little influence in choosing the content of learning activities, were not independently deciding upon directions that interested them and that there was little time allocated to making independent decisions and planning work.

The fact that individually based learning activities were exclusively used in each case group clearly limited opportunities for creative collaboration between students. Corcoran's (2006) study has highlighted the value of including partnering and group work as a way of improving levels of creative thinking amongst senior secondary art students. Parnes's (cited in Corcoran 2006: 109) research similarly shows that group work can contribute to superior creative thinking ability over that generated by an average single individual because people bring with them a different background of talents, strengths, facts and experiences.

Limitations of the Study

Limitations to this study need to be noted as they may have impacted on the findings in different ways. There were limitations to the sampling of participants and sites. There were also limitations in the manner by which data was collected. These are discussed individually in more detail in the following pages.

The Sample

The secondary teachers who were selected for the study nominated particular classes from among those that they taught in the Year 7 to Year 10 age range (the researcher chose not to include Years 11 or 12). These classes however were not necessarily representative of the broader secondary school programme. Year 7 students were at the beginning of their secondary studies and Year 10 students were beginning the transition to the senior secondary curriculum. Furthermore, the researcher's scheduling of observation visits proved to be problematic in regards to representativeness. The visits occurred in the first and final term which meant that the samples observed may not be indicative of the range of learning styles across the full year. The Year 7 teacher commented that her priority with students new to secondary school was to do more foundational structured work until students were more settled into their new environment and routines. Similarly, the Year 10 teacher commented that because it was the final term in the year, she had shifted her focus to completion of practical work. For these reasons, including a different sample of secondary school classes/year levels and selecting second or third term for observation visits would have added further depth and validity to the case study research.

The teachers sampled were chosen according to six main criteria and these are stated in Chapter 5. One important criterion was that each of the teachers selected displayed a passion and interest in teaching art. In this respect the researcher relied upon the advice of a regional creative arts education consultant working with the Department of

Education and Training as well as the principals of schools. Whether in fact the teachers sampled did satisfy this criterion is open to contestation because this appears not to be the case in view of some of the evidence presented in the study. For instance, one of the primary school sample teachers was only teaching classes for thirty minutes once a week. This is below the recommended amount and might suggest that the value placed upon the arts and the quality of the educational experience was less than what is more generally the case. In retrospect, preliminary visits to a number of schools and classrooms and some investigatory conversations conducted with potential teacher participants should have been conducted prior to forming the teacher sample. This process may have ensured that teachers selected for the study were exemplifying accomplished practice.

Fourthly, all the teachers were female and this could also interfere with the applicability of the results. Efforts were made to include at least one male teacher however this teacher withdrew after fieldwork commenced due to a sudden shift from teaching to administrative duties. In the process of forming the teacher sample it was noted that there was a far greater proportion of female art teachers than male art teachers in the region. While the selection of all female teachers accentuates the greater proportion of female teachers working in schools, the sample, with an equal number of male and female teachers, would have allowed for any gender-teaching differences to be noted.

Collection Methods

Student interview data may not have been as focused in regard to the research topic as they could have been. In retrospect, the interviews with primary students about their

perceptions of critical and creative thinking were constrained by their lack of knowledge or awareness of these concepts. The word ‘critical’, for example appeared to have a negative connotation for most young students, such that a person thinking critically might be someone who complains and finds fault with things or people. The inclusion of some information and discussion about these concepts prior to interviews might have helped these students to reflect more clearly on their behaviour and thinking in art classes. Such preliminary discussions might have provided them with a clearer understanding of the terminology.

Where field observations form the main part of research and there are not other sources of triangulation, including a second field observer would have helped to account for – or at least reflect upon – the possibility of observer bias. It is sometimes the practice in field-based research to involve a second observer who provides an account of the active role of the principal researcher. While it would have been difficult to find someone who was suitably familiar with the workings of art classroom who was able to devote almost a full school year to visiting classrooms, this is an aspect that would have strengthened the validity of the observation data.

Recommendations

This study selected teacher participants who were accomplished art teachers in the hope that they would facilitate the development of understandings that could be used to benefit and inform others within the teaching profession. The findings from this research however show that one cannot assume that experienced art teachers are necessarily better able to achieve higher order cognitive processing within their visual

arts teaching pedagogy. Although there were teaching practices that facilitated students' critical or creative engagement, in general, the study identified many situations in which this did not occur. Not all of these deficiencies arose from teaching practice. There were clearly practical issues including students' levels of cooperation, the lack of resources and facilities – particularly in the primary settings – and inadequate time allocation to art. These clearly were things that frustrated both teachers and students and placed constraints on what they could achieve during art lessons.

The inadequacies found within the practices of experienced teachers in this study also raise questions regarding the level of training and support available to teachers who have not been well prepared to teach the visual arts. Even the secondary specialist teachers seemed ill equipped with respect to their understanding of critical and creative thinking and its development. Further research and advocacy for pre-service and in-service teacher training programs is essential. These in turn, could empower teachers to modify and improve their teaching practice with the specific objective of developing critical and creative thinking. If this shift in emphasis were to occur, it would necessarily entail the adoption of new pedagogical approaches and changes to existing practices.

The following list is a series of recommendations of what actions would be required for a new pedagogical emphasis on the cognitive aspects of arts education:

- consideration for establishing group and cooperative work at all levels. It was noted that the emphasis on individual work reduced opportunities for students to

engage in constructive dialogue and exchange of ideas and extended cooperative problem solving tasks.

- setting longer-term problem-based tasks that require higher levels of student planning, decision making and learning through trial and error. Only students in one of the four classrooms in this study were involved in longer-term project goals and during work on the project they demonstrated higher levels of creative behaviour than others in the study. Predominantly, activities set were discreet one-off experiences that afforded fewer opportunities for developing thinking skills.
- allowing more time to cover aesthetic considerations in art. It was noted that the primary school teachers incorporated more discussion focused on appreciating different qualities in artworks than did the secondary school teachers. These discussions related both to the students' work as well as other artist's work. On these occasions there was evidence of students applying critical thinking when they were asked to consider who, what, why, when, and how sorts of questions.
- avoiding rushing through lessons as a result of covering too much informational content or practice. A focus on 'depth' rather than 'breadth' of topics and techniques is likely to lead to deeper levels of student inquiry. Findings in case 3, for example, indicated that rigid scheduling of lessons and the fact that new concepts and ideas were introduced in every lesson compromised students' cognitive engagement.
- allowing time for students to revise work, provide feedback and evaluate the effectiveness of outcomes at the conclusion of work. There was only one case group that allowed time for this in the study and it appeared to have a positive influence on students' understanding of their purposes and intentions as artists. It helped to model metacognitive practice.

