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The Language of Living:
Developing Intelligent Novices
at The Suter Art Gallery

A thesis presented in fulfilment of the requirements for the degree of

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Abstract

This research was founded in Bruer's (1993, p.15) concept of the intelligent novice, considering students visiting an art gallery could be so described. He defines intelligent novices as "people who learn new fields and solve novel problems more expertly than most, regardless of how much domain-specific knowledge they possess. Among other things, intelligent novices seem to control and monitor their thought processes". Peckham's (1965) 'cognitive dissonance' is related, describing how some novice learners respond in cognitively threatening situations. These theories are augmented by Efland's (2002) exploration into art and cognition, in particular, the concepts of 'ill-structured cognitive domains' and 'cognitive flexibility'. Drawing on and reconceptualising these theories, this research addresses how the art gallery environment helps students become intelligent novices.

The case study focuses on the researcher's education programmes located at The Suter, Te Aratoi a Whakatu, Nelson, New Zealand's oldest public art gallery, established in 1898. This cross-disciplinary research bridges education and museum studies, and is action-based using mixed-methods. Through a process of journaling, observing, discussing, dialoguing, audio and video recording, as well as collecting and analysing documents including students' work, the researcher considered how young students develop as intelligent novices. She found that their learning in the art gallery was enhanced by three interrelated factors: the individual's agency, physical aspects of the art gallery, and the community of practice which developed around class visits, each essential to the development of the intelligent novice. A framework was developed to support art museum educators in facilitating these attributes.

The thesis suggests that:

Intelligent novices independently make effective connections between prior learning and novel situations;

Within the art gallery as an ill-structured domain, the art gallery educator works with communities of practice to support development of intelligent novices;

Repeat gallery visits enable students and communities of practice to practise particular strategies in order to develop as intelligent novices.

Intelligent novices flourish when all members of the communities of practice demonstrate such characteristics.

It concludes that, due to the 'ill-structured' nature of the art gallery environment, and its cultural role in society, the role of the intelligent novice is as active cultural transformer.

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Heartfelt thanks also go to the students and families of Lesley Kotua's classes in 2008 and 2009. Their willingness to be involved has allowed an insight into a fascinating, under-researched aspect of education, and it was with great pleasure that I was able to explore in detail the process of these particular children and their families learning at The Suter.

Finally I would like to express my gratitude to The Suter, in particular, the director, Julie Catchpole, for their support in this research.

Approval for research has been obtained from the appropriate University Ethics Committee for the experiments described in the thesis. The pilot stage of the research was considered low risk and was recorded on the Low Risk Database which was reported in the Annual Report of the Massey University Human Ethics Committees 2008. The second phase of the research, the video discussions: "The video research, Massey University Human Ethics Committee: Southern B Application 08/47" was granted ethics approval on 10 November 2008.

Readers Notes

The citation within this study follows the convention of giving page numbers for direct quotes, and author followed by date for general references.

All participants' names, except that of Esther and Lesley, have been changed for the purpose of anonymity.

This study refers to The Suter as an art gallery; theorists cited, however, at times refer to such institutions as art museums, or simply museums. For the purpose of this study art gallery is synonymous with the term art museum.

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Chapter One: Introduction

This chapter defines the concept of the intelligent novice, introducing the thesis's key argument and conceptual framework. The participants and the setting are presented, followed by a description of ethical issues, an account of possible research biases and limitations of the study, and a summary of the chapters.

General Concept

Bruer (1993) describes intelligent novices as “people who learn new fields and solve novel problems more expertly than most, regardless of how much domain-specific knowledge they possess. Among other things, intelligent novices seem to control and monitor their thought processes” (Bruer, 1993, p.15). An intelligent novice is a learner who can access relevant prior knowledge and strategies, applying them in novel situations; who can learn from his/her mistakes; who can make use of appropriate learning resources in a particular setting (including people); and who is not intimidated by unfamiliar settings.

The research was developed to consider the following question: “How does learning in the art museum help students become intelligent novices?”

This can be broken down into the following questions:

1. How do intelligent novices make effective connections between prior learning and novel situations?
2. How do repeat visits enable students to practise strategies to develop as intelligent novices?
3. In what way does the community of practice support intelligent novices?
4. In what ways does the community of practice demonstrate characteristics of the intelligent novice?

The study seeks to understand how intelligent novices can be developed through art museum education, and in so doing explores the gallery teacher's role in assisting students' learning. As the research progressed and the data analysed, it became evident that the adults who visit with the students also had an integral role in the

student's learning process at The Suter. This relationship between the adults and children was symbiotic, and formed a 'community of practice' where all members took on the role of novice learner in some sense. Consequently the research project became more focused on this relationship as it progressed. The research method used here is 'action research' with a conceptual focus on constructivist learning. The evolution of the research direction is in keeping with both constructivism and action research since ongoing development is an integral aspect of both.

This research is of particular interest and relevance to the researcher, since most visitors she comes into contact with in her role as educator at The Suter are novice learners in the art gallery setting, most particularly her students, but often the accompanying parents and teachers also. The Suter's education services are used principally by primary schools, so very few specialist art teachers visit. Teachers tend to be generalists, and a side effect of having visits by mainly primary students is the large and varied range of adults who accompany class visits.

The wider implications of the research relate to the exponential growth of knowledge in society. Because of this people, are more and more likely to be in the role of novice as they increasingly encounter new information in their daily lives. To be able to approach novel learning situations confidently and 'intelligently' is essential to functioning in the world today. The art museum can be regarded as a safe testing ground where in a non-threatening situation visitors can step into the unknown. This research looks in particular at learners with little experience of viewing and analysing art.

This research is a cross-disciplinary study which creates a link between museum and education studies. It is, however, firmly planted in museum studies because of the critical importance of the art gallery setting to the study.

Setting

Situated cognition regards context as critical to the learning process. This research treats the art museum as a crucible for learning. Because the researcher regards the learning which takes place in the art museum as of a particular type, unable to be replicated anywhere else, the study could not take place in the classroom or another educational setting.

The setting for the research is The Suter, Te Aratoi o Whakatu, Nelson's public art gallery. The Suter is contracted by the Ministry of Education to deliver 'Learning Experiences outside the Classroom' school programmes, employing a 0.5 educator who provides at least eight different programmes for primary visits each year. Education programmes offered are varied, linking to a range of curriculum areas, and featuring a variety of learning experiences for students, including hands-on learning activities, and differing opportunities to respond to the artworks on display. Visiting teachers are provided with a comprehensive education kit prior to visiting, to enhance learning opportunities relating to the visit. The Suter provides education services for approximately twenty-one, mainly local, schools each year.

During the research Lesley Kotua taught a Year 1&2 class at Nelson Central School, which is five minutes walk away from The Suter. It is a Decile Seven¹ state primary school located in central Nelson with a roll between 400-440 students at the time of the study. The pilot discussions and review of filming took place in Lesley's classroom after school. Conducting the discussions in the teacher's own classroom created a relaxed atmosphere for the process, and the sessions were amicable. The filming occurred at The Suter during two of Lesley's regular visits, the last of the year for the 2008 class, and the second of the year for the 2009 class.

Participants

At the time of the study the researcher, Esther McNaughton, had been The Suter's educator for eight years. Prior to that, she worked for ten years as a primary teacher, mostly with six and seven-year-olds. At The Suter she has mainly taught primary aged students with little in-depth knowledge of art, and consequently has developed specific learning approaches suitable for these inexperienced learners. Esther believes strongly that public art museums should be accessible to all, whatever their background or ability. Providing learning experiences that help all visitors make use of, and benefit from, artworks in galleries is central to this, and requires an

¹ Deciles are used by the New Zealand Ministry of Education to allocate funding to schools. They reflect the average socio-economic backgrounds of students at the school. There are ten deciles; decile one having the highest proportion from low socio-economic backgrounds and decile ten, from high socio-economic backgrounds

understanding of how people with little art knowledge gain information from, interpret and enjoy artworks.

Lesley is a primary teacher of fifty years' experience, and has held many roles within the education system during this time. She has been a school principal, deputy principal, syndicate leader, and advisor of Psychological Services; as well as having taught whanau bi-lingual education, Reading Recovery and special needs. At the time of the study she was teaching a Year One and Two composite class at Nelson Central School. She has been working at the school for many years, and is in fact an 'old girl' of the school. Lesley has been a regular user of The Suter's education services, with an established history of using Esther's programmes, and incorporating the gallery sessions effectively into the overall fabric of her classroom practice.

Two of Lesley's classes participated in the study; those of 2008 and 2009. They consisted of Year One and Two students, who were six and seven-year-olds at the time of the study.

Ethics

The main ethical issues relating to this research were due to the fact that children were participants. The pilot stage of the research, consisting of discussions with one adult participant, following the principles of informed and voluntary consent, was considered low risk. It was recorded on the Low Risk Database which was reported in the 2008 Annual Report of the Massey University Human Ethics Committee.

The second phase of the research, the video discussions, involved filming participants under the age of sixteen years. To ensure informed consent was given, the school was involved in a consultative process of developing research procedures. Since the students were six and seven-year-olds who were still learning to read, information and consent forms were given to parents or caregivers, who interpreted and supported their children in the consent process.

The ethics committee raised concerns about procedure if consent was not given by all participants, and how to address this in an equitable way. It was decided that since fixed cameras were used, these students would simply keep out of the range of filming. However this did not eventuate, since for both aspects of the research

informed consent was given by all participants, as well as by the two institutions concerned (The Suter and Nelson Central School).

The video research, Massey University Human Ethics Committee: Southern B Application 08/47 was granted ethics approval on 10 November 2008.

Confidentiality

Written permission to name the institutions to which the participants belong was given prior to commencing the project. Student participants and adult helpers are not named, but as Lesley gave permission she is referred to by name throughout the project.

Storage

The data and consent forms are, and will continue to be, stored in a locked facility at The Suter indefinitely. This will enable future researchers to access and make use of the data.

Sharing of Findings

Esther shared and amended transcripts and relevant chapters of the thesis with Lesley as necessary. The families of the students involved, the classroom teacher, the school principal and the director of The Suter are to be presented with a summary of the findings of the research upon its completion.

Research Biases

Esther and Lesley had a professional relationship prior to this research which led to Lesley being identified as a particularly interesting participant. Lesley was a frequent, established user of The Suter's education services. Obviously the researcher would show herself in a more favourable light professionally if the feedback on her sessions, obtained during discussions, was positive, and with such well-established relationships, a lack of objectivity could be supposed. However this relationship aligns with the methodology of the thesis, action research (this is discussed further in Chapter Three). Additionally in this research project there are no pecuniary benefits or professional benefits for either participants or the researcher.

The children recorded were the researcher's students for the course of the filming. It was important that their ability to benefit from learning at The Suter was not compromised. This was carefully considered prior to the filming. However, since the researcher was likely to have an increased awareness of the educational concerns of her students during these sessions, due to the focus of the research, they should not have been disadvantaged and were likely in fact to have benefited from the experience.

Limitations of Thesis

This research project was small in scope, and enabled an in-depth focus on a particular relationship, that between Nelson Central School and The Suter. Because of the research's specific nature caution must be exercised when making generalisations. However this focused view into a successful and interesting example of learning and intelligent novices could lead to consideration of the scope and possibilities of the educational role of art museums in New Zealand.

Summary of Chapters

Chapter One: Introduction

Intelligent novices are "people who learn new fields and solve novel problems more expertly than most, regardless of how much domain-specific knowledge they possess. Among other things, intelligent novices seem to control and monitor their thought processes" (Bruer, 1993, p.15). Chapter One introduces the main research question, namely: "How does learning in the art museum help students become intelligent novices?" Being an intelligent novice is a constructive way of approaching new learning in many different settings: and this research regards the art museum, due to its ill-structuredness and its motivating qualities, as an environment particularly conducive to the training of intelligent novices. The introduction explains specifically how this case study involved the close observation of a community of novice learners in a particular art gallery setting, through the eyes of two educators: an experienced classroom teacher and an art gallery educator.

Chapter Two: Research Methodology

Chapter Two presents the research as a case study of a particular relationship between a teacher, her students and an art gallery. The research is mixed method action research which enables a self-reflexive approach. It places the researcher within the data, and enables an acknowledgment of the transitional nature of knowledge, which aligns with the constructivist philosophy underpinning the study.

Chapter Three: Literature Review

The literature review looks at barriers to learning in the art gallery, and approaches which might counteract these. Chapter Three initially delves into issues relating to power and knowledge within the setting, inquiring into the causes of obstacles to visiting. These concepts inform the ensuing section on approaches to learning there. Constructivism is very significant in the study. Its focus on learning being constructed within the individual has important implications when considered alongside concepts of power and knowledge in the art gallery. The specific concepts of cognitive dissonance, ill-structured cognitive domains, cognitive flexibility and intelligent novices are introduced as a means of considering how an individual visitor might become empowered.

Chapter Four: An Exploration through Dialogue

The data gathered from the pilot and video discussions was distilled to address the key research question “How does learning in the art museum help students become intelligent novices?”. Further questions guided the analysis and presentation of the data:

1. How intelligent novices make effective connections between prior learning and novel situations?
2. How do repeat visits enable students to practise strategies to develop as intelligent novices?
3. In what way does the community of practice support intelligent novices?
4. In what ways does the community of practice demonstrate characteristics of the intelligent novice?

Chapter Five: Discussion

This chapter considers the data in relation to the theory: the art gallery as a setting for the development of intelligent novices, how this occurs, and the influence of the community of practice. It examines the gallery's status as an ill-structured learning environment and its societal role in the development of culture, before discussing the particular cognitive challenges which arise for learners in this setting. The development of students' cognitive flexibility through taking on the role of intelligent novices in the gallery is suggested. Considering the developmental level of the research group, it is suggested their learning could be supported through communities of practice and the repetition of visits. The elements of learning in the gallery are broken down and linked to the effectiveness of the learning community. This effectiveness seemed to be contingent on the members' sense of agency of in the gallery environment.

Chapter Six: Developing Intelligent Novices: A Model for Learning in the Art Gallery

Chapter Six introduces a model which shows how agency, physical aspects and communities of practice influence the learning which occurs in the art museum. It shows the gallery educator facilitating the development of intelligent novices by managing the interplay between the influential factors of: the social, the individual, and the environmental. Using the analogy of an improvisational theatre, the model explains the gallery educator's role as one of empowerment; that training intelligent novices is in fact facilitating the development of 'active cultural transformers'.

Chapter Seven: Conclusion

Chapter Seven concludes that, due to the ill-structured nature of the art gallery environment, and its cultural role in society, learners in the setting can use the qualities described by Bruer's (1993) definition of intelligent novices, to become active cultural transformers. This occurs through the learner interacting with the physical aspects of the gallery such as the artworks, and through building understandings through socially shared cognition in a community of practice. Despite the developmental level of the students in the study, they were seen to be able to develop as intelligent novices with the support of the community of practice, and

repeat visits to the gallery. These factors were seen to enhance the learning of all members of the community of practice within the research group.

The research emphasises the benefits of repeat visits, concluding that they led to more developed thinking, as the educator is able to facilitate higher level thought when the students have developed a certain level of 'cultural competence'. It also considers the implications of this finding on the current LEOTC criteria.

Finally the conclusion compares how aspects of learning in the art museum noted in the current research aligns with the current New Zealand curriculum's Key Competencies. It notes the narrow scope of the research and suggests that future research of a comparative nature is needed to test the findings.

Chapter Two: Research Methodology

This chapter outlines and gives a rationale for the research's methodology. It firstly explains the relevance of the case study method used and the importance of the literature review, before identifying and describing the action research methods and the research processes followed, particularly relating to filming. This research focussed on the behaviours of visitors to education sessions at The Suter. It gathered evidence to gain an understanding of how intelligent novices can develop in such an institution. The research methods in this project have been developed in line with its underlying understanding of learning, namely constructivism, which suggests that knowledge is created rather than absorbed.

The Case Study

Willig (2008) states that case studies can represent a certain type of situation or be interesting for their own sake. This case study was designed as a touchstone to develop the researcher's ideas about intelligent novices in art galleries, as well as to highlight a very particular relationship, that between Esther at The Suter, and Lesley and her students from Nelson Central School.

The specificity of this case study makes the setting very pertinent. The research pays attention to contextual data as Willig (2008) suggests, above all because the art gallery setting is intrinsic to the conceptual basis of the study; that learning in an art gallery is of a particular type that can only occur there, and has specific benefits to students.

The research takes place over time, as Willig (2008) also suggests, fourteen months overall for the pilot and video discussion phases. This has enabled the viewing of the development of certain children, as well as the community of practice, and as a result has enabled the growth of understanding in Esther and Lesley. Additionally the project is action research which needs to take place over time, due to the fact that it is a cyclic approach.

Literature Review

A thorough literature review was conducted before the research commenced, since, as Willig (2008) states, case studies should be grounded in theory. This identified the phenomenon of the intelligent novice, before creating a theoretical framework in which to place the current study. The reviewed research looked at learning and cognition in the art gallery, as well as agency and other societal factors which might influence learning. This enabled a clear view of the research question. It was discovered that, although the concept of the intelligent novice had been introduced, and a certain amount of research had considered cognition in the arts, the idea of the specific setting of the art gallery as an incubator for intelligent novices was undeveloped.

The literature review explored the research question “How does learning in the art gallery help students become intelligent novices?”: through looking at its role as a societal institution for learning, considering power and knowledge within the art gallery, as well as barriers to visiting, referring to Bourdieu’s concept of habitus. These led to a consideration of particular learning concepts for the setting, namely: cognitive dissonance (Peckham, 1965); cognitive flexibility (Efland, 2002), ill-structured cognitive domains (Spiro et al., 1987) and intelligent novices (Bruer, 1993). These concepts became instrumental to this research, as together they provided the rationale for the study. The concept of cognitive dissonance provided the basis for the research problem; ill-structured cognitive domains gave the setting: practising effective novice learning behaviours such as cognitive flexibility, and intelligent novice behaviours provided the model of successful learning.

With this solid theoretical background, the researcher was able to start her action research in an informed way, with a strong conceptual framework to support the ideas which emerged through the cycles of observation, contemplation and discussion.

Following the literature review, Esther journalled daily education sessions at The Suter in terms of novice behaviours. Through these she began to notice behaviours which varied between groups, depending on attributes such as age or frequency of visits. Taken together the journalling and the literature review provided strong groundwork to support the in-depth study of the intelligent novice.

Action Research

This research has a very practical application: it seeks to study and enhance the researcher's own practice through careful self-observation, following La Pierre and Zimmerman's (1997) rationale for action research. In so doing it hopes also to increase understandings of how art museum educators can aid novices learning in their institutions. Lewin's (1946) formative action research model is a repeated cycle of four basic components: planning, acting, fact finding, analysis. The repetition enables observation of development occurring over time. This project followed three cycles of action research, starting with the pilot study which analysed student visits in the early part of 2008, followed by the later filming and analysis of two education sessions. This allowed the observation of changing behaviours of novices over time. Additionally for the educator researchers, it enabled the growth of their own understandings over time. As the stages of the research progressed, discussions became increasingly focused. Action research enables the researcher to act like an intelligent novice; open, observant and able to put existing knowledge to good use where necessary, learning from a new situation in order to improve one's practice. This can be seen through the three cycles, as the observation and discussion became increasingly refined.

After the literature review and the self-journaling, the pilot study took place. It considered "What is the concept of the intelligent novice" and "What is its significance in the art gallery?" through in-depth discussions with Lesley. The conversations used open questioning to elicit narratives and shared stories (as opposed to 'measurable data') mainly focusing around the Suter visits of Lesley's 2008 class. These aimed to make sense of the concept 'intelligent novice' in the context. As well as establishing a baseline understanding of mutual viewpoints on relevant concepts, these discussions created a developed picture of the class visiting throughout the year, and the ongoing changes which were observed. This information was collected in order to determine specific directions for the ongoing research. At this early stage of the research, Lesley perceived herself very much as an interviewee and prepared thoroughly for sessions. Since this phase relied very much on memory to provide data for discussion, Lesley's preparation was very helpful. It also enabled

her to assert viewpoints clearly, enabling Esther to see Lesley's ideas as distinct from her own.

The next phase of the research focused on the questions: "What is the concept of the intelligent novice?", "What is the significance of the term in the art museum?" and "How can this concept inform the practice of an art museum educator?" This involved documenting and analysing the researcher's own practice, from the perspective of the intelligent novice. It continued to explore the gallery teacher's role, filming two of Lesley Kotua's classes, to record instances of learning occurring in the gallery. The first session filmed was the final Suter visit of the year for the students featured in the pilot study. Because of this, connections between the pilot study and the second phase were strong. The second filming episode provided contrast, through the engagement of a new class where relationships and routines were being established.

The Process of Filming

The approach to the filming and subsequent analysis of film data was developed to align with the research's overall constructivist, action research philosophy. The film was used to provide a visual record of Suter lessons to provide data for discussion. It enabled Esther and Lesley to step back from their practice and study what was happening. Whilst the pilot research relied on the memory of events, the film enabled much more specific observations.

Fixed cameras were used in the gallery for the duration of the two visits, about 90 minutes each. Camera positions were chosen so as not to distract the class. The students scarcely seemed to notice the cameras, and simply worked in their normal Suter programme. Although initially two cameras were used, it became apparent that for the second session a single camera would be sufficient to gain data required.

Lynn & Lea (2005) describe the concept of reflexivity as "an awareness of the researcher's role in acquiring data." In line with Pink (2007) the research took the view that neither video nor its analysis can provide an objective and true visual record of an event. The researcher was an active participant, therefore the data was inextricably interlinked and influenced by her behaviour. In this case reflexivity was

particularly significant, as she, to some extent, controlled the construction of the video data and its later analysis by discussion.

As Hockings (2003), states, since it is impossible to video record people undisturbed, video footage is inevitably constructed. Pink (2007) suggests that, by using a reflexive approach at each stage of analysing videoed research material, both the constructedness of its categorisation and the researcher's personal and academic agendas are recognised.

Pink puts forward that analysis should focus on the meanings that different individuals give a film in varied contexts, as well as film content. It follows that Lesley and Esther participated in the video analysis collaboratively. They had differing roles in relation to the Suter education programme recorded, thus different perspectives on the film data. Pink (2007) suggests using a reflexive approach to video by asking how knowledge is produced through the relationship between the researcher and the subject. In the reviewing process it became apparent that Lesley was much more focussed on the students as individuals, consistent with her established relationship to her class.