- including more critical discussion, reading and writing tasks associated with art practice, history and criticism, particularly at secondary level. The practice of researching texts and verbalising and writing observations in class would help to create more autonomy in learning and assist in the revision of knowledge and concepts. The Year 10 students in this study found it difficult to complete sophisticated writing tasks in the process of interpreting art.
- increasing student ownership of their own learning could be established through joint negotiation of tasks. Involving students in the planning of class activities would help them understand learning objectives and orient them towards achieving specific goals. This would avoid the situation in which events simply unfold from one lesson to the next.
- incorporating more discussions and conversations that use open-ended questioning techniques. The study found that teachers predominantly asked students closed questions for which they had a pre-defined answer in mind.
- appreciating the need for selecting topics and subject matter for art practice that connect to students' interests and life experience and promote the use of their imagination. Many teacher choices in the study indicated a preference for subjects that were more adult-focused and very literal. Younger students in the study expressed frustration that they could not tap into their imagination in generating imagery and this suggested a limitation on student creative input.
- having a clearer understanding of the curriculum principles and philosophies in the syllabus that support and encourage higher order thinking. Teachers knew the content of the syllabus but were not aware of an intention or philosophy for higher order thinking. The secondary teachers in the study did not discriminate carefully between what might be viewed as creative as opposed to ordinary art behaviours and outcomes. The inclusion of more descriptors and assessment guidelines in visual arts curricula in New South Wales in the future would

greatly assist teachers in this endeavour. Wielgosz and Imms (2007: 47) draw attention to ‘the explicit inclusion of creativity as both a domain and dimension in the new Victorian Essential Learnings (VELS). This prominence is also mirrored in other Australian State and National initiatives such as Tasmania’s Essential Learnings (ELS) and Queensland’s New Basics’. Such explicit inclusion should also be considered for visual arts curricula in New South Wales.

- art teachers need to be encouraged to go beyond safe teaching practices and allow room for experimentation. The experienced teachers participating in the study had worked to a level of security in their teaching. It was noted that each lesson would typically follow a similar pattern and this was repeated throughout the term. These patterns were not always conducive or supportive of critical and creative thinking. In order to invest in the uncertainties of new and different approaches teachers need to be persuaded that these measures can improve the quality of teaching and learning. This requires access to research that focuses on practical questions of direct relevance to art classrooms. Teacher practitioners would benefit from learning about innovative teaching practices that have successfully been applied to teaching higher order thinking through Art.

Two common themes emerge when one examines this list of recommendations. Firstly, in all the case studies examined in this study, practical issues of the classroom, particularly as related to the amount of time available, limited the ability of teachers to emphasise strategies that could have achieved higher order thinking amongst students. Little time was available for undertaking a number of activities including those that explored aesthetics in art, those that explored curriculum topics in depth, and those in which students could revise and evaluate their own works. In addition, opportunities for critical discussion of art practice, history and criticism as well as extended experimentation were limited. Secondly, while art teachers may acknowledge the value

of teaching higher order thinking through art, such an emphasis is largely secondary to teaching art skills. By far the most prevailing situation in all the case studies examined in this study was one in which an emphasis on art practice activities guided the structure and learning goals of each task or set of tasks. Rather than establishing collaborative tasks amongst students, teachers tended to set individual tasks that focused on individual skills. Rather than setting long-term projects that required students to plan work in relation to ideas, concepts or themes, the majority of teachers set tasks that could achieve short-term practical goals. Rather than involving students in the planning of tasks, teachers tended to present teacher designed activities. Rather than selecting topics that overtly encouraged student imagination, teachers tended to select subject matter that was not connected to students' life experience and interests.

The implementation of these recommendations is of course limited by many factors. However, what this study has demonstrated is that, while theoretical perspectives in art education research acknowledge the value of art in teaching higher order thinking, such an acknowledgement may only be marginally reflected in art classrooms today. Although the case studies examined in this project revealed some innovative approaches to expanding students' cognitive enquiry, these were not part of an overall strategy designed to develop critical and creative thinking. Research that illustrates the value of focusing art teaching on critical and creative thinking, while not diminishing the subject area requirements, is still needed to persuade administrators and teachers of the ways in which Art represents an excellent mode of inquiry. Teaching in the field would benefit dramatically from incorporating visual arts education in a broader research agenda that is focused on critical and creative pedagogies that are practical and have been shown to

work. For these reasons, it is hoped that more research will be applied in future towards developing a better understanding of how cognitive development is promoted through visual arts teaching.

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APPENDIX I

The University of New England Human Research Ethics Committee Letter Approval

**THE UNIVERSITY OF NEW ENGLAND
HUMAN RESEARCH ETHICS COMMITTEE**

MEMORANDUM TO: Dr J-A Reid/Ms F Alter
School of Curriculum Studies

This is to advise you that the Human Research Ethics Committee has approved the following:

PROJECT TITLE: Art-full thinking: A study of critical and creative thinking processes in primary and secondary visual arts education

COMMENCEMENT DATE: 1/9/01

COMMITTEE APPROVAL No.: HE01/205

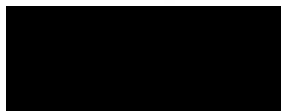
APPROVAL VALID TO: 30/9/03

COMMENTS: Nil. Conditions met in full.

The Human Research Ethics Committee may grant approval for up to a maximum of three years. For approval periods greater than 12 months, researchers are required to submit an application for renewal at each twelve-month period. All researchers are required to submit a Final Report at the completion of their project. The Renewal/Final Report Form is available at the following web address: http://rs-nt-10.une.edu.au/Home/V_2_1/ecforms.html

The *NHMRC National Statement on Ethical Conduct in Research Involving Humans* requires that researchers must report immediately to the Human Research Ethics Committee anything that might affect ethical acceptance of the protocol. This includes adverse reactions of participants, proposed changes in the protocol, and any other unforeseen events that might affect the continued ethical acceptability of the project.

27/11/01



Fiona Prater
Secretary

APPENDIX II **The Department of Education and Training Strategic Research
Directorate Letter of Approval**

STRATEGIC RESEARCH DIRECTORATE



Ms Frances Alter
124 Douglas Street
ARMIDALE NSW 2350

Dear Ms Alter

SERAP Number 01.198

I refer to your application for extension of your research project in NSW government schools entitled *Artful thinking: A Study of Critical and Creative Thinking Processes in Visual Arts Education K-6*. I am pleased to inform you that your application has been approved.

This approval will remain valid until 4/12/2003.

When your study is completed please forward your report marked to the Research Approvals Officer, Department of Education and Training, Level 6, 35 Bridge Street, Sydney, NSW 2000.

Yours sincerely



for Dr Paul Brock
Director of Strategic Research
12 February 2003

APPENDIX III

Emphasised Categories Across Data Sets in Case Studies

Teacher Interviews- Comparison of Emphasised Categories

Case 1	Case 2	Case 3	Case 4
<input type="checkbox"/>	1- art apprec/art criticis.	1- art apprec/art criticis.	1- art apprec/art criticis.
5- art making/ artwork	<input type="checkbox"/>	5- art making/ artwork	5- art making/ artwork
7- art theory/art history	7- art theory/art history	<input type="checkbox"/>	<input type="checkbox"/>
13- creativity/ creative thinking	13- creativity/ creative thinking	<input type="checkbox"/>	<input type="checkbox"/>
22- intellectual/ critical/ logical thinking	22- intellectual/ critical/ logical thinking	<input type="checkbox"/>	<input type="checkbox"/>
		28 student motivation	28 student motivation
30-student artistic development	30-student artistic development	30 student artistic development	30 student artistic development
35- space and time for art	<input type="checkbox"/>	35 space and time for art	35 space and time for art
<input type="checkbox"/>	<input type="checkbox"/>	36	<input type="checkbox"/>
<input type="checkbox"/>	38	<input type="checkbox"/>	38
46- teaching methods	46- teaching methods	46- teaching methods	46-teaching methods
<input type="checkbox"/>	<input type="checkbox"/>	48	<input type="checkbox"/>

Student Interviews- Comparison of Emphasised Categories (by at least one student in case group)

Case 1	Case 2	Case 3	Case 4
1- art apprec/ art criticism	1- art apprec/ art criticism	1- art apprec/ art criticism	1- art apprec/ art criticism
		2	2
5- art making/ artwork	<input type="checkbox"/>	5 art making/ artwork	5 art making/ artwork
7- art theory/art history	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9- assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13 creativity/ creative thinking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	15- evaluating and refining work	15 evaluating and refining work
<input type="checkbox"/>	19- ideas and opinions	<input type="checkbox"/>	<input type="checkbox"/>
21- individuality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	20- imagination	<input type="checkbox"/>	20- imagination
<input type="checkbox"/>	24- student comments on lessons		24- student comments on lessons
<input type="checkbox"/>	25- life experience	<input type="checkbox"/>	<input type="checkbox"/>
28- student motivation	28- student motivation	<input type="checkbox"/>	<input type="checkbox"/>
30- student artistic development	30- student artistic development	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	31-personal value/feelings about art	31-personal value/feelings about art
33-views about purpose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		35 space and time for art	35 space and time for art
40- teacher critique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Observations – Comparison of Emphasised Categories

Case 1	Case 2	Case 3	Case 4
		1- art appreciation	1-art appreciation
5- art making/ artwork	5- art making/ artwork	5- art making/ artwork	5- art making/ artwork
7- art theory/art history	7- art theory/art history		
13- creativity/ creative thinking	□	13- creativity/ creative thinking	13- creativity/ creative thinking
22- intellectual/ critical/ logical thinking	22- intellectual/ critical/ logical thinking		
		35- space/time for art	□
36-student behaviour/ response	36-student behaviour/ response	36-student behaviour/ response	36-student behaviour/ response
40- teacher critique	□		
41-teacher demonstration	41- teacher demonstration		
42- teacher dialogue	42- teacher dialogue		
46- teaching methods	46- teaching methods	46- teaching methods	46- teaching methods
□	48- texts/visuals		

Interview Participants (Pseudonyms)

STUDENTS INTERVIEWED

Case 1 students	Case 2 students	Case 3 students	Case 4 students
Suzanne	Emily	Craig	Aiden
Rosemary	Jed	Jennifer	Henrietta
Anne	Andrew	Sam	Tom
Pauline	Kathryn	Shelley	Kara

TEACHERS INTERVIEWED

Case 1 Teacher	Case 2 Teacher	Case 3 Teacher	Case 4 Teacher
Shana Williams	Felicity Brown	Maureen Olley	Jane Armstrong

APPENDIX IV **Teacher Interview Questions**

- How long have you been teaching the visual arts in schools? Do you enjoy teaching the subject area?
- What aspects of visual arts learning do you think are valuable to the individual in terms of personal development and growth?
- What is your opinion of the current visual arts syllabus? Do you find it easy to teach the content prescribed? Does it provide a balance between the different areas of study - art production, art analysis, art history etc? Do you think it allows students to develop critical/creative perspectives? In what ways?
- What do you think are some of the demands and challenges that are presented to visual arts teachers?
- Reflecting on your own teaching practice, what would you say characterises your own approach to teaching? Is there a particular methodology or set of strategies you like to employ to encourage student thinking?
- Are you aware of any higher order thinking skills instruction theories or models? Have you ever applied them to your teaching? How?
- What is your understanding of critical thinking? Do you think students engage in this in art lessons?
- What is your understanding of creative thinking? Do you think students engage in this in art lessons?
- How might art be able to foster critical/ creative thinking?
- How important do you think it is for students to be either critical or creative thinkers in terms of successful artistic development?
- Do you believe students Year ____ (case study age group) are able to be critical or creative thinkers?
- What do you see as the prime conditions for allowing creativity to flourish?
- Are there constraints on students that make it difficult for them to be innovative and exploratory in their own art production?
- Can you identify some events (moments or occasions) within your teaching that signaled students were engaging in creative or critical thinking?
- Do you perceive that visual arts education is valued in the wider community for its contribution to learning in general?
- Are there any external factors that you feel impinge on creating an environment for critical/ creative thinking, such as time or resource factors? How do these effect the learning environment?

- Are there any questions you have of me or is there anything further that you would like to add?

APPENDIX V Student Interview Questions

- Do you think you are motivated/interested in doing art study at school?
- Is the experience of studying art the same as for other subjects in the curriculum?
- What might art be useful for in terms of learning, if it's not about becoming a professional artist? Do you think it could help you in daily life, for example?
- What kinds of thinking do you believe you might develop through doing art at school? Do you think you are learning to be a critical thinker? Do you think you are learning to be a creative thinker? Can you give me any examples of times when you were critical/creative?
- Do you offer opinions about things like artworks that the teacher shows you? Do you like talking about artworks?
- Artists sometimes talk about how a lot of art making is about solving problems- would you agree with this? Does art sometimes seem difficult and frustrating? When do you find it hard? What kind of frustrations or problems have you experienced in your artmaking?
- Are you aware of making decisions and choices in your work (eg. how to compose your work, what to leave out or add in, what techniques or art forms are suited to certain ideas or images and those kinds of things)?
- Do you feel you have developed better ways of managing your work? What are they?
- In your opinion do you feel that you have the right environment to do your work successfully? If prompting is required- Is the classroom space suitable? Is there usually enough equipment and art materials? Are there enough visual aids (photographs, books, etc) on hand when you are planning artworks? Is there enough time to get work done satisfactorily? Are there distractions from others in the class?
- After talking about past activities- Were you happy with what you made? What would you change if you had a chance to do it again? Did you understand what the teacher wanted you to do? Do you think the teacher and others value originality in your work or ideas? Can you tell me what you were trying to do in your work?
- Sometimes you might get the feeling that you have been very creative and original in your own work? Do you ever feel this way? Can you tell me about one of the artworks you have done that you think was creative?