Byrne and Doyle (2004) suggest using visual images as a stimulus for the interviewee to talk about what these things convey in relation to a particular theme, proceeding as a semi-structured or unstructured interview. This was the approach used in the analysis of the video, except for the fact that the analyses were discussions between participants, rather than interviews. Although loose questions or topics were put forward, as the discussions progressed the momentum increased and they took on a life of their own. By the last filming episode analysis the tone had become very lively and enthusiastic.

The integral subjectivity in the filming process was taken into account. Esther and Lesley shared video footage, to both develop understandings about film sequences, and to examine how they situated themselves as viewers of the footage (Pink, 2007). Through discussion of the experiences and context on film Esther was able to contextualize, and to relate this to wider academic debates (Pink, 2007). Lesley's participation in the review of video facilitated this, by reference to her experiences and practice as an educator in relation to aspects of the video, and by connecting

concepts from earlier discussions in the pilot study. Banks (2001) suggests taking into account the importance of external narrative when incorporating images into the analysis, considering aspects which did not show on the film. The learning takes place over time and therefore it is not just what occurs during The Suter visit filmed which is of relevance. Once again Lesley's role was integral in these broader understandings, as was reference and comparison to ideas discussed in the pilot study.

Taking into account issues of reflexivity Esther developed the following strategies for working on film data with Lesley:

- Talking about it in relation to the concept of the intelligent novice.
- Treating it like a semi-structured interview.
- Using a loose interview style to keep discussions flowing, avoiding a fragmented approach.
- Talking about how Lesley situates herself as viewer of the footage.

Structured Discussion

After the filming Esther and Lesley reviewed and analysed the film, working together to understand the learning which occurred. The film data built on the pilot research to date, to create a picture of how the interaction between educators, learning supporters and learners in the art museum aids novice learners. These in-depth discussions with Lesley became very much a dialogue between the two educators, developing narratives stemming from their experiences of working with students as learners in the gallery.

One of the key benefits of action research is its collaborative potential. With Esther as the researcher, Lesley supported the study by responding with her own perspectives. The process of structured conversation gave two lenses through which to mediate views on the film data. Due to her role as researcher, Esther had, at times, a tendency to lead the direction of dialogue. This was somewhat compensated for by the preparation Lesley did before each session. During the pilot study she arrived with significant written notes, indicating that she had given the research questions considerable thought beforehand. In the video discussion sessions she took notes

during the viewing periods, which she shared during each discussion episode. From the commencement of the pilot study differing outlooks were apparent, due to varied experience, role in the teaching process and knowledge of the children. Initially Lesley appeared to perceive herself as an interviewee, and through her careful preparation she indicated her willingness to express her own views. As the process progressed the discussions became more of an exchange.

The structure of the pilot discussions was a series of broad open questions designed to develop a dialogue between participants. The discussions which followed the filming involved watching small segments of the film and then discussing what they saw in terms of the research concepts. A list of these was kept on hand to provide focus, but was rarely referred to. This phase, arising from the video data, was more spontaneous and fluent.

Use of Discussion Transcripts

Both the video data and the transcripts of the discussion which followed the filming were means to an end. The video “enables investigators to take snapshots of social phenomena” (Pomerantz et al., 2003, p.405) in this case, learning in the art gallery. The film evidence allows the researcher to intellectually define what is recorded and what it reveals. The current research follows Pink’s (2007) suggestion that the raw video data can be the basis for systematic exploration, but may have no place in the final research. This is true for both the video data and the transcripts of discussions.

Analysis was through use of the transcripts. The researcher coded the discussion data from both the pilot study and the film, according to categories which related to the key areas of inquiry:

- The Value of Art in General
- Ways of interacting with art
- Environment/artwork/exhibition content
- Learning
- Learning Supporters

- Curriculum
- Teaching Strategies
- Ongoing Learning
- Self-reflection (in the film conversations)

MacDougall (2006) warns of the risk of fragmentation in analysis of transcript, and by this the failure to represent the overall recorded experience. Also that in discussion the breaking down into key themes could destroy the natural progression of the filmed lessons, and this could amplify in the process of analysing and coding the transcripts, with the flow and coherence of the discussions also challenged. However, in line with constructivism, the data in this research is provided as a source to mine and construct into meanings around the research question. The purpose of the discussions was to ‘think aloud’ around the research topic, and because of this the nature of the discussions was often broad, providing relevant data in a roundabout way. As with constructivist learning, the researcher’s job was to connect relevant concepts to create meaning.

In Summary

This action research is a case study facilitated by filming and structured discussions. Using a constructivist process enabled the researcher to apply the data to approach the essence of the research question: “How does learning in the art gallery help students become intelligent novices?”

The literature review, which is presented in the following chapter, provides a foundation for this.

Chapter Three: Literature Review

This chapter reviews relevant literature concerning learning in the art gallery. In the first section the following issues are considered:

- The art gallery as a setting for learning.
- How it can provide opportunities and what limits to its use exist for particular groups within society.
- The ways in which an individual might engage with the setting.

The second part looks at how learning occurs in the contemporary art gallery, introducing constructivism (in particular its social aspects) as a foundation theory. The section continues to discuss cognition in relation to the four key concepts of cognitive dissonance, cognitive flexibility, ill-structured cognitive domains and intelligent novices.

This literature review provides a foundation for the development of a theoretical framework which supports the case study aspect of the research.

The Art Gallery as a Setting for Learning: Key Concepts

Pluralism

Liotard (1984) defines the postmodern as “incredulity toward metanarratives” (Liotard, 1984, p.xxiv), which are “the stories that cultures tell themselves about their own practices and beliefs in order to legitimate them” (Peters, 2003, p.17). Postmodernists seek to replace these totalizing narratives with little narratives, which show the views of minority groups, thus shifting the universalizing, polarized tendencies of the modern, to the pluralising uncertainty of the postmodern (Efland, Freedman and Stuhr, 1996).

Consequently, as Jones (1997) explains, with such a vastly increased sense of perspective, the underlying mechanisms of social reality are revealed. Barrett (1997) suggests that the more perspectives which can be gained through a work of art, the richer and deeper will be the experience of that work. Tapia and Barrett (2003)

suggest using these postmodernist challenges to metanarratives as a basis for educational approaches in galleries. This will, in their view, lead to:

- community and school participation
- shared processes of decision-making
- the equal provision of respectful forums for all voices and perspectives
- collaborations between school, community and gallery

(Tapia and Barrett, 2003)

However, as Madden (1992) points out, art gallery visitors may need guidance in how to approach artworks, in order to understand a curator's rationale for selection. Rice (1998) cautions against what she calls "the challenge of the rampant relativism that results from maintaining that no meaning is privileged over another" (Rice, 1998, p.10). Since people are now more accepting of a broad range of interpretations of art, Rice describes how museum educators can take on the role of mediator, helping learners to explore the possibilities of the uncertainty arising from a pluralistic viewpoint. However, she makes the point that despite this growing awareness of pluralism, "still, most often, the navigation between the museum's construction and the visitors' ways of knowing, is done in the interests of getting visitors to adapt to the museum's version of reality, rather than the other way round" (Rice, 1998, p.10).

Ames (2004) has concerns about pluralism: "the power of the public criticism afforded by populist sentiments, and other forces will mean the loss of the benefits of scholarly study" (Ames, 2004, p.94). He asks whether the scholar is only to be "regarded as one more voice among many, whose views may even be regarded as even inferior to self-interpretations of underrepresented peoples" (Ames, 2004, p.94).

This is an ongoing debate in the museums. In 1971 Cameron asked whether museums needed to be "a forum, a place where battles are fought or a temple where the victors rest" (Cameron, 1971, p.21). Worts (1993) emphasises the necessity of museums engaging in partnerships with visitors, renegotiating power structures. He considers the temple-like museum to be unapproachable for many visitors, and suggests adding a personal dimension to interpretation, alongside the expert point of view.

Barriers to Art Gallery Visiting

The social benefits of museums are contingent on access. Bourdieu (1993) theorizes that almost all areas of cultural practice are systems of domination. His term habitus, a “socially constituted system of cognitive and motivating structures” (Bourdieu, 1972/1977, p. 76) is explained by Zolberg as “a sort of total cultural baggage, varying from stratum to stratum, which is socially valued or devalued by comparison to inhabitants of others” (Zolberg, 1994, p.56). Merriman (1991) states that the likelihood of museum visiting is predetermined by one’s habitus. To Bourdieu, museums exist as ideological institutions which are symbolic of wider societal social divisions.

Merriman (1991) describes museum curators and educators as trying to appeal to public of diverse backgrounds. However if one accepts the concept of habitus, this zealousness could be a struggle, with those excluded simply not wanting to come. Another issue of appealing to wide audiences is avoiding using museums as a vehicle for indoctrinating the masses with the museum’s point of view (whatever it is).

Bennett et al.’s (1999) research into Australian taste disagrees with Bourdieu’s thesis on the universality of class domination of cultural practice. Their findings show that although the most educated classes show more cultural competence, cultural disadvantages are demonstrated as limitations in cultural practice overall rather than just ‘high culture’. They suggest Bourdieu’s theory, which was devised in the 1960s, does not translate into an era of global culture. Their study found a plurality of scales in the cultural field, related particularly to age, gender and locality, rather than social class. The polarity of the dominant and the deprived is not valid in this case, and a complex, less clear-cut model is called for. Caution, however, must be exercised in comparison, since Bennett et al.’s study was on a significantly smaller scale than that of Bourdieu.

Museum Directors Foundation of Aotearoa New Zealand’s (1996) research reflects Bennett et al., suggesting that reasons for not visiting museums are complex, and not solely contingent on privilege. They found that although family socialization was a primary determinant of the patterns of museum usage, current educational and economic disadvantage was not a clear barrier.

It should be noted however that the above studies use adults as their research subjects, and consequently may demonstrate different outcomes than if children were used as a sample group. Their function in this study is to provide a foundation for discussing the involvement of families in the art gallery, which ties in with socio-cultural learning in the context of the current research.

Another influence on access to museums is visitor motivation. Pekarik et al. (1999) described four categories of satisfying museum experiences: object experiences, cognitive experiences, introspective experiences and social experiences. They found that of these, cognitive experiences were not prominent as satisfying experiences in any type of museum. This has significant implications for art gallery education.

Literacy

Stapp (1984) states that museum literacy involves “genuine and full visitor access to the museum by virtue of mastery of the language of museum objects and familiarity with the museum as an institution” (Stapp, 1984, p.112). She describes the museum-literate visitor as empowered to make use of the public memories these institutions hold. Museum literacy needs to be learnt and practiced. Stapp’s view is that mere physical access to museums or the provision of superficial information are ineffective for this.

Mayer (2005b) describes how in the 1970s art museum educators began to use the term ‘visual literacy’ to describe their teaching approach. Initially this referred to the development of formal looking skills; however this changed as art museum educators’ desire to involve the visitor in the process of interpretation led to the ongoing development of their conceptions of visual literacy, museum literacy and interactivity. She summed it up thus: “In the 1970s visitors were taught how to see, in the 80s visitors were taught how to make personal connections with the artworks, and in the 1990s visitors were empowered to construct their own museum meanings” (Mayer, 2005b, p.366).

There has been considerable debate on the term literacy and its implications. Peters (2003) and Mansfield (2003) ask whether using a language based model in art education implies a set of rules like a grammar that can simply be learned, in order to achieve competence in viewing and creating artworks. The danger is ‘phenomenal

absolutism,' a term used by Rice (1987) to describe the assumption that everyone else sees and thinks exactly the same way they do, the antithesis of the pluralistic viewpoint.

However, considering the term 'literacy' in a deconstructivist sense, the effect is the opposite. Students view artworks as complex networks of meaning. Efland, Freedman and Stuhr (1996) describe the importance of detecting 'double coding,' the multiple, sometimes contradictory meanings embedded in an artwork. Rice (1987) advocates teaching discernment, not just to know what is good about the art according to the artist value system, but also to reveal how decisions about these values are made by the art establishment. In this way viewers can make informed decisions for themselves.

Kristeva's (1986) theory of intertextuality shows how people develop an understanding of a new 'text' (e.g. an object or an exhibition) by relating it to others, learning how to 'read' and respond to a text based on other textual experiences. Each person's previous experiences of texts are different; so in each case a different reading of a current text will occur. The cognitive networks museum visitors construct, based upon imagery they encounter from a variety of sources, influence their understanding and response to visual culture in the museum setting.

Silverman (1995) reminds us that while meaning is created by a 'reader' in relation to a 'text', it is also influenced by their culture. She relates meaning making to memory, as a constant process of remembering and connecting, pointing out that memory and past experience shape what one perceives and experiences in the present. In addition she describes how, reciprocally, past culture influences present culture, and present culture influences how we read and remember past culture. Silverman's views give credence to museums where objects of the past can stimulate memories and help develop a deeper understanding of present culture.

Hooper-Greenhill (2000) cautions that understanding objects is different from reading texts, particularly since categories of meaning are less clear with them. Additionally, she suggests, this 'literacy' puts the focus primarily on scientific, logical aspects. She states that the meanings of objects are ambiguous, being not articulated in words, and only partially suggested through context.

The Viewer and the Artwork

Three related approaches to engaging with art are: material culture studies, visual culture studies, and aesthetics. Material culture studies is the “study through artefacts of the beliefs of a particular community or society at a given time” (Prown, 2001, p.70). He explains that through this approach we initially engage with other cultures in a sensory way rather than with our minds, where our cultural biases reside. Artworks are a particular group within material culture because their “aesthetic and occasional ethical or spiritual dimensions make them direct and often overt or intentional expressions of cultural belief” (Prown, 2001, p.71).

Considering the materiality of objects, Hooper-Greenhill (2000) states that just as an interpretive framework is necessary to enhance comprehension of an object’s significance, equally the material character of the object sets its own limits to possible interpretations. She compares the fields of material culture studies and visual culture studies. Material culture studies focuses largely on three-dimensional objects, and visual culture studies more on two-dimensional objects. She considers the field of material culture studies to be limited by a lack of analysis of how displayed objects are interpreted and understood by visitors. She explains that visual culture is far less concerned with the material character of the object, focussing on the relationship between the object and the viewer. It looks directly at the processes of interpretation, and how objects become meaningful.

Hooper-Greenhill (2000) advocates focusing on the sensory aspects for a number of reasons including:

- The tangibility of artefacts makes abstract ideas concrete.
- Objects are physical manifestations of cultural memory.
- “The exchange between object and the viewer is more than a cognitive one . . . The material properties and the physical presence of the artefact demand embodied responses, which may be intuitive and immediate”(Hooper-Greenhill, 2000, p.112).
- “Responses to objects are culturally shaped, according to previous knowledge and experience, but the initial reaction to an object may be

tacit and sensory, rather than on an articulate verbal level” (Hooper-Greenhill, 2000, p.112).

Kamhi (2004) criticises what she describes as “current efforts to transform art education into visual culture studies” (Kamhi, 2004, p.25), which in her view disregards critical differences between artworks and other cultural artefacts. “Works of art convey meaning largely through the depictive and expressive qualities of their imagery. Rather than seeking meaning in such features, however visual culture studies emphasises decoding or deconstructing images in terms of information and associations that are symbolic or verbal, not pictorial,” (Kamhi, 2004, p.25), emphasizing abstract social and political issues at the expense of more concrete personal experience.

Hagman (2005) describes aesthetics as involving the conception of an ideal; and being fundamentally subjective, despite being grounded in the objective qualities of the object. An aesthetic experience may include an emotive response in an individual, leaving them feeling vitalized and closely engaged with the world. Efland (2002) states: “it is the aesthetic aspect that gives works of art the properties enabling them to become cognitive landmarks” (Efland, 2002, p.168). Lankford (2002) posits that aesthetic experience is crucial to the meanings that can be constructed through encounters with works of art.

Prown (2001), considering the relationship between an artwork’s aesthetic value and its cultural significance, explains how the analytical approach used by ‘material culture studies’ breaks down the complexity of the work of art into simple categories, and in the process destroys the aesthetic experience irretrievably. “Regardless of the ability of interpretation, the state of mind of the listener or reader is altered, innocence lost, what has been said cannot become unsaid, the aesthetic experience is irredeemably changed” (Prown, 2001, p.88).

Contrarily, Kesner (2006) suggests engagement in museums can be trained. He describes how optimal outcomes for museum visitors are dependent on their ‘cultural competence’. In his view, in art galleries, cultural competence should focus on the perceptual and cognitive since perception is critical in fulfilling interactions with artworks. He proposes that the outcome of any visit is contingent on ‘perceptual-

cognitive competence' enabling the visitor to transfer viewing an art object into a meaningful experience. Kesner suggests that museums examine how to engage these complex issues of perception, vision and subjective experience.

Learning in the Contemporary Art Gallery

This section introduces constructivism, the underlying approach to this research, looking at its social elements in particular, discussing cognitive apprenticeship and communities of practice, before focusing on relevant aspects of cognition: cognitive dissonance, cognitive flexibility, ill-structured domains of learning, and the intelligent novice.

Constructivism

Hung (2001) identified the essence of constructivism as a personal discovery of knowledge. In this model learners discover relationships between concepts, whilst the teachers provide the context for active, self-regulated learning. It has been defined as learning which “takes place in contexts, and that learners form or construct much of what they learn and understand as a function of their experiences in situations” (Schunk, 2008, p.519). He explains that there is a range of constructivist approaches, from those that suggest complete self-construction of knowledge, to those that suggest socially mediated constructions. Because of the relevance of context, the individual and social aspects of constructivism are not always clearly divided. In constructivism the learner’s construction of his/her ideas are personally meaningful to him/her, and individual, but arise from situated learning in a both social and physical context.

Social Aspects of Constructivism

The theorist Vygotsky (1978) posited that knowledge is maintained in the external, social world. Hung (2001) describes how in this model students work on authentic projects, while teachers provide facilitation and scaffold their learning. Students construct knowledge by working to solve realistic problems, usually in collaboration with others. Cullen (2001) called it a co-constructive model, in which both teacher and learner are seen as active participants in the learning process. Knowledge, from the socio-constructivist viewpoint, has been described by Jarvela and Niemevirta

(1999) as being in part the product of activity and therefore located in context and culture. These are key concerns of learning in the gallery, thus the concerns of socio-constructivism are of particular interest to art gallery education.

Cognitive Apprenticeship

The concept of cognitive apprenticeship arose from Vygotsky's emphasis of the need for teacher and peer assistance in learning. His Zone of Proximal Development is defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving and adult guidance or in collaboration with more capable peers." (Vygotsky, 1978, p.86). Cognitive apprenticeship enables the coaching of students within the Zone of Proximal Development to enable optimal learning, enabling experts in a field to communicate its complexity to novice learners by applying traditional apprenticeship techniques to formal learning. Mayer (2003) describes its three main features:

- *Modelling*: A teacher describes his/her cognitive processes while performing a task.
- *Coaching*: A teacher offers suggestions or criticisms to a student who is carrying out a task.
- *Scaffolding*: A teacher supports a student on parts of a task which they are as yet unable to accomplish.

Communities of Practice

Related to this is the concept of 'communities of practice', which involves social, situated learning. A community of practice is "a community of practitioners within which situational learning develops, resulting in the community's development of ... a set of relations among people, activity and the world" (Lave and Wenger, 1991, p.98). "Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger, 2006, para.4). He goes on to explain that they are dynamic and involve learning on the part of all members. Wenger (1998) also suggests that the community

of practice occurs over time, as its members collectively develop and practice the specific characteristics, relating to its social, situational and domain-specific identity.

Paris (2006) has considered the museum environment in terms of communities of practice. He describes ‘visitor novices’ as learning about the particular aspects specific to creating meaning in the gallery through the expertise of others, the subtle practices of visiting museums being imparted through specific community members such as parents and other supporters. He suggests that establishing an identity as a member of the community of practice, and being an expert in this group, instils a sense of personal pride.

Constructivism in the Art Museum

Hooper-Greenhill (1991) suggests a constructivist model of learning in the museum, where the learner creates meaning (Fig.1). Her model shows it as constructed and communicated back and forth between what she describes as: the team of communicators, the meanings and media, and the active meaning makers.

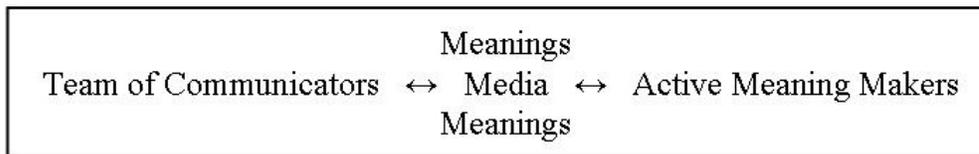


Figure One: Hooper-Greenhill’s new communication model for museums (Hooper- Greenhill, 1991).

Hein (1998) indicates the complexity of constructivism by describing it as consisting of “a family of ideas clustered around a few principles existing on a continuum, with no actual exemplar to illustrate all its components” (Hein, 1998, p.155). He suggests three basic considerations are required in order for a museum to hold a constructivist viewpoint:

- What is done to acknowledge that knowledge is constructed in the mind of the learner?
- How is learning itself made active? What is done to engage the viewer?

- How well is the situation designed, physically, socially and intellectually, to make it accessible to the visitor?

(Hein, 1998)

Cognitive Dissonance

The concept of cognitive dissonance relates to constructivism. Hooper-Greenhill (2000) explains that things have meaning because of the framework in which they are placed. Understanding happens when new information or experience can be fitted into a pattern, when patterned relationships between elements can be seen. These patterns are constructed by individual learners in order to make meaning. “Man desires above all a predictable and ordered world” (Peckham, 1965, p.313).

New information or experiences can conflict with our prior knowledge. Our existing knowledge structures cannot incorporate the new insights or information, and must be moderately or even radically transformed (Murphy & Alexander, 2006). “Altering knowledge can be a challenging task particularly if ideas are long held and deeply rooted” (Murphy & Alexander, 2006, pp.53). Some reasons for resistance to changing one’s viewpoint can be: prior knowledge, if the new knowledge is not presented in a compelling way, or if the new knowledge is processed by the learner in a superficial way.