- Do you think you have learned to make independent evaluations/judgements about things through doing art study? Why? Why not?
- Do you debate about art topics with others in class? What kinds of discussions do you have? Do you like giving your opinions? Do you ever change your mind after talking about things in class?
- Are there any aspects of lessons you think have been useful to you in helping you to improve your appreciation and understanding of art?
- What do you think are the best qualities in a visual arts teacher? What do you think the teacher needs to be able to do?
- If you had the chance to change things what would you change about art lessons?
- What aspects of art study do you like best? What do you think about lessons that involve art theory?
- For Year 10 students only- Art is a compulsory subject until Year 9, however, all of you have chosen to pursue further studies in this subject, can you say what attracted you to art in the first place and what continues to hold your interest in the subject?

APPENDIX V1 Coding Sample: Case 1 Student Interviews

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[REDACTED]

Year 10 [REDACTED] School Students

FA I was curious about the fact that both of you have chosen to go on with art. So what kind of prompted you ... made you feel you wanted to go on with art study?

31 Per/Val/ Art [REDACTED] Well for me it was like I had a whole heap of really technical subjects and I wanted to do something that was more easy... well not exactly easy just more fun.

FA More fun, OK

[REDACTED] So you use your hands...Maybe a bit more practical.

Yep. Hmm

31 Per/Val/ Art [REDACTED] I like the fact that it was very hands on and we got to play with different mixed media- and just enjoy it.

FA So you feel you do enjoy it?

[REDACTED] Yes.

FA Do you think what you doing in art is quite different from what you are required to do in other subjects?

31 Per/Val/ Art [REDACTED] Yeah, you have to get your hands dirty (laughs).

21 Individuality [REDACTED] Its more of an expression of you...its like drama...its an expression of what you. Your own individuality.

40 [REDACTED] Yeah

41

42 FA So it's a bit of a change from other

43 subjects whereby, maybe there is a set of

44 facts or information you are required to

45 learn?

46

47 —

48 **19. Ideas or Opinions** [REDACTED] Yeah it's not a majorly right or wrong

49 subject it's more important to express

50 an opinion about something.

51

52 [REDACTED] Yeah, your opinion counts for

53 something.

54

55 —

56 **7. Art theory/history** [REDACTED] Good, so when do you talk about..

57 [REDACTED] Hmm... so last year it was a lot less

58 theory but this year it is annoying

59 because you have a lot more facts to

60 remember.

61

62 FA So you share opinions in theory lessons.

63 How do you feel about more theory?

64

65 **7. Art theory/history** [REDACTED] Yeah, I don't have a major problem

66 with it but we carry like a miniature

67 book of leaflets (photocopied

68 information).

69

70 FA So you carry quite a lot of stuff around

71 with you.

72

73 **38. Syllabus** [REDACTED] There's much more writing this time

74 and not so much drawing. Yeah its half

75 practical and half theory.

76 FA Why do you think that would be?

77

78 **7. Theory /history** [REDACTED] Because of our exams.

79

80 FA Is it hard to do theory?

81

82

7. Theory/history

83

84

Its more just remembering. Its about knowing the frames like the structural, conceptual, postmodern ...

85

86

FA

87

So are there rules that you have got to learn, do you follow a model?

88

89

7. Theory/history

90

91

92

93

94

More the guidelines that you have to follow within the frames. For your theory test that you can't really intermingle the frames it's just analysed on one basis only... for which you answer the question.

95

96

FA

97

Do you think theory lessons could be fun?

98

99

7. Theory/history

100

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102

They're not bad its just that theory is not exactly what we chose art for. We chose art to get away from all the theory subjects.

103

104

105

Yeah it doesn't involve the students as much as the practical...

APPENDIX VII Coding Sample: Case 1 Teacher Interview

136	NULL	█	Yes, its ogres like me... I think these things get
137			blown out of proportion though...
138	<hr/>		
139		Frances	Sure, I think it does really. You know I wondered if
140			there is a suggested ratio of theory to studio art classes
141			in the syllabus?
142	<hr/>		
143	38. Syllabus	█	Yes there is a kind of general view that it should be
144			around 40: 60 ratio for the junior curriculum and
145			50:50 or even sometimes 60: 40 for the senior
146			curriculum (theory: art-making). That's a joke
147			really because it isn't really possible to do the full
148			amount of theory lessons with Year12 as they would
149			never get through the range and level of studio work
150			they need to have for HSC final work.
151	<hr/>		
152		Frances	How difficult is it to keep up with new perspectives in
153			art instruction...like I know postmodernism is starting
154			to influence art practice and theory.
155	<hr/>		
156	38. Syllabus	█	Postmodernism...oh the confusion when one wades in
157			postmodernist theories in art. I spent lots of time
158			pouring over texts, cross-referencing stuff and
159			checking terms. It has been a bit of a chore keeping
160			abreast of it all and figuring out how it will impact on
161			art instruction. The kids now...because of new
162			syllabus demands...have to learn to do postmodernist
163			critiques and reviews of art works and exhibitions
164			and that this is pretty hard for many of them.
165	<hr/>		
166		Frances	Is it because it is too complex?
167	36. Student behav/resp	█	Maybe that's why but it is typically the bright clever
168			kids that can cope anyway but the average student
169			finds it a real struggle to critique art anyway.
170			But...the kids are looking at a lot of different art
171			works and are naturally picking up new techniques
172			and styles. I'm not really convinced though that we
173			have to make the theory so formal and separate
174			from studio art.
175		Frances	I have some questions I'd like to ask you that relate to
176			critical and creative thinking... that's what I am
177			focusing on in my study. Anyway my first question is
178			what is your understanding of creative thinking? Can
179			you say what you think creative thinking actually
180			entails in a visual arts program?

181	13.Creat./Creative think [REDACTED]	I think it is to do with a lot of things...like thinking outside of the square...creating an atmosphere in the classroom that enables students to take risks with their work. When students are freely experimenting with art media and ideas to explore and discover things they are being creative. Expressing themselves through the elements and principles of design using their own world as a stimulus. Then the classroom becomes an active, happy and creative space where students are encouraged to help each other and to ask the teacher for guidance.
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194	Frances	Right, great...is there anything you can tell me about the Year 10 student's behaviour...in terms of demonstrating creative thinking?
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198	13. Creat/Creativethink [REDACTED]	They are becoming more open to the accidental in their work and their direction is usually gained through making mistakes. They have got to think of mistakes as problems rather than obstacles...Also there is a kind of synthesis of everything that has been learned when they apply themselves to a new task.
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205	F	What about critical thinking in art...what do you think it entails?
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207	<hr/>	
208	22. Critical think [REDACTED]	Hopefully, the students develop an ability to interpret and see what has occurred in their learning,
209		
210	<hr/>	
211	Frances	How do you think you can encourage that as a teacher?
212		
213	46. Teach/meth [REDACTED]	You can help by giving them skills and techniques to enable them to express themselves...and to judge the success of their own learning. Giving them problems to solve. Like, "How do I use this material? Use a stick instead of a brush. Or, how do you create symbols?...There are guidelines for the quality of their work and boundaries they have to work within ... I think without high expectations students will not achieve their best.
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223		Frances	Is there anything else that you think teachers should keep in mind when they want their students to be critical thinkers?
224			
225			
226			
227	22. Critical think	████	It is important that they understand the outcomes of a unit so that they see the worth of doing tasks. That, and understanding that risk taking can lead to success or failure depending...
228			
229			
230			
231			
232		Frances	Depending on anything in particular?
233			
234	22. Critical Think	████	A lot of things really, skills , time, luck...
235			
236		F	Are you aware of any higher order thinking skills instruction theories or models and have you ever applied them to your teaching?
237			
238			
239			
240	46. Teach meth/strat	████	No...I find the question difficult to understand but I often use the idea of conceptual development in my teaching to extend the student's ideas and thinking-starting with brainstorming of a theme, object or issue.
241			
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245			
246		Frances	Theme, objects and issues?
247	46. Teach meth/strat	████	Like a teabag, button or string... or a social issue. Conceptual thinking extends the student's understanding of the world- rather than a piece of string-it could mean tension, binding, a clothes line, etc, etc.
248			
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253		Frances	So student respond to this well do they?
254			
255	36. Stu behav/respons	████	They are often so amazed after brainstorming- they cannot believe they can get such deep meaning out of a simple concept and how meaning can be associated with their own life.
256			
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260		F	So.. it is important in your view to use real life experiences?
261			
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APPENDIX VIII Coding Sample: Observations of Case 1 Lessons

50		there is a new task ahead of them. She
51		explained to them that there are a lot of
52		choices ahead and that they will soon have
53		to make decisions about these. Those that
54		were not clear on what they will be doing
55		are to speak to her individually about what
56		they are going to do during this lesson. They
57		were directed to begin work after 5 minutes
58		of class/ teacher chat and everyone
59		dispersed to find their things to begin work.
60		
61	10. Assist/Stud/Teach	The teacher helps individuals for around 10
62		-15 minutes and then she calls for everyone's
63		attention to talk about some group/class
64		matters including homework. She also is
65		checking on everyone's involvement with a
66		task this lesson.
67		They have 3 things to finish off
68	5. Art make/ Art Work	1. Ceramics-100 figures (not literally 100
69		figures but many human forms are to be
70		incorporated in the one clay sculpture)
71		2. Plaster figures (also figurative)
72		3. Continuous line drawings- figures are
73		developed in the 3D works from these linear
74		sketches)
75		
76	5. Art Make/Art Work	In the second half of the class period the
77		teacher becomes more busy getting wooden
78		boards cut for those that need a base board
79		for their sculptures. Some students are
80		clearly designated to help with this process
81		and they are referred to as her "wood
82		helpers". After setting them up the teacher
83		returns to getting out past display pieces to
84		return to students.
85		
86	NULL	The last 10 minutes are devoted to cleaning
87		but students are not really taking action
88		and many continue to paint up to the end of
89		the class.
90		
91	5. Art Make/Art works	There are some problems related to
92		accidents and damage to ceramic figures.
93		One student's work was smashed while
94		resting on shelves-there is very little shelf
95		space. The student is repairing and gluing it
96		as best she can with the teacher's help.
97		
98	46. Teach Meth/Start	The teacher has been constantly busy dealing
99		with individual construction problems and

100		finding appropriate materials that they need
101		to go on to the next stage of their work.
102		
103	5. Art Make/Art Work	Their ceramic figure projects are now in the
104		process of being glazed and some (those that
105		have been glazed) are arranging their 3D
106		constructions for display. There is a section
107		of the art room being used as a small
108		exhibition space. This has only recently been
109		created. Care is taken to label and title the
110		work and select grounds and backing paper
111		to enhance their presentation by the students
112		themselves.
113		
114	36. Stud Behav/Resp.	Some students seem hesitant to take a course
115		of action with their work. A few quietly sit in
116		front of their work not doing anything at all
117		but do not approach the teacher for help. 2
118		students are fairly non-productive as a result.
119		There are 2 or 3 students that have their
120		ceramics in the kiln right now and they are
121		making use of the time to finish off an earlier
122		drawing project. Everyone chats while
123		working but mostly the conversations seem to
124		relate to the work they are doing in class.
125		Rowen, one of the few boys is making up
126		stories about what are people's figures are
127		doing to be entertaining.
128		
129	34. Problem solv.	After chatting myself with a few students it
130		becomes clear that they have to adapt and
131		change the form of their projects as they
132		continue working on them. There has had to
133		be a lot of problem solving done. For
134		example Sorrel has had a lot of problems
135		with constructing a mobile with her tiny
136		figures, as some of them are not well shaped
137		for easy attachment to wire. She has set up
138		an elaborate system of aluminum wire to
139		hold them in place and has anchored the
140		mobile to avoid past problems with it
141		spinning and springing about that has
142		caused some figures to smash. She says she
143		has lost about 50% of her clay figures.
144		Many other students found the glaze finish
145		to not be what was described on the label
146		and they have resorted to using acrylic
147		paint instead.
148		

149	46. Teach Method/Start	The teacher seems to take an active role in making artistic decisions about the content and approach to the works. She picks up pencils at times and draws her ideas and designs on student's art diaries.
150		
151		
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154		
155		Visit 2 Tuesday October 28 th
156		Around 27 students present.
157		
158	5. Art Make/Artworks	The students are coming up with 2D designs related to the 100-figure project. They are to do two designs and this could be in any medium they wish. Choices are collage, printing or painting. The 2 designs are to be developed from one of their earlier images of figures.
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166	46. Teach Method/Start	There is a kind of distractedness in the teacher as she is introducing the lesson. Her explanations of what they are to do are not that clear or considered and it is as if she is doing this introduction out of a sense of duty- maybe because I am here watching. She does not make eye contact with students are even look to see if they are listening. Some areas of the room are still being cleared up from the previous class so it is not easy to jump into a new activity.
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178	24. Lessons/Teach	One student I quizzed about what the class is to be doing in terms of the new task (because I was a bit confused myself) says she assumes it is a certain task but as the teacher, 'doesn't explain herself real good' you have to guess to a certain extent what she means. I enjoyed the irony of the comment.
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186	NULL	Students are to get out their diaries and pencil cases to start on their designs. Meanwhile there is relief teacher who has come into the class to allow the teacher some release time if she wishes. There is an opportunity to come in and out of the classroom if she wishes but she seems un-inclined to leave and is sorting out the fired clay products taken from the kiln yesterday. She goes on to check attendance from the roll and talks to students about progress and problems with their work.
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APPENDIX IX Lexical Analysis Tables