Rice (1998) defines cognitive dissonance as occurring when an object or piece of information is encountered which does not fit into one’s pre-existing cognitive structure (pattern). This makes most people want to reject the new idea in order to preserve their current structure, and thus lessen cognitive tension. Peckham (1965) concluded that the role of art was rehearsal in a safe setting; thus training people to endure cognitive dissonance, which is essential in order to perceive problems and make meaningful innovations. Rice explains, “When a viewer is confronted with an art object that does not immediately fit into his or her definition of art, the experience becomes meaningful if the viewer resists the temptation to regard the work as ‘not art’” (Rice, 1998, p. 224). In line with constructivist educational theory, she suggests museum educators act as mediators, helping learners with the uncertainty of not knowing while they explore possibilities and interpretations.

Hooper-Greenhill's idea of cognitive patterns can be considered in relation to the role of curators and exhibition designers, whose job it is to create some sort of pattern or organising principle within an exhibit. The issue in museums is how well the visitor's existing patterns relate to those created in exhibitions by the museum professionals; and additionally how the institution (in particular, the art museum educator) assists with the visitor's experience of cognitive dissonance which may occur due to conflicts in patterning.

Hooper-Greenhill (2000) describes the difference between the way experts and novices categorise. Experts use the deep laws of the subject matter, while novice learners categorise by surface features. In museums the museum professionals are generally considered experts, thus use the deep laws of their discipline-based knowledge. However many visitors are novices, who view and understand exhibits in terms of immediate surface features. Here is a divide to be bridged. Curators must try to understand how visitors might comprehend material presented, and visitors need to be guided into exploring the deeper reasons for the exhibit, to develop an appreciation of the curator's ideas (which can eventually be incorporated into the visitor's own schema).

Efland (2002) in his research on art and cognition has highlighted the related ideas of cognitive flexibility and ill-structured cognitive domains. These will be discussed in the following sections:

Cognitive Flexibility

Cognitive flexibility is related to the concept of cognitive dissonance. Efland (2002) writes about its benefits and relevance to learning in the arts. He states that cognitively flexible students understand that learning involves the formation of multiple perspectives. Koroscik (1996) considers it to be one of the most important aspects of thinking to develop, and that this importance will increase due to the cognitive stresses associated with the constant rate of expansion of new knowledge in the world today. Flexibility is assisted by an awareness of the complex natures of particular domains of knowledge, like art for example. Spiro et al. (1987) explains that "knowledge transfer in complex and ill-structured domains essentially is dependent upon cognitive flexibility ... greater flexibility ... will result from the

approach that promotes highly interconnected rather than neatly compartmentalised ... mental representations” (Spiro et al., 1987, p.1).

Ill-structured Cognitive Domains

Efland (2002) divides learning domains into those that are ‘well-structured’ and those that are ‘ill-structured’. Ill-structured learning situations are those which require judgments to be made without rules or generalizations that apply to numerous cases. He suggests that being able to make effective judgments, given the unstructured character of life itself, is a significant intellectual advantage. Efland describes a knowledge domain as being ill-structured when “the combination of its breadth, complexity and irregularity of its content to make the prescription of its full range of uses impossible” (Efland, 2002, p.86). Art is a complexly structured domain. He warns against simplifying art to make it appear to be ‘well-structured’ since this reduces the flexibility of the knowledge being acquired, limiting its potential for transfer to new situations. Presenting an artwork as well-structured suggests there is a “correct” interpretation, consequently blocking alternative interpretations. This is at odds with the philosophy of constructivism. Spiro et al. (1987) describes how “Monolithic pre-packaged knowledge structures constrain an individual to apply knowledge in a fixed and limited manner” (Spiro et al., 1987, p.3).

Additionally, since works of art reflect the social world, they can connect domains of knowledge that might otherwise be separate, enabling the integration of knowledge across the curriculum. Efland (2002) describes activating the cognitive potential of the learner. He puts forward that the integration of knowledge from a variety of domains is essential, as it enables a more complex understanding, than knowledge presented in separate domains. Transfer of knowledge from one domain to another is an essential component of integrated learning. Art can aid this transfer, since understanding artworks requires social and cultural context.

Intelligent Novices

Encouraging the intelligent novice could be seen to be a major facet of the role of the art museum educator. Being an ‘ill-structured’ cognitive domain, art often puts the learner in the role of the novice, as there are no over-arching, established rules to fully comprehend any particular work of art. As Efland (2002) points out there is

danger in making art appear simpler than it actually is. Because of this, adopting the role of the novice, but working out strategies to approach an artwork intelligently, makes sense. In this way it is possible to unlock some of the complexities of meaning in an artwork, despite having little domain knowledge.

Pelletier and Shore (2003) describe the term novice as suggesting a learner in the early stages of a domain area. They explain that novices can demonstrate a wide variety of abilities and be from a variety of backgrounds, but be similar in that they have little experience in a particular domain area. This does not suggest they have no experience in the domain area or that they cannot transfer relevant knowledge and strategies from other domains. In this research it is appropriate to refine the term further, and to regard a novice as one approaching any particular new learning in the field of art. Since ill-structured domains do not have overriding rules or generalizations, each new learning situation can place the learner in the role of the novice.

Bruer (1993) describes intelligent novices as “people who learn new fields and solve novel problems more expertly than most, regardless of how much domain-specific knowledge they possess. Among other things, intelligent novices seem to control and monitor their thought processes (Bruer, 1993, p.15).” This suggests that metacognition is a particularly important ability in approaching novel problems.

Murphy and Alexander (2006) define ‘intelligent novices’ as: learners who possess and are “capable of employing many general strategies skilfully, even when they confront novel tasks” (Murphy and Alexander, 2006, p.81). They possess the knowledge, motivation, and strategic processing ability needed to self-regulate.

For the purposes of this research, an intelligent novice can be defined as a learner who can access relevant prior knowledge and strategies, applying them in novel situations; who can learn from their mistakes; who can make use of appropriate learning resources in a particular setting (including people); and who is not intimidated by unfamiliar settings.

Summary of Chapter

The literature review initially discussed issues relating to power and knowledge within the art gallery, inquiring into the causes of barriers to visiting. This informed the following section on approaches to gallery learning. Constructivism was introduced as the underlying approach to this research. The specific concepts of: cognitive dissonance, ill-structured cognitive domains, cognitive flexibility and intelligent novices were introduced as a means to consider how an individual might become empowered within the setting. These concepts frame the narrative presented in the next chapter and will contribute to development of the model outlined in Chapter Six.

The next chapter considers data from the case study, showing novice learners in an ill-structured learning environment, namely The Suter Art Gallery. It records influences which seemed to effect the development of intelligent novices.

Chapter Four: An Exploration through Dialogue

Action research enables the researcher to stand back and view his/her own practice as a participant observer. This chapter records aspects of the discussions between the researcher, Esther, and her colleague, Lesley, around the subject of intelligent novices' learning in the art museum setting. These discussions took place in two stages:

The first stage was the pilot which enabled the two participants, through three structured discussions, to unravel their perspectives on:

- The purpose and benefit of gallery education.
- How young students learn through gallery visits.
- The gallery educator's role in this.

Early on Esther introduced the concept of the intelligent novice, and this became a focus. The video discussion stage of this research consisted of five conversations, conducted as the two colleagues viewed films of two Suter education sessions.

The process was one of refinement, starting generally with the pilot, before focusing on particular details of visits during the video discussions. In line with action research, Esther and Lesley took on the role of intelligent novices, observing their own practice in order to discuss, and ultimately develop, their effectiveness as educators. There was a good natured rapport between the familiar colleagues, with similar objectives, but different perspectives due to their respective roles and experiences. Both expressed pleasure in the opportunity to focus on their practice in a way not usually possible. The discussion material was distilled to extract the essence of the following research questions:

1. How do intelligent novices in the art gallery make effective connections between prior learning and novel situations?
2. How do repeat gallery visits enable students to practise strategies to develop as intelligent novices?

3. In what way does the observed community of practice support intelligent novices?
4. In what ways does the observed community of practice demonstrate characteristics of the intelligent novice?

These four questions are pivots around which the data is reported in this chapter.

The interconnected aspects which influence Suter Education sessions are: the material characteristics of the gallery, the prior knowledge of the learner, and the other people who are part of the learning experience (the community of practice). The data is presented here to highlight these three categories and their inter-relationships.

Question One: How do Intelligent Novices in the Art Gallery Make Effective Connections between Prior Learning and Novel Situations?

The two main factors in this are the setting and the learner. Firstly the material nature of the visit is discussed, noting the initial impact of an exhibition on the learner, before considering the influence of the physical nature of the artwork on display, and finally giving an example of a novice's engagement with the material properties of an exhibition. The second part of the question considers the learner himself/herself, taking into account: his/her developmental level; the personal relevance of the material aspects; his/her adaptability and the criteria for intelligent novices.

The Material Nature of the Visit

First Contact



Figure Two: Students learning in *White Gold*. Credit: Lesley Kotua

Students' first contact with an exhibition can provide a moment of revelation. *White Gold: The Business of Milk* by Sally Burton, was an installation based around the history of a Nelson dairy farm over 150 years. It discussed a wide variety of issues relating to the dairying industry, past and present. The central element of the exhibition was a suspended, life-size herd of painted cows. Upon entering *White Gold* visit Lesley's class and accompanying adults showed a high degree of excitement and engagement. The novelty and unexpected nature of this installation work captivated visitors, particularly on arrival.

ESTHER: ... I told them that the very first time that they saw an exhibition was ... extra special, because they hadn't seen anything like it before, and so that they need to be really aware visually, and looking and thinking and not talking as they go through, or not talking too much. But as we saw, they were talking, and lots of really good talk.

LESLEY: It absolutely was. The first children coming in were following your instructions and they were looking, and they were engaging with their eyes. But then, as the rest of the children came in, the excited voices, you can hear them and they were pointing and they were discussing. They were really excited about it. I noticed that in particular.

As students and accompanying adults first explored *White Gold* enthusiasm was high:

ESTHER: ... for the parents and for the kids, it's like a discovery ... of the exhibition, because there's lots of facets ... and the parents are just as motivated as the kids in this particular exhibition. So, it's really exciting for them to go round together, and they're really buzzing, and when the parents find out something they know of ... they want to put it in too, and so that's a really ... sparky ... part of the lesson.

LESLEY: It is.

ESTHER: It doesn't go on for very long, but ... you can just see that everybody's talking together and ... interested and the kids ... and the parents are noticing things. The parents are acting just like kids because ... they're really, really into it.

LESLEY: You captured their interest big time.

The Nature of the Artworks

Prown (2001) states that understanding an artefact is developed through connecting with its physical aspects. The nature of the artwork on display seemed to have a strong influence on Lesley's students' engagement. During *White Gold*, where they moved amongst a herd of suspended life-size Friesian cows, the class's focus seemed to be due to the material qualities of the artwork. Lesley described this class as very restless generally, but considered that moving around and interacting with the artwork physically, enabled students to learn more effectively:

LESLEY: I like the way the kids are listening well. You've got their full attention ... They were captured by the exhibition ...

ESTHER: ... that's the thing. It's an installation and I ... think if kids can move around artwork ... they can connect to it more than artwork on the wall ... this one, you could move in and out of them and ... it was quite a lot of physical relationship to the artwork, and that is really good for young kids, isn't it?

LESLEY: I think they were blown away by the fact that they were life-size ... and that amazed them.

Students of this age often have little prior content knowledge relating to exhibitions they visit, and additionally have not yet developed strategies of inquiry. For this reason, engagement with the physical aspects, as we have seen, can support learning, providing immediate sensory data to build on.

Novices Interacting Intelligently with the Exhibition Environment

Hooper-Greenhill (2000) describes how experts, such as museum professionals, use the deep laws of their discipline-based knowledge, whilst novice learners categorise by surface features. Many gallery visitors view and understand exhibitions in terms of immediate surface features. Murphy and Alexander (2006) define 'intelligent novices' as learners who possess and are "capable of employing many general strategies skilfully, even when they confront novel tasks" (Murphy and Alexander, 2006, p.81). Intelligent novices would not use deep laws of a subject, but their own developed general strategies to make the best use of the learning potential of the exhibition.

The following example shows a learner using her own general strategies to relate to the artwork in the best possible way according to her strengths. This child with special needs focused on the sensory aspects of the exhibition, despite the class being otherwise occupied. Purposefully or not, she was demonstrating the ability to relate to the exhibition through her particular capabilities. Not being threatened or challenged by the environment, she was simply relating to it from her perspective.

LESLEY: Chelsea, the little girl who wandered a couple of times over to look at the cows, she has special learning needs. She's got a very low IQ, but quite good social skills, so people don't really pick it. The ... story that went with

each cow would have been of little value or interest to her, because she wouldn't understand it, but she was obviously keen to look closely at the installation itself.

ESTHER: ... She kept walking up to Apple.

LESLEY: Yes, she did, and she was probably hoping that everyone would follow ... she wasn't being naughty by wandering away from the group; she just wouldn't have understood it.

ESTHER: So, she was focusing on the sensory aspects of the exhibition, rather than the ... more cognitive ones ... where the ideas were being talked about; because you could see she had a real interest in the actual designs and the contrasts and that sort of thing.

LESLEY: ... you've got her in a nutshell, because in class she has no number value ... She cannot read ... (or) write, but she can print beautifully, and she does lovely craft work ... she just cannot do anything academic. So the whole art part of it ... interested her immensely.

ESTHER: Yes. Well, she was looking very closely at the surface ... observing it very closely and carefully, and ... that's part of the pleasure of art ... this exhibition's full of ideas but ... when you come to an art gallery often all you get is the actual sensory input to enjoy, because you don't know the whole story ...

LESLEY: Well, this might be the making of her, this sort of thing ... going to exhibitions and seeing what is possible ...

The Individual as a Learner

Developmental Level

Six and seven-year-old children have limited life experience and thus may not fully comprehend the implications of what they see in the gallery. During the *White Gold* visit students had an interest which was not marred by abhorrence at the abject content (such as cows being sent to the fertilizer works). Older students might be

more able to see consequences, triggering negative emotions which could block learning:

ESTHER: But that's just so delightful where ... the little kid says, "Even the nose", and you can see they're really, really, really interested.

LESLEY: And the eyeballs.

LESLEY: "Even the eyeballs." I'm glad you ... cut it off then. It might have gone too far.

ESTHER: But it was just interest and animation when it suddenly clicked and they suddenly realised, the whole body of the cow is going to be crushed up ... it doesn't bother them ... none of the kids in any of the classes have been bothered by blood and bone, except intermediates. I've got this group of gifted intermediate kids that came ... and you could see they were just about crying when I told them about it, and ... I'm not ... being brutal, I'm just ... explaining ...

LESLEY: Well, that's what really happens.

ESTHER: But ... all the primary-aged kids, have been just fine about blood and bone, and it's really good for them to have a holistic view of everything that happens and everything that's used on the farm ...

This demonstrates how aspects of cognitive dissonance may not be particularly relevant for Lesley's class level. While disgust might be a block to learning for older students, the narrow breadth of experience of these students actually seemed to support their ability to accommodate new learning. This suggests their undeveloped cognitive schema leaves room for the acceptance of more varied data, since there are fewer clashes with existing cognitive structures.

As discussed younger children may have little factual knowledge, and learn largely through the senses and with community support. These gaps can be partially counteracted if students learn the strategic intelligent novice behaviour of using their existing knowledge and attitudes. One of the constructive attributes observed was their readiness to learn, their receptiveness:

LESLEY: And you can see it in the children; you can see it in their stance. They're running with it with complete and utter belief in what you are saying.

ESTHER: ... The thing about six and seven-year-olds is they are ready to learn ... They're very enthusiastic about it, aren't they?

Personal Relevance

Kamhi (2004) warns against emphasising abstract social and political issues at the expense of more concrete personal experience. Although art may have a global theme, students will understand it in their own way within their own sphere of experience. Students were much more motivated sharing personal content than information gathered from the exhibition. For this reason Esther's classes for *White Gold* incorporated the students' development of a logo representing their individual qualities. This tied into the exhibition's themes of corporate branding, but addressed it on a personally relevant level for the students.

LESLEY: I noticed that every child is happy to share and to present what they had. They were excited with what they were doing.

ESTHER: That was different from talking about the cow, because it was personal to them ... they had two opportunities to present in that session ... presenting facts from the wall about the cow, and also presenting their own cow and their own ideas about it. It was much easier for them, wasn't it?

The students showed a sense of immediacy and enthusiasm in expressing their own ideas about themselves:

LESLEY: The shape that they had to draw on their cow, they wanted to share immediately their ideas of what picture to draw on their cow, which was good. And they all had ideas. You can hear the voices go, "I ...", "I ...", "I ..."; you can hear that coming out all the time. They really wanted to share ...

Intelligent Novices

Lesley was taken aback that her class seemed to accept information put forward without questioning. She stressed the importance of teaching the process of inquiry:

LESLEY: I'm really surprised ... that nobody said, "Well, where are the rest of the bulls? What happens to them?" Nobody thought or considered that it could be about an equal number of either gender born.

ESTHER: No. They've got no idea ... I wonder whether it shows that the kids don't necessarily think beyond the square ...

LESLEY: Well, these ones certainly didn't.

ESTHER: Yes ... younger kids ... accept it. ... you could tell them anything ...

LESLEY: ... to be inquiry learners, they have to learn first the sort of questions they need to ask, and before that they need to start thinking outside the square in order to ask those questions.

The intelligent novice appropriately uses the strategies they have, independently. In the terms of constructivism this could be described as self-scaffolding. As Hill (1997) explains, the brain works like a network. Esther described the building of concepts, the scaffolding, between and within Suter visits:

ESTHER: ... the intelligent novice ... get(s) something like a little bit of knowledge ... and then they use that knowledge to get more ... They get a little bit like what they got the other visit, the colours and shapes, that they can match colours, and then they can use that matching for pastel actively from colours and shapes, images of a lifetime, and then take it into this, and then continue on to ... just build it up, really.

Initially the students identified as exhibiting intelligent novice behaviours were globally capable students. They showed independence in their ongoing use and development of concepts learnt.

LESLEY: An exhibition earlier this year about holiday hotspots was excellent in teaching foreground/background perspective. The child ... was drawn separately and then cut out and pasted on to the artwork as a foreground, so the perspective was like that ... And then we came back to school and a couple of months later ... what you taught them about foreground and

background ... in a completely different art lesson, in fact this was a poster ... they had those exact skills ... If you're going to call them "intelligent novices", absolutely, because they hold that information in their head.

ESTHER: So, that's an important part of the intelligent novice, having the information and then knowing when to bring it out at the relevant moments, even when the teacher doesn't tell them.

LESLEY: ... I didn't tell them anything. This is their own poster. (*see Figure Three*)



Figure Three: Student's independent use of foreground and background sometime after a Suter visit introducing this concept. Credit: Esther McNaughton

ESTHER: So, they can take something that's been given to them in a different context, and bring it out. That's what we'd hope. That's what we're trying to teach ...

LESLEY: And like Annie, using exactly the same (skill) as you taught her to do with (the portrait of) Huria Matenga ... She did that exceptionally quickly, just by using the skill that you'd shown them ...

ESTHER: Some kids just seem to have an instinctive way of being able to use things ... she's got the little technique and instinctively just does it again ...

LESLEY: And it's so quick ... I've never seen her do it with anything else ... So, it's all these little skills ... that you are teaching them ... I'm seeing coming out in some children.

In Lesley's view this demonstrated effective learning; the students showing independent use of strategies.

LESLEY: (What tells us significant learning is taking place?) Experiment in their own works when they're back at school.

Adaptability

My Place in Art was an education programme run by Esther which aligned with an exhibition featuring familiar local holiday spots. In the practical component of the lesson students created a jandal shaped composition using pastel showing a setting they related to, with themselves in the front. They later plaited the thongs.

Efland's concept of cognitive flexibility demands the learner being adaptable rather than meticulously following a technique. During the conversations Lesley used the example of Carly who, despite being a very capable learner, had difficulty in the art gallery environment. Learning a technique in *My Place in Art* that was at variance to her existing cognitive schema frustrated her.

LESLEY: Carly, who wanted to look like the artist.

ESTHER: Yes. So, you think she was disappointed because she wasn't looking like the art?

LESLEY: I think, probably she was, because that's the sort of intelligence she has. But, however, her end result was good, and being able to do the plait, which was really only a technical thing ... She was the only one who could do the plait ... She had a perfect two plaits on her jandal once we got back to school.

This links to Efland's (2002) concept of ill-structured cognitive domains where judgments must be made without overarching rules or generalizations. To a certain extent art is like this, there is no completely 'correct' interpretation of an artwork. As Efland explains, cognitive flexibility is necessary to activate the cognitive potential of the learner, to achieve a more complex understanding than knowledge presented in separate domains. This is an essential characteristic of intelligent novices. Carly seemed to experience cognitive dissonance because she couldn't use her knowledge flexibly.

LESLEY: What happened with the *My Place in Art* work was very interesting because people like Carly, who likes everything to be perfect technically ... she really struggled ... and she was nearly in tears because she couldn't get it right, and it needed to be right for her ... She was anxious over it.

ESTHER: Would she normally ... if she did a house, would she want to do the house her own way? It was just more complex, wasn't it?

LESLEY: I think it was more complex than what she, I think she thought she could probably do it ... but she is just so meticulous about it. Even in class, she is never finished. She's a very clever, talented girl, but she's never finished. And her art is the same. You look at it and think, "Oh, this is good", but it is technically good.

ESTHER: Yes. But there's only part of it there.



Figure Four: Student creating artwork in *My Place in Art*. Credit: Lesley Kotua

Broadening Definitions of the Intelligent Novice

Carly had difficulty approaching an activity with cognitive flexibility whereas Dana had the more basic problem of not comprehending the task in hand:

LESLEY: I don't know whether you'd cottoned on, but there's one or two children whose hands go up straight away that you don't need to ask. It's best to not see them, because they're just going to say anything. There's Dana, don't ever ask.

ESTHER: She's funny. She really wants to be helpful, I know, but she just doesn't ...

LESLEY: She's come from a Christchurch school and apparently she was a truant, and she's got massive gaps ... So, her hand goes up automatically, and there's nothing there.

ESTHER: Oh, dear. Well, she's trying to please.

Over the course of the study Lesley demonstrated a change in her outlook. Initially, globally capable students were identified as displaying the qualities of the intelligent novice. Over time she began to notice changes in the average or even 'special needs' students who began to exhibit intelligent novice behaviour. Dana is an interesting case. The above quote comes from the pilot study, but in later discussions Esther and Lesley noticed significant improvement in her ability to learn in the gallery environment. This progress is discussed further in Question Two.

Individuality

Visiting students both observe the work of 'professional' artists on display, and also take on the role of practising artists themselves as they create artwork in response to the gallery experience. Esther aims to support the development of a sense of agency in the gallery for visitors in her classes. One strategy for developing this is by ensuring the students understand that there are many different approaches to visual art, and that there is a place for a spectrum of artists (not just those with developed fine motor skills). Through this students may come to appreciate and use their own artistic skills appropriately and confidently.

LESLEY: ... she's very perceptive and very creative, but unfortunately her final products are quite disappointing, because ... she has wonderfully creative ideas ... But she's never showing dissatisfaction with her final product.

ESTHER: Oh, she doesn't mind that it's messy?

LESLEY: She doesn't seem to ... She says, "That's what I wanted." But she's actually not able to do it any better, which is a shame. But then maybe that's the sort of artist she's going to be one day.

ESTHER: Yes, yes. Well, that's what I actually say to the kids ... When you're looking round in the gallery ... amongst an exhibition like this, you can see some really expressionistic loose sort of work, and some people are just ... more tactile ... You express yourself in art in all sorts of different ways ... I think it's good if those kids don't feel like they have to have it ... graphically accurate.

LESLEY: ... it's her idea, but it doesn't come out looking like ... I know that she really wants it to, but she has a really good eye for colour and detail and possibilities of what might happen next. So, you often see a little extra something in there that the other kids haven't got in theirs.

In summary, two influences relating to how intelligent novices perform in the art gallery were introduced: the material nature of the visit and the individual themselves as a learner. The physical environment includes the gallery setting and the artwork itself. Different types of artwork might invoke different reactions in students. The initial impact of a visit can make a significant impression. In the research the children seemed to relate very directly to installations, perhaps because of their physical three-dimensional nature.

The individual's approach to learning in the art gallery is influenced by their developmental level. The research group were six and seven-year-olds, and as such had little contextual information to aid their learning. Because of this, other personal qualities gained in importance, such as their enthusiasm and openness, which was enhanced when the learning was directly relevant to them, for instance in talking about themselves. Intelligent novices were initially seen as globally capable students, but as the discussions progressed these behaviours were noticed in average or below average students. It was also observed that some capable students could not use their knowledge flexibly, thus diminishing their ability to learn in the gallery. One important aspect of the intelligent novice is the self-identification of and confidence in one's strengths. Secondly, intelligent novices need to be adaptable in the use of these strengths.

These abilities can be developed over time. The next question discusses how repeat visits to can enhance the development of the intelligent novice in the art gallery.

Question Two: How do Repeat Visits Enable Students to Develop as Intelligent Novices?

In Kesner's (2006) view the optimal outcome of any museum visit is contingent on 'perceptual-cognitive competence' which enables the visitor to gain some form of meaningful experience from looking at an art object. Earlier Stapp (1984) described museum literacy as "genuine and full visitor access to the museum by virtue of mastery of the language of museum objects and familiarity with the museum as an institution" (Stapp, 1984, p.112), suggesting that through this the visitor will be empowered. Both theorists imply that effective approaches to museum visiting need to be learnt and practised. In fact Stapp's (1984) view is that mere physical access or the provision of superficial information is ineffective in training the visitor in museum literacy.

Regular Visitors

The above description of training museum visitors emphasizes practice. During discussions it was observed that classes who visited regularly were at a great advantage in their ability to learn in the gallery environment. Regular visitors were seen to settle and focus easily, while first timers were distracted by the environment and often tended to be excitable.

ESTHER: I really noticed the difference between a class like this ... regular visitors and ... classes that come from further away and it's the only time they've come. They can't settle and focus on an activity, and they can't ask intelligent questions in the same way, because they are just awed by the environment, unused to looking at artworks. They don't really know where to start, and they sometimes get a bit giggly ... But your kids, because they come regularly, they build on things and they know what it's all about ... I had some of the older kids from Nelson Central School ... and they could remember concepts from the tivaevae exhibition, two years ago.

Over time an understanding of appropriate behaviour in the setting was built up, thus diminishing the necessity for overtly clear instructions. Non-regular visitors needed much more guidance in this respect:

ESTHER: ...I was much more firm and direct and particular than I normally need to be. But it seemed to ... pay off really. But I felt like I was being really ... strict saying, “You stand up” and “You go and sit just there” and all this, just to get them just right ...

LESLEY: Last year’s class seemed to know automatically. They just did, they just went. But this year’s class need a lot of direction. I’m hoping by the end of the year it’s different.

ESTHER: Well, yes. We did talk about the change over the year, and like I said, this visit seems to run much more smoothly than the visit earlier. But I did have to start off being really clear ...

LESLEY: I think the parents needed that too, because there were grandparents there. There (were) ... non-regulars.

Repeat visits seemed to facilitate a readiness to learn in students.

Concept Development

Additionally, with repeat visitors, a grounding in domain-specific knowledge could be established as a foundation to be built on in an ongoing way.

ESTHER: ... I noticed with this class is that they didn’t know the answers to the question which I say to so many classes ... generally kids with a few visits ... most of the class will just be able to say ... straight away that they knew.

Because of the frequency of visits Lesley’s class could build on and develop previous exhibition learning:

ESTHER: I introduced the exhibition and ... the use of swatches ... they’d done a similar matching activity earlier on in the year.

LESLEY: Yes, with a crayon. You gave them a crayon ...



Figure Five: Using a swatch to match colours – a development of a pastel matching activity learnt earlier in the year. Credit: Lesley Kotua

As discussed Kristeva’s (1986) theory of intertextuality shows how people read new “texts” (e.g. an object or an exhibition) by relating them to others: learning how to “read” and respond to a text based on prior textual experiences, in other words using repetition and comparison. Teachers can aid this development through practice. Students visit the gallery and practice interacting with new, possibly abstract ideas. Approaching the novel, as intelligent novices, we need to be able to find a pattern that matches our prior learning in some way.

At The Suter over a number of visits students are able to approach art from a broad range of perspectives. Repeat visits give students different types of lessons and approaches to build on, creating a kind of network of learning.

ESTHER: I was ... trying to encourage repeat visits ... which I always do. I try to encourage kids to not just feel like it's a school thing they do, but ... a place where they can come and have fun and learn about things ...

LESLEY: I actually think a lot of them do, because frequently on Monday morning during news they would say that they had been to the gallery again, or they had seen the next exhibition that we were going to go to. So, I think quite a few families did take that opportunity and go into The Suter a lot.

Repeat visits to The Suter enabled the on-going development of ideas, revisiting prior Suter learning experiences and developing concepts. *Arum* was an installation of over five hundred white papier-mâché arum lily forms suspended in a bright, white room. The exhibition existed as a meditative space intended as a memorial to loss. Lesley's class visited *Arum* some time after coming to an exhibition curated by the University of the Third Age (U3A) *Colour, Shapes and Images of a Lifetime*, which also had memory as a theme.

ESTHER: ... it is interesting that *Arum* ... was visually really, really different, but the concepts really hooked in well with *Colour, Shapes and Images of a Lifetime* ... because it was like, memories ... *Colour, Shapes and Images of a Lifetime*, was the U3A women remembering ... experiences in their lives, and the kids were hooked into their own memories too. And then, when we went into *Arum*, which was kind of a memorial ... we were, in a different way ... focusing on things that were gone ... so it's a different take on it. But the themes were the same, even though the actual visual exhibitions were completely different.



Figure Six: Lesley's students visiting *Arum* in which they considered memory and loss.

Credit: Lesley Kotua

As well as revisiting and developing concepts, an understanding of particular aspects, such as an artist's techniques, developed through multiple visits:

ESTHER: That one wasn't pastel, though. That's a painted one ... by the same artist, Mina Arndt and ... the portraits one ... was pastel ... This one ... linked into the last lesson, because I said, "Can you guess?"

LESLEY: They did, because Dana answered. I remember that. Yes. That was amazing.

ESTHER: Because the style was very similar of that artwork, and it's also got a baby in it. So, I thought that's good for the kids to make those connections. Even though that one's painted and the other one's a pastel one, they're very softly applied ... the mood of the picture is a lot by the application of the actual materials the artist's using.

Repeat visits enabled the effective scaffolding of Lesley's students' learning:

ESTHER: Yes. Well, the good thing about your class is, we can keep going on little things. We can keep building on the small skills we learn, we can keep building on them each time and developing them.

LESLEY: Scaffolding is the word.

ESTHER: Well, that is what happens, though, isn't it? Because you've got the repeat visits, which for me is really, really important ... we compared "*My Place in Art*" with the "*Colour, Shapes and Images of a Lifetime*", and the sort of similarities, and the way your particular class manages to build ... it's kind of like weaving, isn't it? ... They get lots of little concepts that get woven together and they can ... make a firm basis for learning.

The data reflects Silverman's (1995) idea of meaning-making as a constant process of remembering and connecting and Hooper-Greenhill's (2000) stress on seeing patterned relationships between learning experiences. This supports the suggestion of the benefit of repeat visits demonstrated here.

Repeat Visits and the Community of Practice

As well as student learning being improved through repeat visits, the community of practice as a whole seemed to work more effectively as a result of repeat visits. This will be discussed further in Question Three.

Both the sharing with parents and the weekend revisiting of exhibitions after a Suter visit, were thought to enhance learning. Independent repeat visits in the weekend enabled the development of intelligent novice behaviour, as students taught parents content covered during class visits. In doing this they needed to reword and explain it in their own way, to make it their own.

LESLEY: ... when the kids drag their parents in at the weekend, they're probably disappointed that you're not there, to talk them through it.

ESTHER: Although that means the kids have to talk their parents through ... which is quite good ... because then the kids can spout everything that they've learnt. So that re-teaching ... them teaching something they've learnt ... to really know it.

A Case Study over Time

Over the course of the study a significant improvement in confidence and achievement in The Suter setting was seen in lower achiever, Dana. Lesley described

her as “becoming intelligent.” She seemed to have developed a sense of agency in the Suter environment. In the Pilot Study Lesley described her as a child with very limited prior experiences, and for her the consistency of regular visits over the course of the year clearly showed her ability to develop the attributes of the intelligent novice:

LESLEY: Dana ... doesn't like to stand out in a crowd for anything at all, and she'll do things with other children, but never, ever on her own. That's the first time I have seen her volunteer ... she must have felt very comfortable in what she had learnt that day; she must have remembered and known that she would be all right.

ESTHER: But... she is the child that we have seen independently following my instructions and doing the tasks ... first on the colour swatch activity and on the mood activity, and here she is doing it again ... She was singled out as a needy child, but she has shown enormous improvement ... (and) you've put her up as an example of someone who is becoming intelligent.

LESLEY: Yes. She wasn't to start off with in any way whatsoever.

ESTHER: ... She has stood out quite a lot in this time, hasn't she?

LESLEY: She has ... I've been really surprised, well, it has been pleasing for me rather than surprising, really pleasing to see her complete and utter involvement ... her own interest in what's been happening. That's really very good.

To summarize, competence in the art gallery is built up over time. The data shows regular visitors had more understanding of how to learn in the setting and with more specific relevant prior knowledge to draw on. Additionally the data suggests that the community of practice was more effective after repeat visits. This will be discussed further in the next question. Finally the example of Dana and her marked improvement was presented to demonstrate how repeat visits can facilitate development.

Question Three: In What Ways Does the Community of Practice Support Intelligent Novices?

Material Culture Studies Bringing Communities Together

Prown (2001) defines artworks as a particular category within material culture studies because their “aesthetic and occasional ethical or spiritual dimensions make them direct ... expressions of cultural belief” (Prown, 2001, p.71). A community of practice studying aspects of material culture has the possibility of developing deeper understandings about the culture within which members reside. Also, as a group, it can develop cohesion through the members’ shared experience of a profoundly meaningful encounter with art.

During the course of the study Room 14 visited *Arum* an installation about death and loss. Soon after the visit the class had actual bereavements to come to terms with.

LESLEY: ... three little girls in here ... just lost great-grandfathers ... And I felt when we were talking it through ... that they had already had a lot of experience ... and our talking was just so open because we’ve already been down that track ...

ESTHER: ... I was just hoping if there were people that had actual losses ... they could be more articulate, and ... think about it more, what it means and how they can deal with it, just through that little kind of play version of it ...

LESLEY: And everybody understood when we were talking it through. The whole class was with us, with each little girl ... And just being able to talk about it ... It was just incredible. And they’d just learnt so much, and they’re feeling so much, and they’re very comfortable talking about things that normally, perhaps, a six year old wouldn’t feel comfortable either understanding or talking about.

ESTHER: Because it’s a sort of a universal experience, but we don’t talk about it much ...

LESLEY: Just the whole life thing. I ... feel ...the visits to the gallery have ... given them the adjectives and the words and just let it all come out ...

ESTHER: Well, artists are usually trying to make art to express important ideas ... in our culture, like the death one ... the important learning ... is the actual communication of important societal ideas ... like how we deal with death, which is a really heavy one ... But the kids, they all really, really wanted to talk about their cats who died ... because it's ... universal, and even though it's something we don't like talking about that much, it helps ... and so art is sort of like a way to express it.

LESLEY: It is. It's a medium through which they can express or feel, to start off with, until they need to pull that expression into something that's associated closely with them.

ESTHER: So, for me to hear that the kids are confident and ... articulate, that's amazing, because that means that the ... ideas that underline the artwork are ... coming through, they're in there, and they're able to use those things which are important parts of art ...



Figure Seven: Room 14's community of practice working together to develop ideas about loss.

Credit: Lesley Kotua

Adult Agency

The social benefits of visiting art galleries, such as those as mentioned above, are contingent on access. Bourdieu (1993) theorises that almost all areas of cultural practice, including art galleries, are systems of domination, and that museums symbolise societal social divisions. Merriman (1991) describes the likelihood of museum visiting as predetermined by one's habitus. Suter school visits require parental support both in transport to the venue, and more importantly, in working with students to create personal meanings in response to the artworks. These parents may not previously have been art gallery visitors, but might in the course of a year visit a several times with classes, necessarily becoming familiar and confident with the venue. Through this helping, parents can support their children in benefiting from each particular school visit and, to extrapolate, from the art gallery as a community resource. Students observe and interact with parents and grandparents attending. These adults are modelling involvement and enthusiasm in the art gallery setting. Through this the students can absorb the subtext that visiting galleries is worthwhile.

Father Alex's interest was noted from the beginning of the *White Gold* lesson:

LESLEY:... Father Alex ... left his group of children ... to tell me that the farm that this is based on, O'Connor's farm, was next door to the farm that he was raised on out at Appleby. So, he was telling me the history that he personally knew the cows on the O'Connor farm ... so excited that he had to impart the knowledge to me, rather than looking after his kids.

As the lesson progressed Alex continued to infuse his work with students with his ardent enthusiasm:

LESLEY: I noticed that Alex ... he was just blown away by the whole installation. He was animated and articulate ... his interest is transferred to the children.

Additionally the adults' interest in students' Suter artwork on display back at school, reinforces the idea that visiting the gallery is worthwhile, whilst enabling students to develop their understanding through oral retelling of key aspects of their visit.

LESLEY: ... they bring people into the classroom here. I look and I see strangers. And someone says, "Oh, that's my next-door neighbour". And they're looking at the works.

In line with Bennett et al. (1999) and The Museum Directors Foundation of Aotearoa New Zealand's (1996) research into museum usage it seems possible that school group visits could make galleries seem worthwhile to families (in addition to the reciprocal benefits of parent support in developing positive attitudes towards galleries in students as mentioned above).

The Community of Practice Creates Meaning

As Madden (1992) points out, visitors may need support in developing learning approaches to comprehend a curator's selection. The art gallery educator's role can be to bridge this divide, both for the class and supporting adults attending a school visit, thus developing a particular community of practice. Rice (1998) describes how museum educators can mediate, helping learners to explore the uncertainty arising from the possibilities and interpretations of a pluralistic viewpoint.

In *White Gold* one activity involved groups gaining and sharing information from the artworks and their labels. The students found out particular facts, which they later conveyed in a comprehensible way to the other students. Esther's questioning enabled the information gained to be shared meaningfully. The students' individual pieces of information were melded together into a more comprehensive, complex whole.

ESTHER: There's two things in this activity. There's getting the knowledge and presenting it. And sometimes the kids get up there and even though they've done it in detail ... they can't always present it. So, my role is ... lubricating everything ... because some of the kids are shy and ... some ... get mixed up on the information ... they get some rudimentary sorts of answers and then I just give a bit more, and the kid ... probably knows what I'm giving them ... because they've probably worked it out too. But ... they might have forgotten when they're presenting or something, so it just ... fits in. That's just how it works ... All I wanted them to do was have a few ideas and talk about it in their groups ... they didn't have to be encyclopaedias by the time they stood up.

Structurally this approach relies on an effective community of practice, and ties in with the social studies objectives in the New Zealand Curriculum. This states that students “develop understandings about ... how the ways in which people and communities respond are shaped by different perspectives, values, and viewpoints” (Ministry of Education, 2007, p.30). This is in line with Mansfield’s (2003) view that the role of art education in the post-modern era is to help students become contextually and culturally literate. She suggests art should be informed by social studies, looking at the complexities of the various groups and subgroups in society and their stories. Because the students in Lesley’s class were young and inexperienced, this contextual aspect of the artwork was often provided through the parents during the visit. Many parents who visited *White Gold* with students had relevant stories to share:

ESTHER: ... There’ve been so many adults have told me that their mums and dads used to warm their feet in cow poo ... Lots and lots of people have got ... funny stories from dairy farms and stuff they want to share.

Esther and Lesley continually noticed the degree of parents’ personal interest and learning in Suter visits. During *The Full Spectrum* session adults were keen to discuss aspects of the exhibition, and in Lesley’s view this added depth to students’ learning:

LESLEY: It’s good for children to hear intelligent, appropriate and focused conversation between adults, because they follow. They’re listening, whether they appear to be or not. They’re hearing it, and they learn what adults talk about ...

ESTHER: Well, they seemed to be, the three of us were having quite an ... animated discussion about the features of the artworks of Jane Evans, weren’t we?

Lesley and Esther discussed how adult supporters could provide missing contextual knowledge around exhibition content, enabling a more complex comprehension for students. With this support students might be able to avoid blocks to learning (through cognitive dissonance). Additionally adult supporters who might be more

prone to cognitive dissonance in relation to more abstract, contemporary art, are supported by both the gallery teacher's mediation and by their children's openness.

Content out of the student's ordinary experience was seen to be harder to for them to understand. Teachers could not assume prior knowledge:

LESLEY: ... because they obviously had no idea about the leather coming from cows ... the next day ... I did the Elves and the Shoemaker (story)... and then we talked about it, where the leather came from, and then we read it to the whole class and discussed it there ...

ESTHER: ...when I was explaining (during the Suter visit) I was looking round at the kids' shoes and I could see that none of the kids ... seemed to have any leather on their shoes ...

The data showed that absent previsit knowledge could be at times replaced by the use of analogy:

ESTHER: ... lots of kids ... don't know that it's the females that make the milk, even older kids ... most of them ... think it's not just the males that make the milk, but maybe quite commonly about half of Year Five and Six classes said the males and the females make the milk.

LESLEY: So, they're not generalising their knowledge about mothers making milk to a cow making milk, or a mother cat or ...?

ESTHER: ... when they get mixed up ... I say, "Well, think about humans. Do dads ever breastfeed babies?" ... and so that clears it up pretty quickly. But it's just amazing they've never ... thought about it, or they don't understand it at all, because it seems like a really, really simple thing. And it just shows that you ... can't presume kids know things ... (even though) it seems perfectly obvious to us.

Additionally the gallery educator could use students' prior knowledge to develop connections not directly relevant to an exhibition, but allowing the development of the student's personal understandings of the exhibit.

ESTHER: ... I helped make it more real for the kids by explaining that Halifax Street was where they went to the library ... obviously, so then they knew when they went down Halifax Street that's where there used to be a butter factory. So, I think actually giving it a ... physical reality ... is good for the kids ...

It emerged during the course of the discussions that intelligent novice behaviours are what the educators seek in large part to develop in students visiting The Suter:

ESTHER: We're actually training these kids to be intelligent ... that's what happening over the year ... each time they visit, they visit something that's very new, because ... every exhibition's different, and so we can think about these kids being trained up to have the skills of intelligently approaching a new thing. They're novices in a new learning situation, whatever they're like ...

LESLEY: ... like Dana, who has never, ever been into an art gallery or had anything cultural whatsoever, and look what she's coming up with. I think she is amazing herself, she's just surprised.

ESTHER: Yes. Well, I like to think that ... it's not like there's a bar that everyone has to get to ... that's the good thing about art, isn't it?

Democratic Learning

Hearing many viewpoints is desirable as many groups have stories to tell through art, and there are many angles to every story. It follows that varied people in a group make for a more authentic approach to a subject. This pluralistic viewpoint seemed to enable, as Barrett (1997) suggests, a richer and deeper experience for visitors. Esther stressed the importance of the parents' perspectives on the ideas covered:

ESTHER ... the parents are actually really interested in the lesson too ... and they ... bring their own things to it, and ... have different sorts of questions to ask me, that ... add on to the kids' things which is quite good, because then ... the kids hear a ... different angle on it.

LESLEY: A couple of ... grandparents ... commented on the value in what they learnt from it themselves ... and “Why wasn’t it like this when we went to school?” sort of thing.

Lesley felt that the students saw Esther as the authority in the gallery, but Esther felt that a range of perspectives was important for the students:

LESLEY: ... they’ve seen you very clearly as the art authority, the person to ask, and that was really good.

ESTHER: ... that’s ... interesting, because I’m always ... trying to ... reinforce the idea that ... the authority comes from all sorts of different people, because you can take art in such a lot of ways ... they are pretty confident to approach it in different ways, aren’t they? As you can see by their questioning.



Figure Eight: Students working on a practical colour theory exercise in *The Full Spectrum*

Credit: Lesley Kotua

Esther described the parents' role in the gallery as helping to develop ideas, not merely as reflecting the ideas of the gallery teacher. The key is to develop a discourse:

ESTHER: The first time I come round in a circuit and the kids have a question all ready for me about whether brown is a warm or a cool colour.

LESLEY: ... the mother responded to the question as well ... So, it was both of you responding to the children. So, probably the mother understood all along, but the child was using you as the teacher, and going to the top to ask the question.