No	Concept categories	Dictionary	Synonymy (similar)	Antinomy (opposite)	Iponymy (superordinate) & Metonymy (subordinate)	Collocation
1	Art Appreciation Art criticism	Appreciation: A favourable opinion about something. Criticism: A spoken or written opinion/judgment about what is wrong/bad about someone or something.	Art criticism: Critical appraisal Appreciation: Valuing or Approving art	Disapproval Depreciation	Artefacts/ Appreciation Appreciation/ Understanding	Art appreciation Critical appreciation Critical art analysis Critical artistic evaluation Critical judgement
2	Artistic autonomy	Autonomy: Personal independence & the capacity to make decisions for oneself and act upon them.	Artistic self determinacy	Dependence Artistic restriction	Autonomy/ independent decision- making	Artistic freedom Autonomous judgement
3	Styles, genres, language	Genres: One of the categories that artistic works can be divided into on the basis of form style, or subject matter. Style: A distinctive and identifiable form in an artistic medium Art Language: Form of Communication	Sort or type of art Art movements Art terminology	?	Art concepts Movements/ Styles/ Styles/ Expressionism Styles/ Abstraction Genre/ Portraiture/Still Life/etc.	Art styles, stylistic movement, stylistic choice, art genres, art language, art language & concepts, expressive genre, historical genre,
4	Artistic success	Artistic: Good at a form of creative expression. Art success: Art turns out as planned, intended or attempted.	Artistic achievement	Didn't work out Artistic failure		Future artistic success

No	Categories	Dictionary	Synonymy (similar)	Antinomy (opposite)	Iponomy (superordinate) Metonymy (subordinate)	Collocation
5	Process of art making and comments about artwork	Process: A series of actions directed towards the aim of making art. A series of occurrences that produce change or development in artwork. Artwork: A work or works of art.	Art production, construction Artistic creation Artistic Commentary Explanation & observations	Not productive Destruction	Painting Drawing Sculpture Artistic qualities Artistic features	Artistic process Creative process Artistic commentary
6	Art as a Special Mode of operation	Mode: A way, manner, or form of doing something. A unique way of working	Unique Form Particular Extraordinary	Similar Ordinary Regular		Mental operations Physical mode/ operations
7	Art theory/ Art history	Art theory: The body of rules, ideas, principles, and techniques that applies to art. Art history: branch of knowledge that records & analyses past events in the field of art.	Art analysis Art investigation Art philosophy Art concepts	?	Art theory/Analysis Analysis/frames (eg. conceptual, subjective, cultural). Theory/perspectives/techniques/principles. Art history/ Past & present contexts of art Theory/Rules/Principles	Art criticism Aesthetics (of art) Artistic theories. Opinion
8	Art as Therapy	Art therapy: Art as treatment of physical, mental or behavioural problems.	Relief Enjoyment Psychotherapy Healing power	Stressful Non-therapeutic	Therapy/personal problems Thoughts Feelings, emotions	Art therapy Therapeutic benefit

No	Categories	Dictionary	Synonymy (similar)	Antinomy (opposite)	Iponomy superordinate Metonymy (subordinate)	Collocation
9	Assessment	Assessment: A judgement about something based on an understanding of the situation. A method of evaluating. Assessment in art Written/spoken, formal/informal assessment of art making & theory tasks	Analysis Evaluation Judgement	Unobserved Not evaluated Not critiqued	Assessment/opinions/judgment/testing Wrong/right answers Good/bad qualities	Art assessment Critical ass. Fair ass. Subjective ass. Analytical/objective ass. Formal ass. Informal ass. Spoken/written ass., Tests.
10	Assistance offered to students or requested by	Assistance: Help given or made available to another	Help, Aid, support,	No help Unhelpful Hindrance	Assistance/advice Direction	Expert assistance Need for assistance

11	Awareness of Cultural and social differences in art	Awareness: Mindful that something exists, well informed about what is going on- in the art world specifically.	Recognition of/ Consciousness of/ variances in artistic traditions within societies.	Ignorance Un-consciousness	Cultural symbols and motifs	Artistic aware- Cultural aware- Social aware- Cultural insights Sensitive aware- Informed
12	Confidence in own artistic skills and talents.	Confidence: A belief or self-assurance in your ability to succeed.	Self-assurance or self belief in own artistic practice Risk taking Perserverance	Doubt Uncertainty		Artistic confid- Self-confidence Over confident Assured talent
13	Creative Creativity Creative thinking	Creative: Able to create things, using or showing use of the imagination to create new and original ideas or things. Creativity: The quality of being creative, especially in an artistic context.	Originality Imagination Artistic ingenuity Lateral thinking	Unimaginative Uninspired		creative skills creative talents creative ideas creative products creative artwork
14	Desired teacher qualities					

15	Evaluating and refining work	Evaluate: To consider or judge something in order to judge its value, quality, importance Refine (art): To improve work through small changes that make the art product more effective or subtle.	Reflect, examine Assess, Judge Appraise, Critique Consider, Improve Solve	Lack of assessment Not considered	Change/ refine Create/refine Consider/ evaluate	Written &spoken Evaluation Critical evaluation Considering & evaluating Refining art work
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16	Artistic Expression	Expression: The communication of thoughts or feelings to another person through a work of art.	Communication, Manifestation Representation	Lacks expression Lacks feeling-unfeeling Purposeless	Communication/ visual symbols & visual metaphors Visual analogies Express-/feelings Express-/interpretation	Expressionism Expressiveness Creative expression
17	Family, school & community attitudes towards art	Attitude: An opinion or general feeling about something. A general stance towards art study	Valuing the worth or importance of art. Attitudes & Judgements about art	No stance	Beliefs/attitudes Values/Attitudes Attitudes/judge ment	Community attitudes Family attitudes School

			learning			
18	Student perceptions about their future as an artist	Thoughts about future situations or circumstances that might involve active engagement with art production.	Perceptions: An attitude or understanding based on what is observed. Views about an artistic career or artistic prospects	No artistic expectations No thoughts about future as artist	Future/ prospects	Student perceptions Future direction Future circumstances
19	Student's Ideas & Opinions	Ideas: A personal opinion or belief, an impression or knowledge of something	A thought, estimation, judgment, attitude	No personal ideas or opinions No thoughts presented No views	Thinking/idea Idea/ mental picture Concept/idea	Student Idea Student Opinions
20	Imagination	The ability to form images and ideas in the mind, especially of things never seen or experienced directly. New and original and not likely to have been thought up by somebody else. With a tendency to fantasize.	Mind's eye Creative mind Thoughts Visualising	Unimaginative	Thinking/ Imagination Fantasy/imaginat ion	Imaginative ideas Creative imagination Imaginative
21	Individuality (individual, individualism)	The state or condition of being separate from others. A specific personality, character, or characteristic that distinguishes one person from another.	Independence Uniqueness Distinctiveness	Dependence Indistinctiveness similarity	You/Yourself Self Identity/ individuality	Individual Character Individual choice Originality and individuality
22	Intellectual think- Critical thinking Logical thinking	Intellectual: relating to or involving the mental processes of abstract thinking and reasoning rather than emotions. Critical thinking: Disciplined, intellectual criticism that combines research knowledge of historical context and balanced judgement. Logical thinking: Able to think sensibly and come to a	Rational Reasonable Coherent Intelligent	Insignificant Illogical Emotional Chaotic	Thinking/Brain Brain/ Mental processes Intellectual/ abstract thought Logic/reason/ Not emotional	Critical Critical literacy Critical choices Critique/ing Critical reflection Critical analysis Critical evaluation Logical reasoning

		rational conclusion based on facts rather than emotions.				
23	Lateral thinking	Lateral thinking: a term coined by Edward de Bono. It signifies a way of solving problems by unconventional or apparently illogical means rather than using a traditionally logical approach.	Creative thinking Sideways thinking Imaginative thinking	Linear thinking Logical approach Conventional thinking	Brain/ Thinking Mental processing/ mental thought	Lateral thought Lateral thinker Lateral movement

No	Category Words	Dictionary	Synonymy (similar)	Antinomy (opposite)	Iponomy (Superordinate) Metonymy (subordinate)	Collocation
24	Comments on lessons or teacher actions	Assessment of the nature of experiences, events & activities in classes.	Review Commentary Assessment		Discussion/ Comments Interview/ comments	No comment Student comments
25	Life experience as it relates to art	Life experience: The knowledge of & skills gained through being involved in, or exposed to a series of lived events & experiences.	Prior experiences Connections between life history and art		Life experience/ Personal visual narrative	Life experience Lived experiences Art experience
26	Life Benefits as a result of studying art	Benefits: Art as something that has a good effect & promotes well being	Personal, social, financial benefit.	Non beneficial	Benefit/ financial, personal, social, emotional, career	Life benefit
27	Art Materials Art Equipment	Art Materials: The substances used to make art. Art Equipment: The tools needed for the purpose of artmaking.	Resources Supplies Tools	Ill-equipped Lack of materials		Equipped
28	Student Motivation (to engage in art study & practice)	Motivation: The act of giving somebody a reason or incentive for doing something. A feeling of interest or enthusiasm	Initiative Incentive Desire to engage Interest	Unmotivated No-incentive Lack of enthusiasm	Motivation/ Intrinsic & Extrinsic	Positively motivated
29	Originality in art production	The ability to think creatively and depart from traditional forms. Something	Not derivative Unique Innovative Creative	Derivative Copied Similar Replicated	Originality/ new ideas	Artistic originality Expressive originality

		original, for example a new idea or approach.				
30	Student artistic development & growth	Changing or growing skills & understandings in the visual arts. Progress is made towards becoming more successful as an artist.	Progress Change	Non-developmental Unchanged No progress	Development/ Cognitive dev Motor-skills dev Social dev Personal dev.	Artistic development Artistic growth

No	Category Words	Dictionary	Synonymy (similar)	Antinomy (opposite)	Iponomy (superordinate) Metonymy (subordinate)	Collocation
31	Personal value, feelings about art, interest in art	Personal views about the worth, significance importance or usefulness of art				Personal value Personal feelings Personal interests
32	Preference for art styles & art forms	A desired personal choice of employing particular art forms or art styles in artmaking. Art style: manner of expression, eg. realism Art form: Structural form or use of media such as in painting, sculpture.	Art expression			
33	Views about the purpose of art education	Purpose: the reason for doing art study and the intended goals of art education.	Reason Views Intentions Goals	Purposeless Ill defined goals	Perspective/ view	Viewpoint Personal view
34	Problem solving	Problem: Involving difficulties when there appears to be an uncertain outcome. A question or puzzle that needs solving. Solve: To find a way to successfully deal with a problem or difficulty.	Problems Finding Answers			Creative problem solving
35	Space and time	The qualities of the physical space allocated for art classes.	Environment	?	Environment/ Place/ space Space/ layout	Physical space Timeslot Timetable

		Time: The pattern of scheduling, frequency & length of time devoted to art lessons each week.			Time/ schedule	Qualities of physical space Space & planning
36	Student behaviour or response	The way in which a student behaves or acts and responds to a certain set of conditions.				Behavioural response Positive response Negative response Creative or critical response?
37	Student academic performance					Academic performance Academic grades
38	Views about content or application of the syllabus	Syllabus			Curriculum/visual arts syllabus	Teaching syllabus Visual art syllabus Syllabus content Syllabus structure Syllabus aims
39	Teacher as artist					
40	Teacher critique of student work	Teacher discusses & comments on the creative work after making a quick informal assessment about good/bad qualities of the piece. Advice about further work to be done is then offered.	Analysis Assessment Evaluation Assess critically			
41	Teacher demonstration	Teacher enacts a public show of how something is done or how things work with the class group.				
42	Teacher's dialogue –during class	Teacher talks aloud to class group and individuals.	Teacher's Talk Teacher's discourse, Teacher's conversation or chat.	No dialogue		
43	Teaching experience	Teaching experience: Professional experience, skills and knowledge gained through teaching art.				
44	Teacher interest in art	Interest (teacher/art): A feeling of curiosity or				

		concern about art that draws the teacher's attention towards it.				
45	Teacher comments about teaching as learning	Coming to learn more about art as a result of teaching the subject over time.				
46	Teaching methods & strategies	The different ways to teach are often referred to as the teacher's pedagogy and this includes a range of methods/strategies.			Student centred Direct Indirect	Theory, System, technique Motivation Action, Plan
47	Art techniques practiced and taught	Technical aspects of design & production in art.	Method Practice Skill Expertise Procedure	Non technical	Artwork/ Technique Technique/ handling	Art techniques Technical skill Technical mastery
48	Visual texts and resources	Visual images used in teaching Teaching resources used in visual arts processes and tasks.	Visual imagery			Visual texts Visual resources Visual images Visual aids
49	Visual literacy Visual thinking	Visual literacy is the set of skills involved in the interpretation and criticism of images. The concept of visual literacy is also the ability to create/use images and visual symbols to communicate Visual thinking is the phenomenon of thinking through visual processing, where most people would think with linguistic or verbal processing. It is non linear and often has the nature of a computer simulation.	Form a visual image in the mind visual/ spatial learning Visual processing Visualization	Visually illiterate No visual processing	Literacy/Visual literacy Visual literacy/visual imagery	Images Seeing Thinking Interpretation Creation Communication

APPENDIX X **Transcript Sets with Codes Mentioned and Number of Words Attributed to Codes**