ESTHER: ... Well, I like the way it became a little discourse between ... Penny and me and the kids too. That's quite good ... We just have a discussion and the kids can listen to that discussion, and in that way they can learn that ideas aren't fixed ... there's different ways of looking at things, and you can build on ideas by talking, and all those sorts of things ...

LESLEY: They included you in their group just like a natural member ...

This approach to gallery education has a power sharing philosophy. Through taking up the role of learning supporters parents have an active part to play in the development of understandings in the gallery learning. In order to do this they need a clear comprehension of the process and aims of this particular approach. The classroom and gallery teacher closely monitor the parents' delivery of learning tasks to the students, intervening at critical periods to enhance learning:

LESLEY: ... you asked them several times to look; but ... there were two or three there that didn't ... I noticed one of the girls looking at Alex, so she must have believed that he would know what to do.

ESTHER: ... you're ... abdicating your role of responsibility to the parents. So, once the parents are in control of the small groups then for you to suddenly get control again becomes more complicated ...

LESLEY: ... They've taken over. I've commented here: "The parents knew exactly what to do. The kids looked and listened to them."

Tapia and Barrett (2003) suggest using these post-modernist challenges to universalism and grand narratives as a basis for educational approaches in museums. Two possible outcomes they suggest from this are: community and school participation, and the provision of respectful fora for all voices and perspectives. The large number of adults accompanying Room Fourteen on the visits enabled each child to have their voice heard:

ESTHER: ... It's really delightful to have so many parents and grandparents; there were about thirteen, weren't there, with that class? ...

LESLEY: Unexpected. They just arrived at the school in the morning and didn't go. I was expecting about eight. I always like to have lots.

ESTHER: I don't mind ... I've had huge numbers of parents in lots of visits with this, and then I had a couple of schools where there was one parent help, and the kids just can't learn. They can't interpret the wall texts ... the parents help them interpret the wall texts, even little kids. They don't have the support for the drawing activity (or) for the looking and thinking at the visual elements. So, all the aspects of the exhibition are supported by the parents who are there.

LESLEY: They certainly are. And each child's opinion is actually heard. It's actually listened to and responded to by an adult, so it's a very valuable time.

The Community of Practice: Developing Concepts Together

It was not only the adults who had the role of learning supporters. Lesley noted children learning from other children:

ESTHER: ... seeing Dana who we'd identified ... earlier ... as the child who had difficulties due to her ... lack of experience ... her background before she came to Nelson Central School ... completely on task, enthusiastically involved.

LESLEY: What's rubbed off on her is that her friendship group is with those girls who are artistically talented as well, and I think she has learnt a lot from them as well as ... she can now make best use out of going to the art gallery, and, yes, she's got a far better understanding.

In *The Full Spectrum* Lesley noted children helping each other to learn:

LESLEY: ... a lot of people willing them to go and find the right one.

ESTHER: Yes, and helping them.

LESLEY: Pointing them in the right direction ... even though only one child was going, in their minds they were all going.

Effective adult support can come from a range of people, not just gallery regulars. Esther and Lesley discussed the Nana who gave excellent guidance to her group despite Lesley's observation of her lack of scholastic abilities:

ESTHER: ... I just love the Nana who's presenting, and she's so confident and warm in the way she's presenting with the kids; and they ... do it together, don't they, the kids and the Nana all do it together.

LESLEY: They do. Well, that Nana actually has very, very little confidence and you can't see it. I think she was just comfortable. She was ... put on the spot, and handled it really well, and worked with the children that she had.

Esther acknowledged that the task of parent helping during a Suter visit could be daunting to some adults, and that the confidence of the parents reflected in the students' ability to achieve given tasks. Lesley had doubts about the Nana's (Jo, described above) ability in terms of formal education, but she expressed such enthusiasm in presentation of the historical story her group conveyed, the class was captivated. Jo showed an engagement with this story (of a working class woman who funded her emigration through wet nursing) indicating that she felt it was of significance. This seems to demonstrate Tapia and Barrett's (2003) position that we can engage community through using relevant mini-narratives in art teaching. Perhaps in this way visitors can perceive the gallery in Vygotsky's terms, as a 'cultural tool', a medium for conveying important social ideas.

LESLEY: ... I'm pleased you chose ... Jo with her little group and presenting so nicely. I think she had lost her self-consciousness, her lack of confidence, because of the topic that they were talking about.

ESTHER: Yes, that's right. She was so open and ... I always think to myself ... a lot people don't ... get the experience to stand up in front of people and say anything. So, it could be quite daunting, what I'm asking them to do. But ... she's completely laid back and just ... lovely with the kids ...

LESLEY: Yes ... Jo's group were just so confident. They were with her every inch of the way, and she was with them every inch of the way.

Post Visit Learning

Lesley continued to develop Suter concepts back at school, moulding them into other areas of classroom learning. One example was The Suter activity of drawing images of cows labelled with students' attributes (in line with the branding of the cows on display). This was enhanced by Lesley back at school, adding a named ear tags, to link with the genealogy aspect of the exhibition:

LESLEY: ... they all knew that those cows had names, and they were fascinated by that. So when they... created their own cows, every single cow had an ear tag with its own name.

As well as the more conceptual aspects being followed up at school, Lesley ensured that the practical art skills developed at The Suter were continued.

LESLEY: Fiona, the student teacher ... carried on doing contour work with the children ... and they were practising all different sorts of contour lines.

Lesley saw particular value in completing practical art tasks started at The Suter later back at school. For her this enabled a re-igniting and developing of concepts started at The Suter, and additionally enabled her to add a differing perspective:

LESLEY: Oh, I love coming back to school to do them. We have the most amazing time, because ... everybody else is in work at school ... We have morning tea and a play on our own. We come back in ... and we start the whole session over again. And it's so exciting and so rewarding. Really good.

ESTHER: And it keeps it going, back at school. I don't want them just to think it's something that happens down there. It's nice if it's got the carry-on, isn't it? But I ... do get ... teachers want(ing) it all sorted out and finished and that's it ...

LESLEY: Oh, no, because you have to do a follow-up to make it meaningful to the children. And also I actually enjoy doing it. I have my say then.

ESTHER: ... And in the gallery the artworks are there, and so you want them to be looking and talking at the artworks ... if we finish (the practical activity)

at The Suter, they really aren't very developed because there's not ... enough time ...

To summarize, looking at physical artefacts seemed to give a point of focus for the members of the community of practice, both adult and child alike, to facilitate the learning of culturally significant ideas, with relevance to all. It was suggested that the adult supporters' demonstration of agency, their ability to act and interact in the gallery setting might have an effect on the students' perception of the value of the art gallery, and thus their ability to make use of its resources. The data shows how concepts can be constructed during The Suter visits with all members actively supporting each others' learning. Furthermore, after the visit, adult supporters can continue to facilitate learning through revisiting independently, as well as viewing and discussing Suter work back at school.

The concept of democratic learning was put forward, suggesting that the viewpoints of many can create a more sophisticated level of understanding. This democratic learning makes use of the varied strengths of the group, just as the individual intelligent novice knows and makes use of his/her own strengths. The next question discusses how the community of practice as a whole functions like an intelligent novice.

Question Four: In What Ways does the Community of Practice Demonstrate the Characteristics of the Intelligent Novice?

Over the year at The Suter a community of practice developed with Lesley's class visits. Each Suter visit the adult supporters, Lesley, the gallery educator, and the students who entered into a fresh exhibition environment, seemed to have an expectation of learning. Each time, as the experience is new, participants (including the Suter educator) can take on the role of the intelligent novice to gain 'maximum value' from the visit. For different participants this role has varied implications.

For the gallery educator and the classroom teacher the significant novelty is the students' reaction to the particular exhibition. However, while the classroom teacher had more knowledge of the individual students, the gallery educator had more knowledge of the exhibition. For the parents the art on display may be novel to them,

but they may also be inexperienced with the role and responsibilities of a learning supporter.

Each member has different novice roles during a visit, and the community of practice which develops over time can support and share various strengths within the environment in an organic way. As we have seen the community of practice which developed around Lesley's class's visit over the period of the study showed the characteristic of its members, both adults and children, being open and enthusiastic but novices. All members of this community of practice were novices to some extent.

The Gallery Educator and the Classroom Teacher

One way in which the gallery educator took on the role of the intelligent novice was through working with the classroom teacher, carefully surveying the class of visitors and its dynamics, assessing and responding appropriately to the situation as necessary. As a team, they took cues from each other, sharing information and strategically developing learning as the lesson took place:

ESTHER: You and me sitting up at the back, looking at the whole scene, gesturing ... the orientation of our ... bodies, looking out ... we're... sitting back observing ... Having the parents engaged allows us to have an overview and think about what's happening and how we can extend it later on; and you can really see it clearly in this one ... with us pointing. I'm pointing to groups and... you can see that we're really noticing what's going on with the different kids just together ...

Cognitive Apprenticeship in the Gallery

Cognitive apprenticeship applies traditional apprenticeship techniques to allow members of a learning community to assist learning. Cognitive apprenticeship can be used to teach intelligent novice behaviours to all members of a community of practice during Suter sessions. Parent supporters participate in a kind of apprenticeship during visits. Training is given, as they are expected to be actively involved in the facilitation of learning in groups of students. Their support was seen to become more effective as parents visit repeatedly with classes. This suggests the development of their understanding of the task, and their sense of agency in the gallery over time. As

parents become more familiar with the setting they can take a degree of responsibility for the students' learning, and they in turn mentor the students as their apprentices.

LESLEY: ... that parent input went a long way towards helping, and your guidance of them too, because the parents understand ...

ESTHER: Your parents understand, because your parents do repeat visits ... they're ... used to taking responsibility for a group ... They've got to be the people that make sure their kids understand, and I will support them in doing that, but they do have a responsibility in the learning process.

LESLEY: Yes. They've been really good at it, I feel.

ESTHER: Because we get the same ones again and again, they get used to what the expectations are ...

Annabelle has been visiting The Suter as a parent help with her children for many years.

ESTHER: ... she's been coming to The Suter for years and years and years ... she's so confident and good with the kids.

LESLEY: She's got three children at this school, and Charlie is the youngest.

ESTHER: Yes. And they're just ... very at home with being at The Suter, and ... just the history of coming over the years, practically as long as I've been there, and ... she's got the ... idea of being able to relate to other exhibitions and experience that she's had too, confidently. And there's lots and lots of Nelson Central parents like that that ... their children have been through, and they're still coming every time, and it's really ... nice.

This contrasts with behaviours of unfamiliar parents:

ESTHER: ... some of the parents I get from outlying schools, they just don't pay any attention ... the kids know they're meant to listen to the teacher's instructions, and the parents think they can just ... gossip in the back ... they don't realise the task in hand ...

LESLEY: Well, they're missing out on what they have to do as a parent.

ESTHER: Yes. Well, that's because maybe they don't know what their role is in a Suter visit as much as regulars. Yes. I think that's the thing, really.

Three approaches of cognitive apprenticeship are scaffolding, modelling and cooperative learning (Mayer, 2003). Examples of each of these techniques were observed in the study:

Adults Scaffolding

As we have seen, in the initial orientation to *White Gold* adult novices were observed modelling productive attitudes to novel learning content, in their active interest and enthusiasm. The energy level was high as the students and adult supporters discovered the exhibition together. This enthusiasm enabled parents to translate and transmit difficult content to the students. This was achieved through informal scaffolding:

ESTHER: ... (it) is quite inaccessible for kids, because it's got a lot of words and information, but I just really wanted to impart the idea that the artist did a lot of learning before they actually went ahead and made the artworks ...

LESLEY: ... as an artwork it was rather obscure. But later on, when you were talking to the children, the kids were telling you the names that were on the genealogy listing ... of the herd ... I don't (think) the children would have been able to read the writing ...

ESTHER: No, they wouldn't, because it's cursive writing.

LESLEY: Yes. So, the parents must have been reading out names, and they must have been talking about them ... with those children.

Modelling

As well as providing cognitive support, Esther and Lesley considered that adults also had an important role in modelling confident behaviour in the gallery. They discussed how it was essential that adults were engaged in the same way that the students were:

LESLEY: ... I think those children would have been better if the parent had stood beside them like Jo had with the others, because those three particular children are very articulate, and they have a lot to say, especially Harriet, who

didn't say a thing. Harriet has a very inquiring mind, and a really good general knowledge, and likes to talk and likes to be there in the front and doing things, and for some reason she didn't ...

Cooperative Learning

Cooperative learning was used in *White Gold* to convey information. Groups of students and parents decoded gallery information, then conveyed it to the rest of the class with the gallery teacher developing and enhancing particular concepts. For Esther this was a less hierarchical approach to knowledge in the gallery than more traditional approaches:

ESTHER: ... giving responsibility to the parents as intermediaries. You don't know that they're going to do everything, and it doesn't matter whether they do or not, really ... but you do get a varied ... thing, and that's why I'm there afterwards to fill it in ... They do what they do, and then I fill in the gaps.

LESLEY: Oh, you've come in each time and got them where you were hoping that they would go, and that's excellent, because ... in one minute they've learnt more because they've added to what they already knew.

A benefit Lesley saw in cognitive apprenticeship provided by parents was that the teacher was free to step back and analyse students' behaviour in order to develop ongoing learning experiences:

LESLEY: I was ... taking notes on the children to follow through on things when we got back at school. That was good.

ESTHER: So, that's really useful to be able to step back. You've got all these children really well occupied ...

LESLEY: Not needing me in any way at all.

ESTHER: ... And so you're free also to interact with groups, but also to take a look at your students and see what they're learning, what they're doing there that can be worked on later on back at school.

Learning for All

Optimally everyone in this community of practice, adults and children, are learning together cooperatively as intelligent novices. In the Suter visits some of the motivation for parents seemed to be their own learning, as well as supporting their children.

LESLEY: There was no reluctance ... from the parents ... they were up immediately, like they wanted to get into it as well ... I think they learnt as much as the children, probably more, because of their previous experience.

... ESTHER: ... they're learning a whole lot in the process of teaching, whether they know it or not ... about art and being artists and looking at art, by teaching their kids ... we're not just teaching the kids here, we're teaching the adults, and I think that's why they're excited to come, actually.

In *White Gold* a scroll listing the herd's genealogy provided an opportunity for learning together:

ESTHER ... those whimsical cow names really appealed to adults, and so the adults were saying, "Look at... this cow's called Casanova", and ... "oh, they've got all sorts of beautiful names" and that's what the parents want to share ... So, the parents are seeing things with their own interest in the exhibition, and sharing that with the kids, and thus motivating the kids. And they're getting a really broad sort of understanding of the exhibition because they're getting more than what I'd teach them, because they're getting the perspectives and interest level from all the (others) ... and then we go back together ... and share some of the ideas. So... that's how more minds make a richer learning experience, really, for kids.

The community of practice operated cooperatively in structured and unstructured episodes:

LESLEY: ... the presence of the parents and grandparents didn't alter the behaviour of the children. They stayed focused and interested in what they were doing ... possibly partly because the parents were more interested in the art than mollicoddling their children ...

ESTHER: ... that that little section is really special, because ... for both the parents and the kids it's ... like a discovery...

LESLEY: Between children and children, and adults and children, and between the Dutch mother and her mother who doesn't speak English at all ... they were all learning.

ESTHER: ...you can just see that everybody's talking together and they're really interested and the kids ... and the parents are noticing things. The parents are acting just like kids because ... they're really, really into it.

Esther and Lesley observed the participatory modelling of inquiry in *The Full Spectrum* as adults learnt alongside, but independent of, the students. Parents were actively engaged, modelling independent inquiry for students in an authentic learning setting: the art gallery.

ESTHER: They went off in groups. But we saw a lot of kids wandering around in their own groups with their adults caught up somewhere else, completely on task, which was really great.

LESLEY: It was. Well, the adults were doing the exercise too. They were enjoying it as well. So, they were learning a lot as well ... It's good for the children to observe that as well.

Developing the Community of Practice: Training Adult Supporters

Hooper-Greenhill's (1991) model of learning in the museum shows meanings and communication flowing both back and forth as described in Chapter Three. In the current study the meanings flowed within members of the community of practice, and additionally flowed from viewers to artwork and back. This necessitates community of practice members accepting authority for their own and the group's learning. A democratic approach to knowledge was seen to underpin sessions. The gallery and classroom teachers facilitated, generally in a hands-off way, setting expectations of effective learning. Parents coached and managed students in their own way, within boundaries. The gallery and classroom teachers needed to communicate their expectations of parent support clearly. Parents had a responsibility, to some extent

taking on the mantle of the teacher. To do this they needed an understanding of their specific role during gallery education sessions, including supporting the protocol for these visits:

ESTHER: ... I had to get up and shift a group away from the artworks, who were leaning on the artworks ...

LESLEY: She ... being an artist herself, she should know not to touch the artworks, or to take care of the surroundings.

ESTHER: But ... artists often think you can touch the artworks, because they make artworks by touching them. They have a completely different view about artworks from gallery protocol ...

Harnessing parents' enthusiasm into productive learning support was dependent on their clear understanding of the requirements of their role on the gallery. This needed training:

ESTHER: ... (It) has been really, really good for the kids' drawing to have small groups with parents leading the kids' eyes around the contour. But I need to describe extremely clearly to the parents so that it works. And it has been really effective and I've had wonderful contour drawings ...



Figure Nine: Parent supporter in *White Gold* guiding students through the process of contour drawing.

Credit: Lesley Kotua

When the parents understood their role, they were seen to be able to provide valuable support for the students, independently:

LESLEY: They were fully on task. There was no need for you or for me to intervene or support or even encourage them. Parents had completely taken over that role. We were there and we were ready, but we weren't needed in any way at all. It was understood and they wanted to get on to it. The parents did a fantastic job.

However where adult supporters were unable to comprehend their job, the opportunity for effective learning could be lost, even to highly capable students:

LESLEY: ... both those children have special learning abilities, but they definitely needed an adult who could lead them to much greater things than just that. I can't believe that Joshua is just standing there, and I know his head would be absolutely full of exciting things, and that Grace couldn't present, when she's ... really outgoing, can do anything on stage in front of people ...

ESTHER: ... the student teacher was not getting the kids to do the things that I'd asked them to do ... I watched them looking at all sorts of other things. They were enjoying the exhibition ... I don't think the student teacher really understood the scaffolding process that was taking place. She probably just thought they were going down and ... wandering around and looking at whatever they felt like ... so the kids weren't able to fulfil their part of the lesson. ... The general parent population of your school are used to what it entails ... and the student teacher ... she is an artist as well, and so she's familiar with The Suter. But obviously ... not ... with The Suter education programme, because she wasn't really familiar with what the requirements were ...

With adult supporters confident to participate and able to be involved in an appropriate manner, the class teacher and gallery teacher were free to orchestrate as necessary; responding to each other and to the situation, a fluid process where a range of meaning could be created within the community of practice:

LESLEY: I'm ... pleased with the way that I was able to visit each group without the children being ... aware that I was there ... I was praising some works as I went around ... (but) I'm merely a shadow to all of this. I'm relaxing like a bystander, not taking over and being the teacher. So, the children weren't looking to me for guidance or behaviour or anything else. I was just unnecessary ... it was the same at every group ...

ESTHER: Able to take note of what's going on.

LESLEY: Oh, yes. They ... were completely independent. I know the parents were excellent as well.

To summarize: the community of practice demonstrated the characteristics of the intelligent novice in a number of ways. The gallery teacher and the classroom teacher acted together somewhat like the 'executive functions' of the brain, controlling the learning which takes place. The adults and students learnt together cooperatively in a way which reflects the concept of cognitive apprenticeship. Three particular aspects of this approach observed were scaffolding, modelling and cooperative learning. Particularly significant was the adults' seeming enthusiasm for their own learning

during visits. In this community of practice all members seemed to see themselves as learners. With the two teachers as ‘executive controllers’ it was important that the adults who supported their students during visits understood and were able to fulfil their active role in the learning process. If this was working effectively concepts were developed together within the group.

Chapter Summary

This chapter considered the data pertaining to the key research question “How does learning in the art museum help students become intelligent novices?”.

It reported data structured around four questions:

1. How intelligent novices make effective connections between prior learning and novel situations?
2. How do repeat visits enable students to practise strategies to develop as intelligent novices?
3. In what way does the community of practice support intelligent novices?
4. In what ways does the community of practice demonstrate characteristics of the intelligent novice?

The data reflects Vygotsky’s (1978) position that knowledge and learning is located in context, is active and is developed socially. Students and adults were seen to work together on authentic projects, while the two teachers provided facilitation and scaffolded students’ learning. In this community of practice the adult supporters contributed to both teaching and learning, making a complex, cooperative environment enriched by the perspectives of the variety of the participants.

Chapter Five: Discussion

Introduction: How Intelligent Novices are Developed in the Art Gallery

To understand how intelligent novices develop in the art galleries, the unique aspects of learning in visual art and, in particular, learning in this environment, need to be addressed. In the pilot research Lesley described the value of art thus:

“It is practical and it’s discerning, and it’s an expression of how we see and feel and observe and react to our environment. It’s exciting. The artworks invoke language; different people, different interpretations. It’s ageless, and can be shared by those from one to 100 years.”

It is helpful to consider how the data reflects the individual and the societal, particularly in relation to the theory introduced in Chapter Three. The setting of the art gallery can be seen as a societal construction to deliver its messages. However, the individual’s experience within the institution can be both social and individual. The data reflects the individual response through observations of hands-on and sensory-based learning, as well as participants’ demonstration of agency within the institution. The social aspects are highlighted in the on-going discussions and the interpersonal relationships which occur concurrently with, and are integral to, the learning.

This chapter discusses the individual and societal in terms of: the art gallery as a setting for the development of intelligent novices; how students themselves respond to the setting and the teaching; the gallery teaching programmes which support the learner, and the communities of practice which emerge from these education programmes.

The Art Gallery as a Setting for Learning

The art gallery setting is intrinsic to the research findings. The nature of the institution is integral to the type of learning which takes place. Students’, adult supporters’ and teachers’ responses are all deeply influenced by the character of the setting and, in particular, the artworks exhibited. Lesley contrasted her own experience of The Suter as a younger woman with that of her current students. She

described barriers to gallery visiting, in line with Bourdieu's concept of habitus. Lesley clearly felt left out: children were excluded.

Merriman (1991) links the habitus relating to school with that of the family. This, in turn, can flow on to school gallery visiting. Judging by the strong family support in Lesley's class, parents clearly believed that school was a place they were part of, and could be actively involved in. This seemed to extend to The Suter during class visits and family Suter visits during the weekend. Bennett et al. (1999) suggest Bourdieu's theory of habitus, which may have been true in the 1960s when it was first put forward, but does not translate to differing situations. This aligns with Lesley's feelings of a barrier to visiting The Suter in the past, which she sees as not existing for children and families today.



Figure Ten: Lesley's class and adult supporters after a Suter visit. Credit: Lesley Kotua

Bennett et al. (1999) and The Museum Directors Foundation of Aotearoa New Zealand (1996) found a range of reasons for non-visiting of museums. The MDF study suggests that family socialization was a significant factor, but the reasons were more complex than simply privilege. This study at The Suter, shows a strong family influence in museum learning, and it appears that a number of factors affect visitor experience at The Suter: the age of students, proximity of the gallery to the school and the power-sharing underpin the partnership which has been established.

Merriman (1991) argues that it is difficult for museum educators to make a difference alone and stresses the need for partnership. This research shows a clear link between school, home and The Suter. Museums can be seen as a product of power and its relationship to knowledge. In this case, The Suter is attempting to share power, in terms of teaching strategies used, and the active involvement of families. It was a significant moment in the first video when, unsolicited, a student enthusiastically recalled seeing a reference to The Suter in the newspaper. This six-year-old obviously felt the gallery noteworthy in his world.

For students who visit, their own input and presence at The Suter is an important factor. Seeing their artwork lined up beside those displayed on the wall, hearing their own viewpoints and interpretations considered alongside those of others' (including artists, adult supporters and teachers), give students ownership, and a sense of belonging in the gallery. The data shows that many types of artworks and exhibitions can be inviting to students, depending on the educator's approach. Artworks need to relate to the students, but this can occur in many ways; for example, they can be personally relevant, compelling, or have a strong engaging narrative or sensory element. Wolf (1992) posits that the unique aspect of museums is their great potential to engage visitors in many ways. This is reflected in the varied exhibitions, artworks and learning students engaged in over the research period.

Lesley noted students behaving differently in The Suter setting from the norm at school. They seemed more focused than usual at the gallery, perhaps because of the compelling nature of the exhibitions and activities. It seems that in-depth engagement of students demands an exhibition which provides multiple levels, enabling a range of interaction, as demonstrated particularly in the *White Gold* data.

Obviously six and seven-year-old students have had different prior experiences and are at varying stages of development compared to adult visitors. They engage with exhibitions quite differently than adults. Because of this, the school programmes provided by the gallery teacher offer a range of hooks which build links between students and the exhibitions on show. Particular elements might be amplified and analogies made, linking aspects relevant to the students' experience. However the data shows that students are motivated to make much broader use of The Suter than merely visiting during school hours. The weekend return visits provide students and their families with a much freer experience of viewing, perhaps framed by the concepts covered during the school visit, as well as the perspectives of those with whom they are visiting. This range of viewpoints is teaching students the complex possibilities of ideas and interpretations in art.

Kesner's (2006) concept of cultural competence, where the individual uses perceptual-cognitive competence to transfer looking into a meaningful experience, suggests that the viewer can be trained to appreciate the experience of encountering an artwork or exhibition. Suter visits could be seen as training for students to develop ways of gaining understandings from the artworks. Weekend family visits become independent opportunities for students to practice and elaborate strategies learnt during Suter sessions. Efland (2002) states that works of art must be understood in terms of their embedding contexts to get optimal meaning. Understandings of these embedding contexts are naturally influenced by the viewer's prior experiences, which are in turn influenced by social class and other factors, as mentioned above. For young students, with little prior learning, visiting with school groups, the teacher and the parents actively support the students with contextual understanding. In later family group visits, parental support is necessary to enhance meaning through contextual support.

Zolberg (1994) has the view that habitus relates to the idea that greatness in the arts is innate and cannot be learned. In the pilot study Lesley talked about the notion of talent, suggesting that, to some degree, it is fixed. However Esther has more egalitarian views in line with her constructivist viewpoint. For her art is for all; it can be appreciated in the broadest possible continuum. She recognises art as a complex field and, while all students might not achieve technical excellence, they can all

express themselves and interpret art, particularly with training and support. The examples of Chelsea and Dana, two low achievers, both showed a significant level of engagement with the artwork.

The concept of the intelligent novice is at odds with the notion of talent, as it is suggested that through repeat visits, scaffolding and communities of practice it is possible to train the novice learner to gain significantly in the art gallery environment.

The following section considers the art gallery as an ill-structured learning environment and considers how learners, in particular novices, can develop cognitively in this setting.

The Art Gallery as an Ill-Structured Cognitive Environment

Ill-structured knowledge occurs “whenever judgments may be made in the absence of rules or generalisations that apply to numerous cases and this includes most situations in life. A capacity for making effective judgments, given the ill-structured character of life itself, is a major intellectual accomplishment” (Efland, 2002, p.84). The art gallery provides a setting for ill-structured cognitive problem-solving. An intelligent novice could be described as someone effectively negotiating the ill-structured cognitive environment of the art gallery. Since the nature of ill-structured learning is based on individual cases, rather than generalized rules, each time the learner encounters a problem it is new. There is no prescribed set of rules to follow to solve the problem, nor a specific correct answer. In a sense this makes the learner in such a domain an eternal novice.

Dangers of Simplification

Jonassen (1997) suggests that ill-structured cognitive problems are unsuitable for novice learners due to their complexity. He describes the building up of the declarative knowledge base in novice learners before introducing ill-structured problem solving. Teachers have had a tendency to simplify ill-structured data, without taking into account the different nature of learning in different types of domains. Efland (2002) stresses that an ill-structured domain should not be represented as well-structured. He describes the cost of this simplification as a reduction in the flexibility of the knowledge being acquired, thus limiting its potential

for transfer. The current research shows young students learning effectively in an ill-structured setting.

Supporting Novice Learning in the Ill-Structured Gallery Environment

In the study the following two factors appeared to counteract over-simplification, and enabled effective learning in a complex field, even for six year olds:

1. Social Learning: Adults as Learning Supporters: In terms of the embedding concepts (such as related historical information) which enhance the viewer's understanding of an artwork, it is significant that novice learners of a domain have less content knowledge (Efland, 2002; Jonassen, 1997). Efland (2002) suggests that creating understanding in an ill-structured cognitive domain involves assembling of knowledge encountered through exposure to numerous cases. Additionally, Jonassen (1997) suggests, without adequate domain knowledge, even prior problem-solving skills cannot be transferred between domains. As well, interpreting art frequently draws upon knowledge from the differing domains. This is important because, "as more ways of connecting with the work are established, the more likely interpretations are to become complex, overlapping, or multi-layered" (Efland, 2002, p.84). It is this general knowledge and experience that are likely to be lacking in the young students studied. In Lesley's class contextual information was provided by the supporting adults, for example giving information about the dairying industry in *White Gold*.

Given that flexibility is developed when the nature of a specific domain's knowledge is represented in its complexity, Efland (2002) asks how students avoid feeling a subject is simply too hard. In this case students did not display a sense of failure, or difficulty learning. They were coached by the supporting adults in the Zone of Proximal Development, in the manner of cognitive apprenticeship. Modelling and coaching by adults in the Zone of Proximal Development helps learners reach a more advanced level than they would have alone.

Adult supporters have a role in helping students sift through ideas in a complex domain, refereeing discussions which untangle and develop ideas. Additionally, parents working in groups with students can model a range of alternative

interpretations from an artwork, thus demonstrating the complex nature of the domain of art.

As Jonassen (1997) suggests learners must learn how to relate ill-structured problems to their own personal knowledge. He emphasizes the role of memory in this stating, “The richest are the personal memories related to prior problem-solving endeavours” (Jonassen, 1997, p.82), suggesting that they might either support or impede solutions. Parents can have a role in evoking memories in the students, as well as promoting discussion, and, as we have seen, young students are highly motivated to share their own experiences.

2. Repeat visits: A second way for novice (and more experienced) learners to develop more complex understanding of the ill-structured cognitive setting of the art gallery, is through repeat visits. Spiro (1987) recommends “treating the content domain as a landscape to be explored. It is explored in detail by paths of travel that crisscross it in many directions, re-examining each site and theory in contexts of differing neighboring cases” (Spiro,1987, p.2). Efland (2002), Spiro (1987) and Jonassen (1997) all emphasize the comparison of similar examples in developing understanding in complex fields, which Efland describes as “searching for family resemblance among cases” (Efland 2002, p.88). Efland (2002) states that cognitive flexibility is contingent on the learner having a diversified repertoire of ways of thinking about the conceptual topic. He emphasizes revisiting and rearranging these as new cases of representations are encountered. The study demonstrates such conceptual development around memory and loss, which occurred in relation to the visits to *Colours, Shapes and Images of a Lifetime of a Lifetime* and *Arum*.

Cognitive Dissonance

Uncertainty is one of the qualities of ill-structured learning environments. Cognitive dissonance limits capacity to learn and, as Jeffrey (1998) observes, explains why children might favour incorrect prior mental schema in the face of contradictory sensory evidence. Efland (2002) has a more positive viewpoint stating this ‘cognitive conflict or discomfort’ might lead the learner to question their current knowledge, and perhaps then modify their understanding. He feels the teacher must challenge students’ presently held assumptions if they are conceptually inadequate. Hein (1998)

suggests that Vygotsky's Zone of Proximal Development can provide the right degree of challenge for students as well as enough familiar context to avoid cognitive dissonance. Freedman (2003) notes that we tend to look longer at things that are intriguing but not overwhelming. That, in general, we see to recognise rather than to appreciate.

However, as we have noted, the age of students in the study seemed to limit their potential for cognitive dissonance, since their limited overall knowledge decreased the likelihood of cognitive conflict. Developmentally, younger children have much more to learn and are constantly approaching new material. Since their knowledge is much less than an adult, not knowing is a familiar state for them, which may account for the students' attitude of openness noted in the research.

However Peckham (1965) suggests that cognitive dissonance is a necessary preliminary to problem perception and meaningful innovation. The research showed that students had not yet developed the skills of inquiry. As well as lacking declarative knowledge the students also had undeveloped procedural knowledge. By Peckham's argument, this undeveloped problem solving ability may relate to the fact that students did not seem to experience cognitive dissonance. They need to experience cognitive conflict in order to perceive a problem. The one child, Carly, who demonstrated cognitive dissonance, was developmentally advanced.

Freedman (2003) explains that many adults have negative emotional responses to new visual culture, in part because they expect that they will generally understand the world. He suggests that children are often more accepting of ambiguity in visual culture, as they lack the adults' emotional investment in understanding. Freedman points out that their emotional cognitive responses are direct, tied to their interests, and that their learning is dependent on this engagement. However given their developmental level, these young children may simply not have the expectation of understanding.

Art is a complex field, by nature uncertain, and as Efland (2002) explains, it is hard to simplify by eliminating this ambiguity. Rice (1998) suggests that as mediators, museum educators can help learners with the ambiguity of not knowing, while they explore a large variety of options and interpretations. The observed Suter

programmes used many adults; and much talk, sensory observation, analysis and hands-on responses; to examine multiple possibilities and viewpoints in a variety of ways. Art gallery education programmes need to reflect the nature of the field of art, in which concepts are often not clear or precise.

Cognitive Flexibility

Lankford (2002) describes learning as a complex, nonlinear, active process in which individuals draw upon previous knowledge and experiences, and apply these to their interpretation and understanding of present circumstances. Learning in ill-structured cognitive environments, like the art gallery, can develop students' cognitive flexibility, thus lessening cognitive dissonance. Efland (2002) explains that flexibility is facilitated when the particular complexities of a domain of knowledge are represented.

The data shows the gallery teaching approach as layered, bringing in multiple aspects in relation; to the artwork, as well as using analogy to extend concepts further by introducing new related ideas to the exhibition. Lessons taught complexity by building short activities with repetition and variation; layering and adapting concepts. This specific approach was for younger students who do not have the capacity to understand complex concepts immediately, but who can develop a good degree of understanding of the complexity of concepts over time.

An example of building up concepts in the course of a session is *White Gold*. Initially students learnt about concepts informally in small groups with parents. These concepts were then reinforced and developed, through teacher narration and class discussion. This was followed by enhancement and elaboration, through focusing on particular aspects of the exhibition in groups, and was reinforced by sharing. Finally concepts were revisited and developed once more, through developing personal analogies, a hands-on art activity, and a final sharing of ideas. Each of these short components built on and developed the one before. A ninety minute session of activities wove together, building up a developed understanding of the significant exhibition concepts.

Cognitive Flexibility and Art

Efland (2002) feels that it is important for teachers to present art as complex and ill-structured, not as simpler than that it is. Learning in an art gallery requires cognitive flexibility, and, as Hooper-Greenhill (2000) describes, an acceptance of the ambiguity of meaning relating to objects. Efland (2002) states that learners often draw upon knowledge from differing domains outside arts, to support the interpretation of artwork. The more a complex network of associations around the artwork is established, the more depth interpretations are likely to have. He suggests using art as an 'integrating vehicle' within the curriculum, as it is situated in social and cultural contexts, and often deals with universal human issues. Thus art education can connect domains of knowledge that might otherwise be isolated from each other. Lesley recognises the value of art is that it brings in all curriculum areas, connected by language and social aspects. For her art is a complex area connecting curriculum and general knowledge, as well as covering all key competencies. She described it as the language of living.

Efland (2002) suggests the metaphor of a lattice actively undergoing construction, to describe the progression of learning in an ill-structured cognitive domain. It has three interrelated factors: the organisation of knowledge in an individual's knowledge base, the organisation of domains of knowledge by scholars, and the organisation of content in instruction (Efland, 2002, p.100).

In 2008 Nelson Central School had a year-long overarching school theme which infused all learning: ***Local, Global, Connected***, demonstrating one approach to developing students' cognitive flexibility. This universal theme linked all Lesley's Suter visits that year. The development of the lattice can be demonstrated by the connections between the visits, all of which had an association with the theme. For example, the first visit of the year, ***My Place in Art*** described in Chapter Four, focused on the students' connection to their local environment, the second dealt with local history, and the third focused on New Zealand's environment and the implications of global warming. As the year progressed, all Lesley's Suter class visits could be related to ***Local, Global, Connected***. Concepts were developed, from the first visit, which focused on the students' personal relationship to the local

environment, into a complex understanding of the theme over time, as ideas were woven together in the manner of Efland's lattice.

How Intelligent Novices Build Connections between Ideas

Polson & Jeffries (1985) suggest that research into problem solving, in particular in ill-structured learning, emphasizes perception and pattern recognition, as well as divergent and creative thinking; generating as many alternative representations of a problem as possible. Additionally "cognitively flexible students understand learning as multi-directional involving the formation of multiple perspectives, with knowledge in separate domains overlapping. The more linkages are identified and integrated the more the learner is equipped to apply knowledge in new ways" (Efland, 2002, p.83). This section discusses how learners develop these complex understandings.

Art is a particularly effective field for scaffolding complex learning, due to the breadth of possible meanings in the domain. Works of art can connect widely separated spheres of knowledge. Scaffolding is contingent on categorization:

Categorization

Efland (2002) explains that it is more efficient to learn about things in groups than isolation. Comparing and contrasting observable features helps categorisation. The research shows that education programmes at The Suter were largely seen in terms of organising ideas: breaking them down, learning in stages, linking ideas, and bringing together ideas from composite pieces, to aid in-depth understanding. Esther described intelligent novices as using pieces of knowledge to gain more knowledge, their prior Suter visits informing later learning.

When considering categorization in relation to art, Efland (2002) reminds us that no existing definitions of art cover all cases, and that art has extendable boundaries as it evolves. Because of this, metaphors can establish meaningful connections between ideas and concepts. Furthermore, understanding the construction of metaphor is essential, since works of art are not facts, but embodiments of things which can be construed in various ways. Young students were able to grasp analogy and comparison, and in this way were led to more abstract thinking and metaphor.

An example of this was their visit to the exhibition *IDMe*. This exhibition, which showed symbolic imagery, enabled students to brainstorm and share associations with various objects featured in the artwork, before developing their own personal analogy (Figure Eleven). The purpose was to enable students to understand the range of possible associations that can arise from viewing artworks, thus developing cognitive flexibility through abstract thinking.

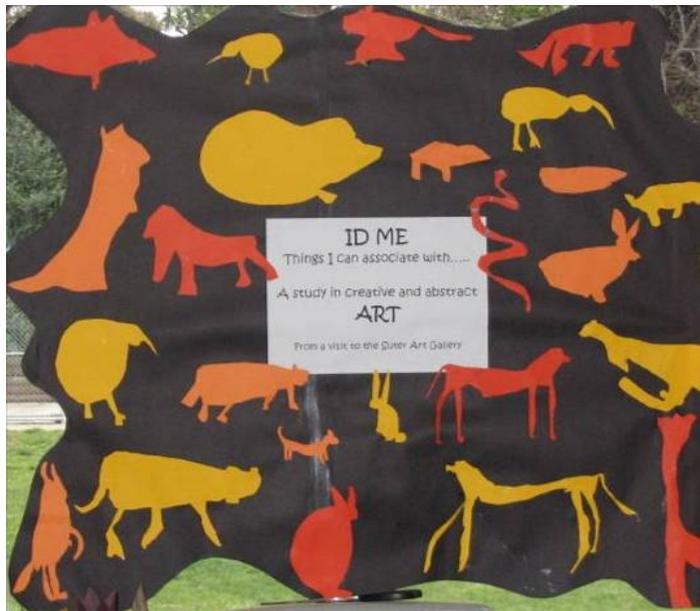


Figure Eleven: Class wall display in response to the *IDMe* visit. Credit: Esther McNaughton

Interconnectedness

Understanding happens when new information or experiences can be fitted into a structure, when patterned relationships between elements can be seen. This interconnectedness is integral in understanding. The data shows Suter education programmes providing links on many levels. These occurred through methods such as repeat visits, partnership with schools and parent involvement. The gallery teacher's role is as an orchestrator. She needs to take into account the components of meaning construction, as described in Efland's lattice model; and support the learners in building up understandings which reflect the complexity of the field of art.

Jeffrey (1998) states that themes in exhibitions are essential to help visitors make sense of exhibits. These themes can provide structure for students to build learning, as seen in *The Full Spectrum*, which displayed artworks arranged to reflect the colour

spectrum. Being an exhibition of artworks from The Suter's collection, students had seen many of these artworks before. With class visits to a range of Suter exhibitions, students can see the same artwork in different contexts, and hence develop their understanding of the expansive possibilities of classification in art, through the examples of the curators' various exhibition themes.

However, despite Jeffrey's view, it is possible to create school programmes which do not directly relate to the overall exhibition theme. Exhibitions are not generally devised for a young audience, and the overall concepts can be hard for children to understand. In gallery education it is more important that the educator create a framework within the exhibition, which enables the students to develop understandings from their own level. For instance, *My Place in Art* was an education programme that used an exhibition of landscapes to focus on the students' connection to the area. The overall exhibition theme supported the learning; but to make it more meaningful for students it was adapted, to focus on their personal knowledge and interest which, as shown by the literature review and the data, is a strong motivation for learning.

Hein (1998) points out that scaffolding links less familiar with familiar, and therefore the learner develops a relationship with knowledge which was previously impersonal. In *My Place in Art* the children's holiday experiences were linked with historical and geographical information, as well as specific art knowledge. Paris (1997) emphasizes the importance of the construction of personal learning. It can be seen repeatedly at The Suter as lessons start with students' knowledge, such as *White Gold*, where the educator referred to the location of Nelson's public library (which the students knew), and built on that with new knowledge.

Personal Learning

Rice (1998) considered how meaning is created in museums. She suggests that institutions such as museums construct consensual meanings, whereas individuals construct personal ones. Although, for her, the concept of informed perspective is to some degree at odds with consensual reality, she posits that art is a domain in which people are more willing to accept a broad range of interpretations (in line with the concept of art as an ill-structured cognitive domain).

Hooper-Greenhill (2000) and Jeffrey (1998) explain that some constructivists believe there is no such thing as objective reality; that knowledge is brought into being by the meaning that each individual makes of their experiences. Hooper-Greenhill (2000) describes how memory is organised around personal experiences and episodes rather than abstract semantic categories. The research data reveals the power of artworks and exhibitions which have personal elements like evoking relationships or places the students know.

Paris (1997) emphasizes the role of motivational processes involved in constructing personal meaning. The exhibition *White Gold* was highly engaging for the visitors, particularly as family groups. Parents were motivated by (and thus keen to share) the knowledge of, and association with, local aspects; whereas the kids seemed to be more stimulated by the actual physical presence of the exhibition. Additionally, the high level of parent support increases the personal element, since many children are sharing the visiting experience with their families.

In *White Gold* students had the opportunity to both present information gained during the visit, and to share their own personal ideas and experiences in relation to gallery activities. Esther and Lesley noted that students showed more immediacy and enthusiasm when talking about themselves. However including both types of information sharing enabled students to be both supported and extended through the development of current abilities. This is in line with Efland's suggestion of building up complex understandings by repeating, and varying experiences through comparison.

Another way to increase confidence, and consequently motivation, was through breaking down and simplifying techniques. In this way students were able to use comparable methods to those of the artists exhibited. This, in conjunction with the students' work being presented next to the artist's work and compared, enabled empowerment; as the children could see themselves actually achieving some similar results to that of the artists. During the pilot study Lesley's class visited the installation, *The Wreck of the Delaware*, by Sally Burton. Part of this showed tonal portraits of characters based on historical photographs. Students were able to use photocopies of characters from the narrative, and emulate Sally's technical approach

and concept, in a simplified way. The students lined their works alongside those on show and made comparison with the technique.



Figures Twelve and Thirteen: Students visiting *The Wreck of the Delaware* installation using a tonal technique similar to that of the artist. Credit: Lesley Kotua

Esther built on the students' confidence in a number of ways. Lesley felt the confidence and demeanour of the gallery educator had an effect on students' learning, providing activities students would find fun and engaging in a non-threatening environment, and using examples of students' work to demonstrate concepts, giving them a sense of pride and involvement. Lesley repeatedly mentioned that students showed enthusiasm throughout lessons, not wanting a drink or to go to the toilet, and not wanting to pack up and leave. Additionally she noted the students had a good level of confidence to discuss ideas, given their age.