Transcript Sets	Mentioned Code	Number of separate mentions	Number of words	Percentage of total words for emphasised categories
A - Primary School Teacher Interview (CASE 3)	1	2	175	13.00
	2	1	21	-
	5	1	42	-
	8	1	21	-
	12	1	7	-
	28	4	98	7.32
	13	3	25	-
	30	1	105	7.85
	31	2	73	5.65
	35	2	77	5.75
	36	2	140	10.45
	38	3	280	20.9
	46	3	133	9.94
	48	2	112	8.38
B - Primary School Teacher Interview (CASE 4)	1	1	84	8.75
	5	2	25	-
	12	1	21	-
	13	2	29	-
	17	3	194	19.7
	28	1	63	7
	30	2	245	25.54
	31	3	147	14.70
	35	2	70	7.29
	36	1	25	-
	38	1	70	7.29
	46	1	70	7.29

C – Secondary School Teacher Interview (CASE 2)	1	5	499	8.4
	2	1	35	-
	4	1	35	-
	6	1	28	-
	7	3	355	6.1
	8	1	70	-
	9	2	91	-
	12	2	98	-
	13	6	322	5.48
	16	2	91	-
	17	2	92	-
	19	1	77	-
	20	1	70	-
	21	1	63	-
	22	7	749	12.76
	23	3	168	-
	28	4	420	7.15
	30	4	441	7.51
	34	2	252	(4.4)
	35	1	35	-
	36	4	210	-
	38	5	525	8.94
	40	1	70	-
	43	3	203	-
	44	3	140	-
	45	3	161	-
46	4	420	7.15	
49	1	217	-	

D – Secondary School Teacher Interview (CASE 1)	5	7	414	13.73
	7	4	225	7.46
	9	3	117	-
	11	1	54	-
	13	6	477	15.28
	20	1	27	-
	21	1	45	-
	22	4	306	10.15
	28	1	27	-
	30	3	252	8.36
	34	2	72	-
	35	2	180	5.97
	36	2	54	-
	38	2	90	(2.9)
	40	1	27	-
	46	4	270	8.96
	48	1	27	-
	49	1	28	-
E - Primary School Student Interviews (CASE 3)	1	1	49	7.21
	2	3	70	10.30
	5	3	98	14.43
	6	1	28	-
	15	1	63	9.2
	20	1	39	5.1
	31	2	56	8.24
	35	2	105	15.46

F – Primary School Student Interviews (CASE 4)	1	14	893	17.2
	2	6	323	6.22
	4	1	152	-
	5	14	950	18.30
	6	1	19	-
	8	2	114	-
	11	1	19	-
	12	4	237	-
	15	4	351	6.77
	16	1	28	-
	17	1	114	-
	18	1	20	-
	19	1	47	-
	20	5	175	(3.4)
	22	3	28	-
	24	12	855	16.48
	27	4	161	-
	29	2	104	-
	30	2	133	-
	31	5	296	5.8
32	1	20	-	
35	9	380	7.32	
40	1	9	-	

G - Secondary School Student Interviews (CASE 2)	1	4	165	7.97
	2	3	52	-
	3	1	37	-
	5	3	52	-
	6	3	112	5.43
	7	1	36	-
	9	1	30	-
	10	1	15	-
	12	1	7	-
	14	6	285	13.77
	15	2	23	-
	19	3	90	-
	20	2	67	-
	23	1	15	-
	24	3	300	14.49
	25	2	202	9.78
	27	2	60	-
	28	2	45	-
	29	1	30	-
	30	3	135	6.52
31	3	60	-	
33	2	83	-	
35	2	30	-	
40	1	53	-	
49	2	80	-	

H – Secondary School Student Interviews (CASE 1)	1	2	190	5.01
	2	2	34	-
	5	4	229	5.78
	6	2	102	-
	7	5	425	10.7
	8	2	34	-
	9	4	170	-
	11	2	51	-
	13	3	144	4.25
	20	2	42	-
	21	2	51	-
	28	3	110	-
	29	2	112	-
	30	1	127	-
	31	2	119	-
	33	3	212	5.35
	34	1	28	-
	35	2	170	-
	38	1	25	-
	40	5	221	5.56
41	1	59	-	

I - Primary School Observation Notes (CASE 3)	1		1120	34.33
	4		14	-
	5		1218	37.33
	15		42	-
	20		21	-
	27		14	-
	35		301	9.22
	36		154	5
	42		58	-
	46		336	10.30
	47		14	-
J – Primary School Observation Notes (CASE 4)	1		744	17.19
	3		16	-
	5		1360	31.42
	10		40	-
	12		48	-
	19		24	-
	20		104	-
	24		25	-
	27		96	-
	30		40	-
	34		88	-
	35		204	5
	36		296	6.83
	39		64	-
	41		96	-
	42		104	-
	46		864	19.96
	47		95	-
48		40	-	

K – Secondary School Observation Notes (CASE 2)	4	-	26	-
	5	-	429	15.6
	7		507	18
	10		45	-
	11		19	-
	22		155	5.65
	35		32	-
	36		280	10.2
	41		208	7.56
	42		325	11.8
	46		734	26.71
	48		156	5.67
	L – Secondary School Observation Notes (CASE 1)	2		80
5			1088	29.12
7			65	-
9			144	-
10			160	-
13			380	10
22			145	-
34			120	-
36			405	11
40			384	10.27
41			104	-
42			224	5.99
46			656	17.55

Comparison of Transcript Sets A-L

Transcript Set	Emphasised Code Numbers *everything over 5% across all transcripts in that set.	Common Emphasised Code Numbers *everything over 5% that is common to all transcripts in that set.
All data across all case studies	1, 2, 5, 7, 13, 15, 22, 24, 28, 30, 31, 33, 35, 36, 38, 40, 41, 42, 46, 48	-
All high school data	1, 5, 7, 13, 22, 24, 28, 30, 33, 35, 36, 38, 40, 41, 42, 46, 48	-
All primary school data (A, B, E, F, I, J)	1, 2, 5, 15, 24, 28, 30, 31, 35, 36, 38, 46, 48	1
All teacher interviews (A – D)	1, 5, 7, 13, 22, 28, 30, 35, 36, 38, 46, 48	30, 46
All high school teacher interviews (C, D)	1, 5, 7, 13, 22, 28, 30, 35, 38, 46	7, 13, 22, 30, 46
All primary school teacher interviews (A, B)	1, 28, 30, 35, 36, 38, 46, 48	1, 30, 35, 38, 46
All student interviews (E – H)	1, 2, 5, 7, 15, 24, 30, 31, 33, 35, 40	1
All high school student interviews (G, H)	1, 5, 7, 24, 30, 33, 40	1, 28, 30
All primary school student interviews (E, F)	1, 2, 5, 15, 24, 31, 35	1, 2, 5, 15, 35
All observation notes (I – L)	1, 5, 7, 35, 36, 40, 41, 42, 46, 48	5, 36, 46
All high school observation notes (K, L)	5, 7, 13, 36, 40, 41, 42, 46, 48	5, 7, 36, 41, 42, 46
All primary school observation notes (I, J)	1, 5, 35, 36, 46	1, 5, 36, 46