Paris' (1997) research into situated motivation stresses the part emotions play in learning. He describes emotion and aesthetic appreciation as deeply motivating aspects of learning, with motivation connecting to prior learning and interest (Paris, 1997). Wolf (1992) goes further suggesting that the importance of emotional gains in museum learning is more than information gains. Throughout the research emotions evoked in both students and adults and their relation to motivation were noted. As mentioned, in some cases maturity and developmental aspects influenced the students' engagement; however the emotional relationship to a work of art seemed to be an underlying motivation for engagement.

Imagination

We regard the imagination as highly individual, and thus its involvement personalizes learning. The imagination has a significant role in thinking in the area of art. Efland

(2002) describes how thinking makes symbolic representations of the external world, and that imaginative thinking reorganizes these symbolic representations inside our head. To do this, learners must be able to construct meanings less dependent on conventional, rule-governed forms of thinking.

The interpretation of artworks has two purposes for Efland (2002), firstly for the viewer to understand them, but secondly, through the use of imagination, elaboration and extension, to interpret other situations where life's circumstances are unclear or uncertain. In other words, the transfer of the abilities of gaining meaning in the ill-structured domain of art, to a practical purpose in the wider world. The example, *IDMe*, discussed above, showed Esther actively encouraging the development of abstract, imaginative thinking through the overt teaching of analogy. It initially engaged students by relating to Ricky, a well known local monkey. The engagement continued, using animals as subject matter for developing analogies. The use of scaffolded learning throughout the lesson enabled students to have a practical understanding of abstract thinking.

Prior learning

Constructivism gives each learning experience much broader implications, due to its complex connections with prior and post learning. The constructivist approach to building meaning can be supported in the art gallery in a number of ways. Lankford (2002) stresses connections with outside gallery experiences of visitors, combining familiar with unfamiliar. Lesley showed particular enthusiasm for completing tasks back at school, reigniting and developing concepts started at The Suter. She saw this as beneficial in a number of ways, linking learning at school and The Suter, and giving her the opportunity to develop ideas in her own way. Jeffrey (1998) feels that constructivist museums must link to visitors' prior experiences. Content out of students' ordinary experience was harder for them to understand. Lesley counteracted this lack of prior knowledge (e.g. leather coming from cows) by reinforcing concepts back at school. This is one way ongoing learning was developed, but it was essential that teachers were very involved and alert during sessions, taking note of aspects to follow up. For this reason making effective use of parent helpers was important. If the teacher was not involved directly in teaching, she was more able to see the bigger picture, and to develop effective ongoing programmes. The constructivist teacher

must be constantly aware of the broader educational possibilities in any learning situation.

A number of examples of links to prior learning were discussed during the research:

1. The Connection of Suter to Learning at School Suter produced artworks such as class displays, and inclusion of these in student portfolios were seen as important facets of on-going interest and response to Suter visits. They gave Lesley a visual trigger, enabling students to easily reference previous Suter learning.

2. During Previous Suter Visits One reason why Lesley's Suter experiences seemed so productive was their frequency. The students were able, with the support and structure of The Suter's educator and her programmes, to build on prior experiences of viewing and understanding art in the gallery context. For example, Esther linked the concept of contour drawing in *White Gold* to a related activity from a prior visit.

3. Other Situations Esther's awareness of programmes operating at The Nelson Provincial Museum enabled her to reference their exhibition *The Body in Action*, which provided excellent concept support related to *White Gold*.

Hein (1998), Paris (1997) and Hooper-Greenhill (2000) all emphasize the importance of prior learning on developing understanding in the present. Responding to and understanding artworks are influenced, in Lankford's (2002) view, by two factors: prior experiences and the actual encounter with the artwork. In the research development, both behaviourally and cognitively, was noted in students over time. The improvement in students' understandings of gallery protocol enabled more effective learning. Esther's experience showed that regular visitors were more ready to learn. In the pilot study much discussion was given to the difference between the behaviour of regular visitors and new visitors.

Chang (2006) points out that, since learning is built up over time, through a number of varied learning experiences which, from the constructivist viewpoint, are different for everyone, it is very hard to discern what learning has taken place, or might become apparent at a later time. However, as will be discussed later, through repeat

visits teachers can monitor and note the development of understandings over time, particularly with the support of accompanying adults.

Leaving the question of how the individual makes connections in the gallery setting, the following section will consider how they relate directly to the artworks.

Intelligent Novices Relating to Art

Sensory Learning

Lankford (2002) states that both constructivist and aesthetic research promote the benefits of teaching a range of approaches to engaging with art. This engagement is most fulfilling when it actively challenges and develops the gallery visitor. The senses have a strong part to place in the visitor's experience, as the most immediate means of interacting with art. Efland (2002) states that concept formation begins with the senses. It follows that, as Hooper-Greenhill (2000) suggests, the first education should be of the perceptions. She states that the tangibility of artefacts makes abstract notions concrete, and encourages engagement with a range of senses, describing looking, on its own, as a distancing sense.

In the current research students were attracted to the physical, tactile qualities of artworks, for instance the installation *Glacier*, where the children's fascination with three-dimensional elements such as the tiny models was noted, in an exhibition which was overall somewhat abstract and obscure. Additionally artworks which reminded students of sensual or sensory experiences provided engagement, such as *Mother and Child* by Mina Arndt, which depicts a mother gently cuddling her child. Lesley saw it as impossible to replicate these physical aspects (the students' physical experiences, the atmosphere, the mood, the abstract qualities) in the classroom. Moreover the fact that the learning is away from the classroom, in a special environment, influences the students' learning and makes it more memorable. Lesley saw the presentation of the artworks as an important way to enable learning to take place. For her the mounting of the exhibition was of significant relevance to its educational possibilities.

Piscitelli et al. (1999) found that children were very attracted to hands-on exhibits. Taking Jeffrey's (1998) view into account that "although museums focus on objects, the key to constructivism is not what one does with one's hands but with one's mind"

(Jeffrey, 1998, p.218), the task would seem to be to harness this enthusiasm for the hands-on and transform it into inquiry. However, as discussed, the developmental level of the research group necessitated a focus on the visceral, partly due to undeveloped inquiry skills. One of the learning objectives of this group was the development of an understanding of the inquiry process.

Hooper-Greenhill (2000) cautions that the material nature of objects must be understood within an interpretative framework, but that this conversely limits the range of interpretations possible. Three-dimensional installations seemed to have a great impact on students. The research refers to students remembering information from a visit three years previously. In this installation students sat on the artwork, a huge tivaevae, and learnt in the manner of the Cook Islands.

Perception

The physical aspects of being in the gallery influence learning. Sensory stimuli provide data for the brain to analyze and categorise. Olds (1990) and Kesner (2006) emphasise the importance of fostering alertness in the gallery. Kesner suggests that museum visitors need to build their perceptual-cognitive competence through developing attentiveness and a range of related modes, skills and routines, which enable the viewer to 'see' the artwork in its original context.

The visual connection between students' artworks, and artworks in the gallery, links the children's hands-on learning with the actual artefacts on show. Students can see connections between artworks they have created and those created by others, therefore linking the artists' concepts and their understanding. Hands-on was described in the discussion data as the "glue which sets the concepts in the students' brains".

Hooper-Greenhill (2000) cautions against too much reliance on verbal response, so as not to negate the tactile and sensory. Furthermore Efland (2002) proposes that sensory perception and representation of objects, visual thinking, do not require text. He goes on to stress the importance of opening perceptions. Esther encouraged this process when she asked the students to enter *White Gold* quietly, and to be very aware that they were going into a new special place, seeing something they had never seen before. The novelty of the unexpected makes us more aware and interested.

However this may be difficult for groups interacting in a highly social way. The film shows the first few children walking in quietly, in wonder, and then the excited buzz grows steadily as the children share their excitement with the other members of the group.

Reading Objects

Hooper-Greenhill (2000) states that the meaning of material objects is variable due to inconstancy of materiality, as are interpretations of objects, depending who is reading them. She cautions that understanding objects is not the same as reading texts, since the categories of meaning are less clear with objects than with texts. Treating an artefact as text focuses primarily on the logical, with the material meaning being allocated to a secondary, less significant role. Knez (1970) states that, in art galleries things are generally creative products, “verbal discourse may be and often is of secondary importance to the non-verbal visual language of art” (Knez, 1970, p. 206).

Young children featured in this research were particularly focused on the material aspects of the artwork. For instance Chelsea, a special needs child, was observed repeatedly straying from her group and standing very close to one of the cows. However, the strongly social aspect of the Suter lessons meant that language was integral. Learning in groups necessitates language, and thus the experience of viewing the art is mediated through discourse. Esther’s rationale for encouraging the students’ first experience of *White Gold* to be a silent one, was to base the learning, initially, on their own sensory experience. However as noted, students observed the impressive physical aspects of the suspended life-sized cows, and immediately wanted to share their excitement verbally (as did parents). The significance of the social element of learning in the gallery will be discussed further in the next section.

The Community of Practice Supports the Development of Intelligent Novices

Eisner (1982) explains that forms of representations, like artworks, are socially situated. They are devices that humans use, to make public privately held ideas, as well as being vehicles through which sensory concepts are given public status. Learning in Eisner’s model, moves from sensory perception to conception, and then to representation and forms that can be shared publicly. The public aspect is critical

and is enabled by a community of learning, learning in a social setting, as demonstrated by the class's entry into *White Gold*.

Eisner's model places the sharing aspect at the end of the learning process. Contrary to this, Lankford (2002) states that the setting for all learning is usually social, and that it is through this social interaction that commonalities among individual experiences, as well as conflicting and contrasting points of view, are discovered. Chang (2006) posits that museums should facilitate learning experiences that capitalise on the social nature of learning. In the study the social aspect facilitated students learning through each stage: sensory; cognitive and productive, either directly or indirectly, through the community of practice.

The strong family support in Lesley's class is at the heart of this case study. This social learning supports the constructivist theory discussed here, and enables The Suter to function as a tool for community cultural education. Vygotsky (1978) sees art as a tool for the advancement of human culture. He states that it should not be studied in isolation, but seen in relation to social context, and should be explored socially, in groups. It follows then that art gallery education needs to explore social issues, and also to reflect social structures in its practice. Hall (1997) states that culture is primarily concerned with the production and exchange of meanings between its members. For him the value of objects, like artworks, resides in the meaning that they are given, the way they are encoded. From the perspective of gallery education, that meaning is not only given by their display, but by their use during an education session. In other words the meaning of artworks is created socially.

The remainder of the chapter discusses how Suter education programmes encourage and facilitate the community of practice, and how learning supporters at The Suter have been seen as a support for learning.

Motivation

Lankford (2002) argues that it is through social interaction that commonalities among individual experiences are discovered, as well as conflicting and contrasting points of view. Freedman (2003) states that socially shared cognition is at the root of learning communities, which are the foundations for teachers and students acting in groups. At

The Suter communities of practice were seen to develop: adults and children were motivated and learning together, building up a shared vocabulary and understanding of learning in the Suter context. They worked together in a specific field for a specific purpose: namely to develop meaningful experiences in relation to the exhibitions on show at The Suter. In line with Paris's (2006) ideas on the community of practice in the museum, the parents seemed to view themselves as learners, and displayed a high level of personal interest in material covered. The sense of excitement through discovery was strong in both adults and children alike, for example in the orientation phase of *White Gold*. Additionally community of practice members, both students and adult supporters, were seen to take responsibility for supporting each other's learning.

The data demonstrates that this community of practice was highly motivating for students and adults alike. This reflects Paris's (1997) view that social interaction is motivating in many ways. Adults and children, both independently and mutually, were highly engaged during the sessions. There seemed to be a degree of personal ownership in the learning when the material covered was of particular interest to the parents. This was seen in particular with father Alex during the *White Gold* visit. Because of the local aspect, many parents who visited *White Gold* with students had relevant stories to share. As well as adults being able to convey their knowledge, their animation rubbed off on students, just as, Lesley suggested, Esther's enthusiasm added to the students' experience during gallery visits.

Piscitelli et al. (1999) noted a degree of interest from adults in on-going learning for themselves at the museum. On-going parental motivation was also evidenced at The Suter after the class sessions, by family visits to Suter during the weekend and the parents' interest in students' work from Suter sessions back at school. As we have seen the parents' motivation was two-fold: they were motivated to be involved in their children's learning and they were motivated by the exhibitions themselves.

Piscitelli et al. (1999) found that in museum education, children's interests seemed to be best met within a family grouping, where parents, grandparents and siblings related information from the exhibit to the child's known world. This finding is strongly reflected in the current study.

Paris (1997) established that when people work together they provide models of expertise that others can imitate. In the manner of cognitive apprenticeship, the parents, involved as learners at The Suter, are providing a model of both procedural knowledge (how to learn), as well as providing declarative knowledge (the actual content). Working amongst the range of people in this family-oriented group learning situation, students could see a range of approaches and levels of achievement. Additionally, as parents and students worked together on the same activities, the adults demonstrated that the task is worthwhile, by enthusiastically choosing to participate.

As well as often being independently involved in the learning activities, the adults often learnt in the course of their teaching role. Being in the role of learners as well as supporters for their children seemed to provide motivation for parents. In the process of teaching they became engaged in and learnt more about the topic. Motivation was exhibited in the constant supply of enthusiastic adults to support each trip.

Piscitelli et al. (1999) noted that the strengths of adult supporters with visiting groups were not fully utilized in the museum. Both classroom teachers experienced in effectively managing their own classes, and parents, who were experts in their children's abilities, were ignored once in the museum. The researchers expressed an urgency for museums to develop a more collaborative process of learning. As the current research demonstrates, adult supporters can help students in learning otherwise not possible (in the Zone of Proximal Development), high level adult support was seen to come from a range of people who were not necessarily gallery regulars. Adult helpers can effectively engage students in learning, as did the Nana, Jo, in *White Gold*. However, inexperienced or ineffective adults (such as a student teacher), who do not understand the nature of the learning process or their responsibility to the students, can detrimentally influence the learning of even very bright students. The effective functioning of the community of practice was seen to develop over time, with parents needing to build up understanding, to work effectively in their role at The Suter.

Effective Training

Piscitelli et al. (1999) found that learners could have more effective connections with exhibits when adult supporters took children's personal characteristics, such as age, background and ability, into account. Esther and Lesley's observation of the development of parents' relationship with students over the year concurs with this. As parents got to know all students better, they had more understanding of the individual students and the class as a whole, not to mention an understanding of the students' response in The Suter setting. The effectiveness of parents who visit regularly as helpers was noted. They understood the role of The Suter as a educational environment more fully, and therefore could more effectively support students in tasks. Adult supporters at The Suter were expected to take a degree of responsibility for the students' learning. It was agreed that this could be daunting to some parents, but that the regularity of their help could help overcome this, and the adults' consequent increase in confidence might reflect in the students' ability to achieve given tasks. However Lesley's visits were always very well supplied with adults helpers, indicating that the support role is not seen as arduous.

Harnessing the adults' enthusiasm into a productive learning support for the students was seen to be critical. This hinges on the clear understanding of the requirements of their role in the gallery, and just as the students' learning is constructed cumulatively, so is parents' understanding of their role in the gallery.

Power Sharing

This social learning approach facilitates ongoing involvement and 'ownership' of gallery. Likewise ongoing involvement facilitates effective parent helping. Suter education had significant expectations of parent supporters. As adult supporters were trained, an understanding built up of their power in the gallery: they were responsible in a significant part for the learning which took place. Esther and Lesley had varying views of the role and authority of the gallery educator. While Lesley felt that the students saw the gallery educator as the authority in the gallery, Esther felt that a range of perspectives and sharing authority was important. As well as validating a range of views, Esther sought to have parents confident in their role in the gallery to

be able to work with groups on tasks relatively independently, freeing teachers to take on differing roles such as monitoring students closely.

Regarding pluralistic viewpoints, Rice (1998) suggests that, generally, museums navigate the visitor's viewpoint towards the institution's meanings rather than vice versa. Despite the ideal of democratic learning at The Suter, in reality power sharing is circumscribed. Three issues are of note here:

1. The class visited pre-existing exhibitions which involved no input on their part in its physical creation. The constructive elements for students came from the creation of meanings and artworks in response to the exhibitions. The community of practice worked between boundaries imposed by the gallery and the classroom teachers. These were set by overt instrumentation such as the curriculum, and also more subtle codes.
2. In the discussion, Lesley stated that when she went back to school she could "have her say". This suggests that during the visits she felt she relegated her power.
3. Esther expressed frustration with the student teacher who involved her group in the exhibition in a different way from that prescribed.

Within the parameters of the lesson and exhibition, the community of practice was empowered to create meanings; but the structural aspects of the visit, the reins, appeared to be firmly held by Esther and Lesley.

Often they were seen to operate at a distance from students, orchestrating the proceedings, and spontaneously moving in to take advantage of opportunities. They felt that having an overview of the learning was important, as was having the flexibility to spontaneously adapt to the ideas from visitors. Observing herself on film enabled Lesley to notice her constant strategic physical placement in the gallery, which reduced the need for more active behaviour management. The focus of the parent support was around learning, rather than behaviour issues. However, given the diversity within the learning community, some adults demonstrated particular abilities in dealing with specific students, such as a father who dealt productively

with some behaviourally challenged boys in *White Gold*, and a mother who gently supported a non-English speaking child and a special needs girl.

Public acknowledgement of parents' input at Suter lessons was seen by Lesley as very important, given the value parents add to the students' learning. One significant benefit from this support was the facilitation of student's language development.

Language Development

Piscitelli et al. (1999) found that the chance to interact with people while in the exhibition was notably beneficial to students' learning. At The Suter students' involvement appeared to be strongly influenced by the learning supporters who accompanied them. A major benefit from this support was in language development.

Hall (1997), Mayer (2005a) and Hein (1998) all stress the central role of language in learning. Paris (1997) puts forward that collaboration encourages discussion, therefore the language and concept development are integrally linked to the social world. The learning supporters at The Suter help develop language in a number of ways: firstly, facilitating small groups during education sessions which enables the students to express their views more readily and in a more focused way; secondly, the high interest level of adults saw them engage in adult level discussion of concepts with teachers, within earshot of the pupils; thirdly, in multidirectional teacher/adult/student discourse, enabling more sophistication and complexity of concepts, thus facilitating cognitive flexibility.

Language was an on-going consideration throughout the research. In Esther's view, since the ability to communicate and develop concepts verbally is integral to learning, noise was an essential part of learning at The Suter. She had the expectation that there would be a hum of discussion throughout the gallery in the course of learning. All visiting students had the opportunity to develop ideas through talking about the artworks. The Suter visits developed language, both vocabulary and ideas, through talking about new things. Lesley affirmed the appropriate use of terminology such as 'installation' during visits.

Additionally this language development continued back at school. Lesley saw the ability to be able to speak in front of a group as a major achievement for her students,

and that it was valuable for six or seven-year-olds to be able to talk about something outside themselves. The adult helpers supported students' talk in small groups, helping them clarify concepts, and supporting them as they presented to the larger group. Lesley noted that the large number of adults accompanying visits enabled each child to have their voice heard.

Finally the exhibition text labels were employed as an information source during the exhibition visit, despite their being well beyond the reading level of the visiting students. Esther and Lesley discussed their difficulty level, and the impact of this on the visitor gaining information about the exhibition. Social learning once again supported the students' understanding of relatively sophisticated concepts, through the parents' interpretation of labels for students.

This is an example of learning operating in Vygotsky's Zone of Proximal Development. It was seen to be effective in this case, but would be flawed if the label information was not at a level appropriate for the parents to be able to read and understand. This needs particular consideration by exhibition designers. School visits bring a broad range of adults as supporters, and for the gallery to be user-friendly for all, the text labels need to express concepts clearly in simple language. *White Gold* achieved this through the use of engaging narrative, and clear language.

To sum up, the social aspect of learning at The Suter was provided through the community of practice which developed around the visits. This community of practice demonstrated a high level of motivation and involvement. This motivation in the adults appeared to support and encourage the students in their learning. It was seen to be important to have adults both confident enough, and well trained in their role, to support the students' learning.

Summary of Discussion Chapter

The art museum can be seen as an ill-structured learning environment, and because of this it provides particular cognitive challenges for learners. Students who visited The Suter had the opportunity to develop cognitive flexibility through taking on the role of intelligent novices. The age of the research group presented some particularities, for example, their lack of both procedural and declarative knowledge. It was established that this deficit could be supported through an effective community of

practice and the repetition of visits. Learning in the gallery was constructed through categorisation, interconnection and imagination, from the interpretation of sensory data. This interpretation was facilitated by the support of the community of practice, both through modelling of attitudes, as well as conceptual and practical approaches. The effectiveness of the community of practice seemed to be contingent on the sense of agency of its members within the art gallery environment.

Chapter Six: Developing Intelligent Novices: A Model for Learning in the Art Gallery

This chapter uses three inter-related strands from the discussion chapter: the individual, the physical environment, and the community of practice, to develop a model of learning in the art gallery.

The Individual Agent

Agency is an individual's sense of freedom to make choices and to act in a particular environment; feeling powerful enough in a situation to negotiate a transaction in one's own favour. This could be demonstrated in the gallery setting by the person's ability to interact with artworks, and to choose to interpret artwork in their own way. Agency allows a sense of confidence to perform in the setting, or further, a desire to perform there. It bypasses performance anxiety. A number of background factors might influence the extent to which an individual feels capable of this, such as social class, economic capital, cultural capital, ethnicity and so on.

A reflection of agency in this study was that families seemed to see the art gallery environment as not only a place they could go, but also somewhere which was worthwhile, and had meaningful outcomes for them. Engagement was seen as critical to this, as was a feeling of confidence, a sense of ownership and familiarity.

The content and the physical properties of the exhibition seemed to influence whether the viewer was immediately engaged, or whether this must be developed. The nurturing of this engagement was seen to be one of the roles of the educator. Although students may not immediately relate to an exhibition, such as *The Colours, Shapes and Images of a Lifetime*, the educator's link to the students' own experiences can personalize the exhibition. An existing sense of agency at The Suter can make these connections easier for these students, but the gallery teacher also can have a role in developing this agency, by making comparisons between exhibition content and the students' interest and experience.

Bourdieu's idea of habitus considers how our background affects engagement with aspects of society, such as art galleries. In the information age influences are complex. Even young children, such as those featured in this research, have access

and exposure to a plethora of ideas and information, through various media and online; and education needs to reflect this. Constructivism as an educational philosophy works to empower learners, enabling the combination of diverse ideas, and their cohesion into new ideas. It suggests the use of whatever cognitive resources the students may have, to develop and build ideas, in this case in response to art exhibitions at The Suter. Agency can be developed through exposure to multiple viewpoints, self-navigation through exhibitions, and individual interpretation. It can allow a personal 'buy in' to an experience.

Social interaction has a major part to play in agency. A sense of belonging as an individual, family and culture, are critical. Because of this, gallery teachers need to engage not just the individual, but families and classes as well, and through this encourage revisiting. If students not only visit with their class, but return in the weekends with their family independently, they are seeing the gallery as 'their place'. The class's repeat visits made The Suter a regular ongoing aspect of their education; this had an important role in developing students' agency in the gallery. Additionally the classroom teacher prioritizing Suter visits (in such ways as making bookings in prime time-slots) was significant.

Language has a role to play in agency. Both through the visitor's relating to the language used in the gallery: on the labels, by the educator and other museum officials, and also as a social mediation of meanings. The sharing of ideas through talk and debate enables the presence of ideas from all comers. The flexibility of meaning in visual art through the use of analogy, metaphors and categorisation enhances this.

The findings suggest that the immediacy of the sensory qualities of visual art can circumvent feelings of alienation and consequent powerlessness, which occur through coming into contact with something unfamiliar; in other words, counteract cognitive dissonance. As discussed, a sense of relevance in the artworks or learning can also quickly bypass any distancing; in particular through teaching universal messages, for example the role-playing of dealing with loss and death in *Arum*, cross-cultural social issues relevant to any society.

Of great significance to this study is the relationship between the student's developmental stage and their sense of agency. These young students were seen to have little knowledge, but an open attitude. Lesley and Esther identified one of the benefits of this age level as being their readiness to learn, but inquiry was not developed in the students as yet. Because their thinking can be naïve, it might not occur to them to question (an example of this was their lack of understanding about the fate of bulls in *White Gold*). With this age level, the concept of agency presents some particular issues.

Despite the teachers' desire to develop their students' thinking towards independent ideas, the six or seven-year-olds were seen as expecting to be led. However, the students demonstrated confidence in expressing their ideas, and their main independence was shown in response to the physical aspects of the display. During the process of learning they heard the views of a range of adults and other children; the teachers' intention in this being that students learn about holding and justifying independent views, through modelling by more sophisticated thinkers. Lesley stressed the importance of teaching her students the process of inquiry.

In this study it was seen that family and social learning had a significant influence on the students' outcomes. It follows, that the demonstrated agency of the family or the class group within the setting would also have influence. The development of this, in all involved, will enhance student learning, since they still have considerable dependence on their educators and caregivers. This coheres with the concept of socially shared cognition.

ESTHER: ... I'm always ... trying to ... reinforce the idea that ... the authority comes from all sorts of different people, because you can take art in such a lot of ways ... they are pretty confident to approach it in different ways ... as you can see by their questioning ...

The Community of Practice

In this study the role of socially shared cognition was shown to have a strong influence on agency; with the active and enthusiastic involvement of adults and students, mutually, in the learning.

It could be said that gallery learning becomes more ‘authentic’ if adults are choosing to participate alongside the children, both through sharing in and leading activities, as well as by engaging in multi-directional discourse to tease out ideas. Also that this ‘authenticity’ is learning in an authentic social setting, where all members are genuinely motivated and involved in the learning process. Gallery learning was seen to be more purposeful because of its social nature.

With a broad range of ages working together the depth and complexity of learning was demonstrably improved. For example, the young students had a limited knowledge base for learning, and the adults supported them in this. The sensory elements of art were seen as suitable starting points for the students, and were often stronger influences initially. These sensory elements could then lead to the contextual aspects. For young learners the contextual was seen to be something to be developed in small steps, with support. Effective socially shared cognition depends on all involved feeling sufficient agency to fully participate, to not only listen, but to reinterpret or challenge ideas presented. Socially shared cognition can occur through an initial individual or social response to the physical aspects, such as the setting and sensory stimulus, followed by the development of learning in a group setting. This was seen in *White Gold* where the students initially interacted with the physical aspects of the installations, before focusing on the stories which provided context, and then personalised it by creating their own herd. Additionally each stage added to the construction of positive social values. Art in the public arena can become a tool for developing a variety of understandings; these were seen to be made richer through social discourse.

Socially shared cognition is by nature language based. In the research Suter education was seen to give young children both the vocabulary and opportunity to express important ideas: “I just feel that the kids have been enveloped in this learning experience, and mood and feeling experience, and the visits to the gallery have just given them the adjectives and the words and just let it all come out. It’s very open. It’s just wonderful” (Lesley), consequently developing their ability to build up a sense of agency. If language is a means for developing agency, it follows that social learning is also related.

“... to hear that the kids are confident and ... articulate, that’s amazing, because that means that the actual ideas that underline the artwork are ... coming through. They’re in there, and they’re able to use those things which are important parts of art ...” (Esther).

As discussed in Chapter Three, some researchers consider interpreting art through language questionable, thus physical immediacy becomes important as an independent direct form of interpretation. However language is essential to a social interpretation of the visual art. Learning has been seen to be richer through being multi-layered, as can occur through socially shared cognition. If it is social, it is informed and mediated by society. Multiple viewpoints are necessary in this process. Adult supporters were seen to have an important role in this, if they were empowered to teach, effectively trained, and confident to share power, in other words had a strong sense of agency in the gallery.

The Physical Aspects

The gallery, the exhibition, the artwork, the materials used, the way visitors navigate the artwork, are physical aspects of the art museum visit. These provide sensory stimuli which give an individual element to learning, as no one’s sensory response is the same as another’s. Sharing these responses depends on the use of language, translating the experience to another medium; this counteracts what Hooper-Greenhill (1991) described as the distancing effect of using sight alone. As discussed, sensory responses can be executed in a range of ways, including by means of hands-on learning. One alternative to interpretation through language, or merely looking at artwork, is learning through making; developing practical approaches relating to artwork on display, as was demonstrated through the example of *The Wreck of the Delaware*.

Physical elements are personal and immediate, and could be seen to make a doorway into understanding. Our response to these is very individual, but also social, as each artwork on display is created by someone else for us to experience and interact with. The kind of response to the artist’s communication depends on things such as personal relevance or engaging narrative, as well as the viewer’s motivations and emotional responses. The viewer may engage with the artist’s meaning, or create their

own meanings in response to the artwork. One way students in this research could engage with the physical aspects of the exhibitions was through such methods as mimicking the subjects of artworks.

In the study compelling sensory aspects and an unusual setting seemed to make the learner more alert and responsive. In addition to this, sensory experiences, and support from more experienced people, balanced out a deficit of prior learning.

Together

As we have seen the three elements: individual's agency, the social aspects of learning, and the physical aspects of the gallery and exhibitions, have an interconnected relationship, influencing each other and the learning which can take place. Hooper-Greenhill's (1991) new communication model for museum (Figure One) is one model of meaning-making in the art gallery. Within the framework of the three categories above, it is pertinent to compare this model with the current research findings:

The Physical Setting: Hooper-Greenhill places the physical between the communicators and the meaning makers, in effect separating them due to the model's linear shape. The current research considers all components as interrelated with the communicators as the meaning-makers and vice versa. The physical aspects relate to both the individual and the social elements.

The Individual Agent: Hooper-Greenhill describes the individual as giving meaning to the media. The current research concurs with this, finding that factors of the individual's sense of agency, motivation, familiarity with the setting, and developmental level, all influence the construction of meaning.

The Social Setting: Hooper-Greenhill suggests a team of communicators (indicating a social aspect to meaning making in the gallery), however she places these as separate from active meaning makers. The current research presents the gallery learning as socially shared cognition occurring in a community of practice. The discourse is multi-directional, in other words the communicators and the meaning makers are the same. The study puts forward that learning is purposeful if social, and this element indicates the significance

of language in the process. Additionally, in the current research the social setting was seen to affect agency and therefore, as Hooper-Greenhill suggests, visitor satisfaction with the whole experience.

Agency obviously is closely connected to social aspects, particularly through concepts such as habitus. This is shown in the research by how parents felt themselves welcome or rightful participants at galleries, alongside their children. This seemed to influence students' ability to learn. Agency also relates to the physical aspects of galleries, in that students who develop a sensory relationship with the art can feel more engaged with the environment. Their experience is more immediate, and so they may have an enhanced sense of connection with the exhibitions and artworks, as seen in *White Gold*. The students' (and parents') immediate connection with the large, life-sized, hanging cows provided instant engagement. This was further enhanced in the lesson by the familiar local and visceral content. Our sensory experiences can be shared, and through this, developed. As discussed in Chapter Two, Hooper-Greenhill's (2000) view is that understanding the significance of material aspects of objects requires an interpretive framework; but that this imposes limits to the range of meanings produced.

The degree of importance of each of the three facets; the physical, the social, and the individual, is influenced by a variety of factors, as discussed. It is the gallery teacher's role to unite the three elements in a way which suits a particular situation. She must develop the intelligent novice through helping him/her to understand what there is to learn about art, and how to approach it. This could be described as art appreciation: the embedding of concepts through the scaffolding of sensory discernment, and the cognitive aspects involved in and elaborated from this. A constructivist approach enables the construction of meaning connecting the three aspects of the individual, social and physical.

This could foster a sense of agency in students, as they learn to take strategies learnt from the gallery and use them later independently as intelligent novices. The educator is able to develop more in-depth understanding in students through the mix of varied experiences, which generally come through repeat visits such as those seen in the classes of Lesley Kotua. Additionally agency and social aspects are very relevant to

the student's home background, which must have a significant effect on the development of intelligent novices.

“... artists are usually trying to make art to express important ideas ... in our culture, like the death one ... the important learning ... is the actual communication of important societal ideas ... like how we deal with death, which is a really heavy one ... But the kids, they all really, really wanted to talk about their cats who died ... because it's ... universal, and even though it's something we don't like talking about that much, it helps ... art is ... a way to express it” (Esther).

The above quote, discussing the *Arum* visit, demonstrates the three aspects of gallery learning discussed. The individual's agency was the students' ability to voice their feelings and ideas about significant life events (death and loss). The physical aspect was the artwork which triggered the exploration of concepts (the *Arum* installation itself), and also, the hands-on creating of the artworks by students. Socially shared cognition came through the sharing and communication, both verbally and through artworks, where the students discovered the universality of the concepts.



Figure Fourteen: Model of learning in the art gallery

Figure Fourteen shows a model for developing intelligent novices in the art museum. As opposed to Hooper-Greenhill's model, it stresses the inter-connectedness of all elements. As discussed, in an ill-structured cognitive domain everyone is to some extent a novice. This applies when approaching fresh works of art or exhibitions, particularly if we are unfamiliar with the conventions of the particular genre of art on show. The three factors in the diagram, and the extent to which they are involved in the meaning-making, influence how we manage the new situation.

Learning in the art gallery can be likened to an improvisational theatrical performance. The exhibition can be seen as the set, the place where the drama occurs. In each visit the set (the physical elements of an exhibition) is fixed and so provides a stable background through which to enact authentic cultural transformation. Participants interact both with and in front of the set. In this model participants can be described as spect-actors, in the terminology of Boal (1995). There is no audience separate from the actors. All in the performance are 'activists', actively constructing meaning. There is no script, so participants take their cues from each other and the setting, making up the performance as they go. The gallery is the medium for cultural understanding and change, it enables the activity to take place, but the real substance comes from the spect-actors interacting with each other as they respond to the set (the exhibition). It enables participants to identify and question important cultural issues. An individual can interact with the set, but the transformation will be more sophisticated if they interact with other spect-actors as well. At any moment the set is fixed, but the spect-actors' response is variable. Good improvisational theatre depends on participants being responsive to each other and the setting; in particular, noticing changes occur and modifying one's performance. The gallery educator is the director, but her role is as a facilitator, manipulating and suggesting, to enable the spect-actors to an optimal improvised performance, rather than coaching them in set lines and roles. See Figure Fifteen:

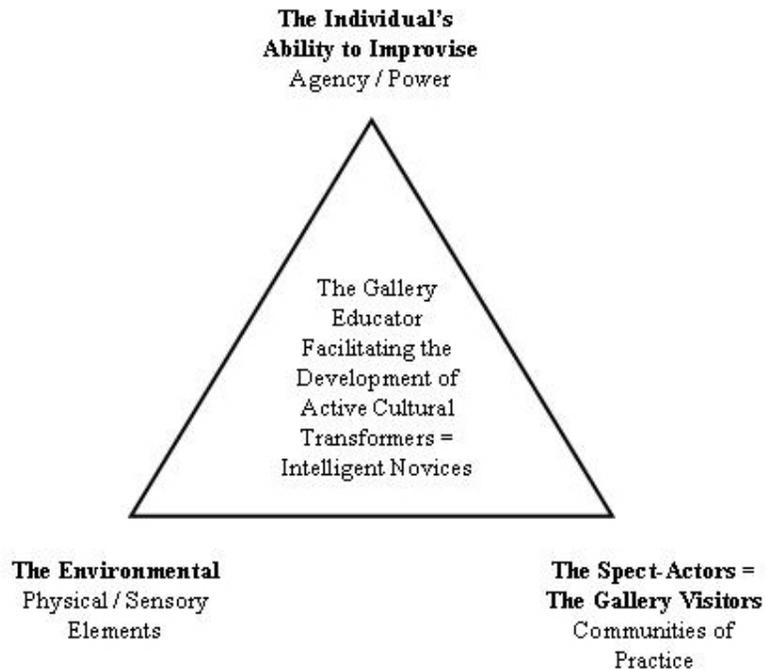


Figure Fifteen: Art gallery learning as a dynamic theatre

This aligns with the idea of culture as fluid, constantly changing, and amorphous. We need to be adaptable to participate in the evolution of this sort of society. This model shows how the art gallery can act as a testing ground where we enact cultural interplays. The participants should feel free to interact with others, the set and to improvise, in other words have a sense of agency. To visit the gallery is to develop active cultural transformers, in effect the process, described in this research as cultivating intelligent novices in the art gallery setting.

Chapter Seven: Conclusion

This chapter reviews Bruer's definition of the intelligent novice in light of the research data, adapting it for the specific setting of the art museum. It reviews the key arguments of the thesis before considering broader issues which emerge, signalling possible future directions for research. Additionally the scope and limitations of the research, and possibilities for testing the model presented here, are discussed.

Review

Initially the intelligent novice was defined as "people who learn new fields and solve novel problems more expertly than most, regardless of how much domain-specific knowledge they possess. Among other things, intelligent novices seem to control and monitor their thought processes" (Bruer, 1993, p.15). In the course of this research, the implications of this, in relation to the specific setting of the art gallery have been considered. It was put forward that, due to the ill-structured nature of the art gallery environment and its cultural role in society, learners in this setting can use the qualities of Bruer's definition, to become active cultural transformers. This occurs by the learner interacting with the physical aspects of the gallery such as the artworks, and the building of understandings due to socially shared cognition in a community of practice. Despite the developmental level of the students in the study, they were seen to be able to develop as intelligent novices, with the support of the community of practice and repeat visits to the gallery. These factors were seen to enhance the learning of all members of the community of practice.

This study focused on a particular case within art gallery education in New Zealand. It suggests that in the gallery setting, intelligent novices are developed through an appropriate balance of: individual agency, physical elements and community of practice, tailored to the learner. It showed the benefits which can occur when a supportive family community surrounds the museum visits, and when they are on-going. Additionally, although the research initially focused on the six and seven-year-olds in Lesley's class, the enthusiasm and involvement observed in the adult supporters soon led to their inclusion as learners in the research, broadening this study's concept of learning.

The other main influence on the development of intelligent novices appeared to be their ability to make connections. These often occurred through referencing other visits to The Suter, or other out-of-school experiences. Consequently repeat visits to the Suter seem to make a considerable difference to the learning outcomes possible for students. Additionally, students could learn to make connections through the hearing of a variety of different ideas, provided by the presence and active participation of parents and other adults.

The nature of culture is varied and changing, just like the ideas and responses to the artworks at The Suter from the visitors and other participants in the exhibitions. Through involvement in the discourse during Suter visits, students can experience culture in practice. Agency was seen to be enhanced by the students' active participation in this discourse. This agency has influence on their ability to learn. Constructivism can be clearly linked to the concept of agency, since in this model one needs to be able to make independent connections.

As the research progressed it became clear that the gallery teacher's role in assisting students' learning in the art museum was in some ways indirect. She, in alliance with the classroom teacher, orchestrated the learning in such a way that the many facets which might have influenced each particular learning situation were organized, so as to optimise the possibilities for the students.

Broader Issues

The outcomes of this research have significant implications for Learning Experiences outside the Classroom, New Zealand's Ministry of Education funded programme which supports education programmes for schools out of the classroom. As it is currently the major funder of museum education in New Zealand, its parameters have a strong influence on the delivery of museum education programmes. In the interest of the widest possible spread of these resources, LEOTC in effect encourages one-off visits, due to its approach to recording numbers of visitors. These one-off visits are required to have meaningful connections to classroom programmes, which enables the on-going development of concepts covered in gallery lessons. However there are disadvantages to the discouragement of repeat visits to the actual gallery. This thesis puts forward that the type of learning which occurs in art galleries is particular.

Therefore, although the gallery learning can be revisited and developed back at school, that the particular cognitive development specific to learning in the art gallery, can only happen there. This learning is limited by one-off visits; repeat visitors can build on already established ways of thinking. Additionally, schools in The Suter's catchment, report a high level of interest in the development of ongoing education programmes at The Suter, as well as the current one-off lessons on offer. This seems to indicate their recognition of the specific benefits of the learning which takes place there.

To use the metaphor of a theatre from Chapter Six, the set (the art gallery) enables the alchemy of developing active cultural participants, through the process of becoming intelligent novices. This concept has currency in the current New Zealand educational context, as it aligns with the New Zealand Curriculum, implemented in 2010. Its vision is to promote confident, connected, actively involved lifelong learners through values, key competencies and learning areas. Its principles are: high expectations, Treaty of Waitangi, cultural diversity, inclusion, learning to learn, community engagement, coherence and future focus (Ministry of Education, 2007).

The model put forward in this study promotes, in particular, cultural diversity, community involvement and inclusion, through socially shared cognition in a culturally rich setting. Learning how to learn promotes agency, and future focus occurs in the recognition that knowledge is not static. The sharing of ideas and culture, through the gallery's socially shared cognition, shows the complexity and fluidity of culture; creating agency by allowing the students to practice dealing with diverse changing ideas, which are the impetus for our perpetually changing culture.

The emphasis on the curriculum's 'key competencies' (thinking; using language, symbols and texts; managing self; relating to others, and participating and contributing), which are regarded as "key to learning in every learning area" (Ministry of Education, 2007, p.12), has great relevance to this study. The document describes how "people use these competencies to live, learn, work and contribute as active members of their communities" (Ministry of Education, 2007, p.12). It states that through these they connect with knowledge, attitudes and values, which 'lead to action'.

The following statement from the New Zealand curriculum, relates to art gallery learning, as discussed in this research. It emphasizes social learning, the development of learning over time, and the importance of learning in contexts:

“... the (key) competencies occur in social contexts. People adopt and adapt practices they see used and valued by those closest to them, and they make these practices part of their own identity and expertise.

The competencies continue to develop over time, shaped by interactions with people, places, ideas and things. Students need to be challenged and supported to develop them in contexts that are increasingly wide ranging and complex” (Ministry of Education, 2007, p.12).

The key competencies are omnipresent in gallery education, and as recognised by the curriculum document, facilitated by the social learning which is integral to the gallery learning explored here. That the document describes key competencies occurring over time has resonance in the findings of this study, promoting the need for repeated gallery experiences, in order that students obtain optimal learning. Finally the recognition of the need for developing learning in a wide range of contexts gives credence to learning out of the classroom, and the particular learning in the gallery setting, due to its challenging nature as an ill-structured learning environment.

Scope and Limitations

This study was preliminary research based on a particular relationship between a class and an art gallery. It is impossible that this sort of case study would be entirely objective in the traditional sense; it was not intended to be. The nature of the work, with the researcher’s position amongst the research prevents this. Action research by nature, places the researcher within the field of study, and depends on the self-analysis of his/her own work. The presence of Lesley provided a foil to enable a degree of separation. As a preliminary study this action research is helpful, providing a starting point for future research. However, ongoing study in the field needs to become much broader, and look at the overall practice of art museum educators in their galleries.

How Can We Check the Model Presented?

The model presented has three elements: the individual's agency, the physical elements of the gallery, and the community of practice. To check the model it will be necessary to make comparative studies into varying art museums' learning approaches. For instance, to compare those with varying adult input; to study students' reaction to artworks which have a significant sensory element, such as three dimensional installation art, and compare them to students' reaction to less interactive artwork; or to compare learners with a greater sense of agency with those less confident and familiar in the setting.

Additionally the research could be seen to have implications regarding communities of practice for school systems overall. The high level of motivation which occurred through these multi-level (with the inclusion of adults) experiences was seen to add to the learning which took place. It would be interesting to do a broader study analysing the variations in style of learning opportunities, in different gallery education situations within New Zealand.

Possible Future Directions

As stated this research is very particular. The findings in The Suter setting need to be now extended into other art museums in New Zealand and comparisons made. Each art gallery in New Zealand will have particular schools that by virtue of proximity, or for other reasons, are able to visit the gallery frequently. Identifying these schools would provide suitable subjects for a broader study into the benefits of repeat visiting. The lack of a professional body for art gallery educators, and the varied nature of the galleries themselves, give a lack of consistency to the programmes provided. This is not necessarily negative, it is very much aligned with the concept of ill-structured cognitive domains, seen here as a positive element in the development of novice learners. However it presents an issue to be addressed in developing a broader research project. The methodology would have to cater for quite a structural variance between institutions, and their educational programmes.

Additionally, the researcher's particular interest would be to find out more about how learning in the art museum promotes cognitive flexibility, and whether this can transfer to other settings, enabling a learner to more confidently approach new

situations. Research into this would need to be carried out with a quantitative approach, perhaps testing comparative learning outcomes. If this can be established, it has significant implications for our perceptions of the nature of art museum education, its purpose, and how it fits into the education system overall. This begs the question of how situated cognition relates to transfer, considering the premise that the learning which occurs in the art museum is very particular.

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